Pearl Coast Heli Maintenance

Job # : **233**

Rego : **NBY**

AFTTIS : 52.30

Start Date : 28-03-2019

Finish Date : 28-03-2019

Customer : Horizontal Falls Helicopters

Job Type : AD/SB

Coordinator : s 22 [redacted]

Description : RHC R44 S/B 96 D602-1 Time Delay Assembly

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 233

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 28/3/19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	52.3
Airframe	Days	28-03-2019

Work Required : RHC R44 S/B 096 D602-1 Time Delay Assembly

ATA Code :

Task No 001
Category Airframe
Monitor By Days, Hours
Interval 120
Due 27-04-2019, 100
To Run 30

Action Taken :
C/O Installed Customer Supplied D602-1 Time Delay NDF HELIBIZ BN AB2373,

Component Change Details:

Description :	
P/N Off :	
S/N Off :	
TSN :	
TSO :	
Condition :	
P/N On :	
S/N On :	
TSN :	
TSO :	
GRN On :	

Labour Hours

Calibrated Tooling Used :

Supplier	Description	Serial #	Calc. Due Date

Signature Sign Off :

A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 28/03/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Helibiz Pty Ltd
Ph.07 4946 9422 Fax.07 4946 9188 ABN.89011072816
HELIBIZ PTY LTD, Whitsunday Airport, Shute Harbour Road Airlie Beach QLD 4802
reception@helibiz.com

Delivery Docket

Customer: West Coast Seaplanes Pty Ltd
PO Box 905
BROOME WA 6725

Ship To: West Coast Seaplanes Pty Ltd
Hangar 14, Gus Winckel Road
Broome WA 6725

Sales Reference: 4567
Date: 23-11-2018
Job No:
Customer Ref: TIME RELAY
Ship Via:

Part #	Description	GRN	Quantity
D602-1	RELAY, TIME DELAY	AB2373	1 Each
FREIGHT	Freight - Aust Post - 23/11/2018		
NOTES	SB96 for Ship SN: 2544 (Rhys Thomas)		Each

Comment:

VH-NBY JAN. 233

ROBINSON
HELICOPTER COMPANY
2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-96

VH NBY
SN 2544

DATE: 02 October 2018

TO: R44-series Owners, Operators, and Maintenance Personnel

SUBJECT: D602-1 Time Delay Assembly

EFFECTIVITY: D602-1 Time Delay Assemblies identified as Lot 99 or Lot 100. Affected parts were originally installed on R44 Helicopters S/N 0046, 0381, 1308, 2076, and 2507 thru 2557, and R44 II Helicopters S/N 10664 and 14175 thru 14249 except 14221, 14222, 14245, and 14247. Affected parts were also shipped as spares between November 2017 and June 2018.

TIME OF COMPLIANCE: Within next 100 flight hours or by 31 January 2019, whichever occurs first.

BACKGROUND: RHC has determined that Lot 99 and Lot 100 of D602-1 (Clutch Actuator) Time Delay Assemblies were assembled with an incorrect resistor, which may cause the circuit to overheat in service.

COMPLIANCE PROCEDURE:

1. For each affected helicopter, order a replacement D602-1 Time Delay Assembly from RHC Customer Service. Note that MS3367-5-9 and MS3367-7-9 ty-raps will also be required as shown in Figure 1.
2. Remove C706-1 tailcone cowling assembly.
3. Verify battery switch is off. Refer to Figure 1. Cut and discard ty-raps securing D602-1 Time Delay Assembly to frame. Disconnect time delay assembly from airframe harness and remove time delay assembly.
4. Connect replacement D602-1 Time Delay Assembly to airframe harness at connector. Secure with ty-raps as shown. Cinch ty-raps until snug without over-tightening, and trim tips flush with heads. Verify security.
5. Momentarily engage and disengage clutch actuator to verify proper operation.
6. Install C706-1 tailcone cowling assembly.
7. Make appropriate maintenance record entries.
8. Discard or return to RHC any spare D602-1 Time Delay Assemblies identified as Lot 99 or Lot 100.

(OVER)

s 22 [redacted] 28/3/2019.

APPROXIMATE COST:

Parts: No charge for D602-1 Time Delay Assembly if ordered by 31 January 2019. Reference helicopter serial number or RHC Invoice number.

Labor: 1.0 man-hour.

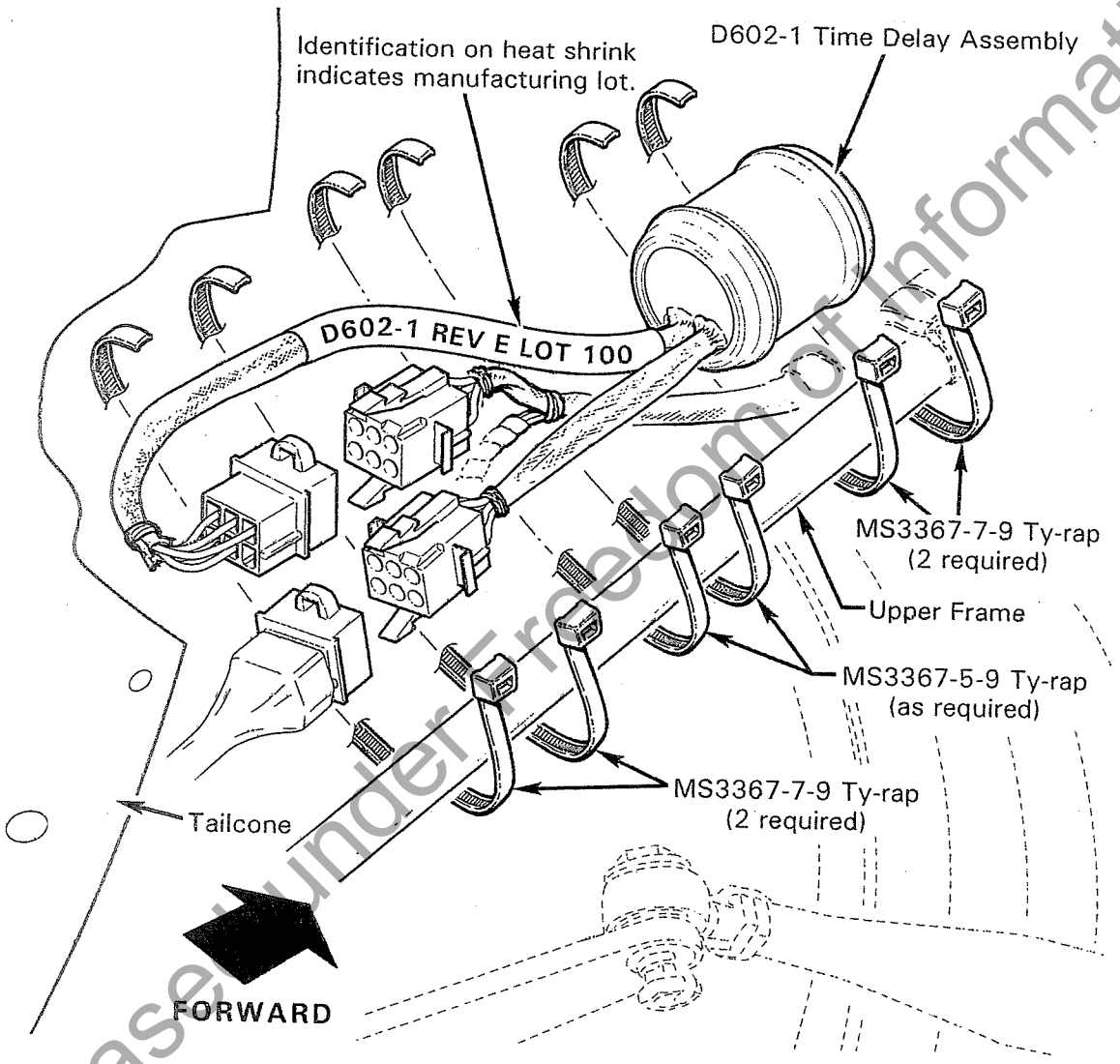

FIGURE 1

Engineering Work Package Pearl Coast Heli Maintenance Pty Ltd COA - 0686

JOB DETAILS

Job Number	233	Date Raised	28/03/2019	AF TTIS	52.3
Aircraft Registration	VH-NBY	Date Completed	28/3/19.	Engine TTIS	
Operator	Horizontal Falls Helicopters	Approved Maintenance Data (Airframe)	RHC R44 RTR 460 Maintenance Manual Rev May 2016	Landings/Starts	
Aircraft Type	R44			Cycles	
Operator Base	Pearl Coast Heli Maintenance	Approved Maintenance Data (Engine)	Lycoming O-540 Operators Manual Rev March 2009	RINS	

Job Description : RHC R44 S/B 96 D602-1 Time Delay Assembly

SIGNATURE SIGN OFF	Name	Licence No.	Signature & Initial	Trade Type	Hours
Job Coordinator	[redacted] s22	594407	[redacted] s22	LAME	1
AME/LAME					

Pearl Coast Heli Maintenance

Job # : **255**

Rego : **NBY**

AFTTIS : 88.62

Start Date : 12-05-2019

Finish Date : 24-05-2019

Customer : Horizontal Falls Helicopters

Job Type : 100Hrly/Annual Inspection

Coordinator : s 22 [redacted]

Description : 100Hrly/Annual Inspection/300Hrly Valve Inspection/M/R Tack & Balance

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted] s 22
Print Name : [redacted] s 22
Date : 13/5/19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Pearl Coast Heli Maintenance

Airframe

Work Required : 100HRLY/12MONTHS 100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200

Task No 001
Category Airframe
Monitor By Hours, Days
Interval 100
Due 100, 19-07-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted] s 22
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : 500HRLY/12MONTHS Clean & Test M/R & T/R Gearbox Chip Detectors Per RHC R44 M/M Section 1.115

Task No 002
Category Airframe
Monitor By Days, Hours
Interval 365
Due 11-09-2019, 500
To Run 122

Action Taken :
Entered M/R

Labour Hours

ATA Code :
A.M.E [redacted] s 22
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Gascolator Filter Clean/Inspect

Task No 003
Category Airframe
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted] s 22
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : 300HRLY/3YRLY Lubricate C181-3 Lower Bearing IAW RHC R44 M/M Section 1.140

Task No 004
Category Airframe
Monitor By Hours, Days
Interval 300
Due 300, 10-09-2021
To Run 211.38

Action Taken :
Entered M/R

Labour Hours

ATA Code :
A.M.E [redacted] s 22
L.A.M.E
Licence No 594407
Date 13/05/2019

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Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19.
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : 100HRLY/12MONTHS M/R Head Teeter Friction Test

Task No 005
Category Airframe
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS M/R Swashplate Friction Test

Task No 006
Category Airframe
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Maintenance Flight To Be Carried Out Before Release To Service

Task No 007
Category Airframe
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS POH Update/Status Check

Task No 008
Category Airframe
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

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Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19

Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : 300HRLY Replace Hydraulic Filter IAW RHC R44 M/M Section 1.170

Task No 009
Category Airframe
Monitor By Hours
Interval 300
Due 300
To Run 211.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230

Task No 010
Category Airframe
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O LHS 0.115" RHS 0.100" Within Limits NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : RHC R44 S/B 097 R44 Raven II Induction Hose

Task No 011
Category Airframe
Monitor By Hours
Interval 100
Due 100
To Run 11.38

Action Taken :
N/A Due A/C S/N

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : RHC R44 S/B 098 Air/Oil Seperator Hose Spring

Task No 012
Category Airframe
Monitor By Hours
Interval 100
Due 100
To Run 11.38

Action Taken :
N/A Due A/C S/N

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Form No : null

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Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted] s 22
Print Name : [redacted] s 22
Date : / /
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : ADDITIONAL M/R Track & Balance

Task No 013
Category Airframe
Monitor By
Interval
Due
To Run

Action Taken :
C/O To Under 0.2IPS Within Limits NDF

Labour Hours

ATA Code :

A.M.E [redacted]
L.A.M.E [redacted] s 22
Licence No 594407
Date

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Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19.

Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Elec. Instr. Radio

Work Required : 12MONTHS Annual ELT Inspection IAW 14 CFR 91.207

Task No 014
Category Elec. Instr. Radio
Monitor By Days
Interval 365
Due 11-09-2019
To Run 122

Action Taken : Entered M/R

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 2YRLY CAO 100.5 ATC Transponder Test

Task No 015
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 03-05-2020
To Run 357

Action Taken : Entered M/R

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 50HRLY/12MONTHS Lights/Electrical/Warning Lights Check

Task No 016
Category Elec. Instr. Radio
Monitor By Hours, Days
Interval 50
Due 50, 11-09-2019
To Run -38.62

Action Taken :

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19.
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Engine

Work Required : 100HRLY 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 017
Category Engine
Monitor By Hours
Interval 100
Due 100
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : TCM S/B 643C 100Hrly Magneto Inspection

Task No 018
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 300HRLY 300 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 019
Category Engine
Monitor By Hours
Interval 300
Due 300
To Run 211.38

Action Taken :
C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018"

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : LYC S/B 480F 4Monthly Oil & Filter Change

Task No 020
Category Engine
Monitor By Days
Interval 120
Due 09-01-2019
To Run -123

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19.
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : 50HRLY 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 021
Category Engine
Monitor By Hours
Interval 50
Due 50
To Run -38.62

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Airbox Clean/Inspect

Task No 022
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : LYC SI 1129B Alternator Belt Tension Check

Task No 023
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Alternator Inspection, Belt Inspect/Adjust/Replace

Task No 024
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19.
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : LYC S/B 366C Carb Throttle Body Screw Inspection

Task No 025
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Carburettor Inspection

Task No 026
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : LYC SI 1191A Cylinder Compression Check

Task No 027
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O #1 74/80 #2 75/80 #3 76/80 #4 76/80 #5 78/80 #6 78/80 Within Limits NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Engine Compression Check

Task No 028
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19.
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : LYC S/B 388C Exhaust Valve & Guide Inspection

Task No 029
Category Engine
Monitor By Hours
Interval 300
Due 300
To Run 211.38

Action Taken :
C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018"

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : TCM S/B 653 Hot Magneto Test

Task No 030
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : LYC S/B 388C Initial Exhaust Valve & Guide Inspection

Task No 031
Category Engine
Monitor By Hours
Interval
Due 100
To Run 11.38

Action Taken :
C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018"

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

Work Required : TCM S/B 670 Magneto Distributor Block Inspection

Task No 032
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 13/05/2019

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Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 13/5/19.
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : LYC S/B 301B Maintence Procedures & Service Limitations For Valves

Task No 033
Category Engine
Monitor By Hours
Interval 300
Due 300
To Run 211.38

Action Taken :
C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018"

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : LYC S/B 480F Oil Filter Change & Inspection

Task No 034
Category Engine
Monitor By Hours, Days
Interval 50
Due 50
To Run -38.62

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : 100HRLY/12MONTHS Spark Plug Clean/Gap/Test

Task No 035
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

Work Required : LYC SI 1080C Special Attention Maintenance Items

Task No 036
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E [redacted]
Licence No 594407
Date 13/05/2019

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Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature : [redacted]
Print Name : s 22 [redacted]
Date : 13/5/19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Work Required : 100HRLY/12MONTHS Starter Motor/Starter Ring Gear Inspection

Task No 037
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E s 22 [redacted]
Licence No 594407
Date 13/05/2019

Work Required : LYC S/B 595 Torque Values Ignition Harness Attach Screws

Task No 038
Category Engine
Monitor By Hours, Days
Interval 100
Due 100, 11-09-2019
To Run 11.38

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E s 22 [redacted]
Licence No 594407
Date 13/05/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Additional Worksheet Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature :
Print Name : s 22
Date : / /
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Item	Defect or Work Required	Rectification Details	A.M.E	L.A.M.E	Licence No.	Date

certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job umber for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No :

Additional Worksheet Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 255

Co-ordinators Signature :
Print Name : s 22
Date : / /
Licence No : 594407

Component	Counter	Total
Airframe	Hours	88.62
Airframe	Days	12-05-2019

Item	Defect or Work Required	Rectification Details	A.M.E	L.A.M.E	Licence No.	Date

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No :

Co-Ordination and Final Certification

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Owner : Horizontal Falls Helicopters
Operator : Horizontal Falls

Job No : 255
Job Description : 100Hrly/Annual Inspection/300Hrly Valve Inspection/M/R Tack & Balance

M/R Date of Issue	13/5/19.
Expired M/R Serial No.	A2104447
Issued M/R Serial No.	A158251.
Aircraft TTIS	88.62

L.A.M.E CERTIFICATION

I hereby certify that all maintenance in the category(s) for which I am responsible have been completed.

Categories covered during this inspection - Certifications

Airframe	[redacted] s 22	Licence Number	594457	Date	13/5/19
Engines		Licence Number	594457	Date	13/5/19
Electrical		Licence Number	594457	Date	13/5/19
Instrument		Licence Number	594457	Date	13/5/19
Radio		Licence Number	594457	Date	13/5/19.

For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Independent Inspection Certificate Pursuant to CAR 42G. Inspection carried out on the following :

1st Inspection Signature : Licence Number

2nd Inspection Signature : Licence Number

CO-ORDINATING CERTIFICATION

I hereby certify for the completion and co-ordination of the entire inspection.

LAME Signature : [redacted] s 22

LAME Licence No : 594407 Date 13/5/19. For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

A CERTIFICATION ABOVE CONSTITUTES A CERTIFICATION PURSUANT TO CAR42ZE THAT ALL MAINTENANCE HAS BEEN PROPERLY CERTIFIED. Note: The person who certifies for the completion and co-ordination of the entire inspection or workpackage contents is to ensure that any maintenance performed during the inspection has not invalidated a certification already made in another category and has been completed and properly certified.

Engineering Work Package Pearl Coast Heli Maintenance Pty Ltd COA - 0686

JOB DETAILS

Job Number	255	Date Raised	12/05/2019	AF TTIS	88.62
Aircraft Registration	VH-NBY	Date Completed	13/5/19.	Engine TTIS	
Operator	Horizontal Falls Helicopters	Approved Maintenance Data (Airframe)	RHC R44 RTR 460 Maintenance Manual Rev May 2016	Landings/Starts	
Aircraft Type	R44			Cycles	
Operator Base	Pearl Coast Heli Maintenance	Approved Maintenance Data (Engine)	Lycoming O-540 Operators Manual Rev March 2009	RINS	

Job Description : 100Hrly/Annual Inspection/300Hrly Valve Inspection/M/R Tack & Balance

SIGNATURE SIGN OFF

	Name	Licence No.	Signature & Initial	Trade Type	Hours
Job Coordinator	[redacted] s 22	594407	[redacted] s 22	LAME	
AME/LAME	[redacted] s 22			AME	

Pearl Coast HeliMaintenance Pty Ltd – Parts Control Form J/N 255 Page No: 1

Date	Part No.	Serial No.	Description	Qty.	GRN/Batch No:	ARC/Form 1 No:	Removed By	Aerotrack Updated

ENG COMPRESSIONS

1	74/80	2	75/80
3	76/80	4	76/80
5	78/80	6	78/80

ENGINE VALVES

1	0.021"	2	0.019"
3	0.020"	4	0.019"
5	0.020"	6	0.018"

SIDE AS ALIGNMENT

LHS 0.115" RHS 0.100"

Pearl Coast Helicopters

ENGINEER TIME SHEET

CLIENT HORIZONTAL FALLS VH- NBY JOB NO. 255 PG NO. 1

DATE	ENGINEER	TIME ON / OFF	TOTAL	WORK PERFORMED
12/5/19	N BOYES		½	JOB PACK.
12/5/19	N BOYES		6½	GROUND RUNS 100HRLY
12/5/19	ANGUS.		6½	100/300 HRLY.
13/5/19	N BOYES		6	PANEL GROUND RUNS/FLIGHT TEST
13/5/19	ANGUS		6	COLLOSION TREAT GROUND RUNS/PANEL/FLIGHT TEST

VH-NBY S/N 255

2.200 GROUND AND FLIGHT CHECK FOR 100-HOUR/ANNUAL INSPECTION

Complete following checklists in conjunction with a 100-hour or annual inspection. Note and correct any discrepancies.

2.205 Ground Check (Aircraft not running)

1. Throttle Control: Check for freedom of rotation with collective full down and full up.
2. Throttle Overtravel Spring: Check by twisting throttle past idle position to override stop. Release throttle and ensure it returns to normal idle position.
3. Mixture Control: Check for smoothness of operation with no binding. Check press-to-unlock button for proper function. Verify 0.03 to 0.10 inch spring-back at full rich position.
4. Carburetor Heat Control (O-540 only): Check for smoothness of operation with no binding. Verify 0.03 to 0.10 inch spring-back at full off position.
5. Cyclic Control: With trim motors (if installed) in neutral position, verify freedom thru full travel with friction off. Verify friction knob rotates 1/8-to-1 full turn before adding friction. For hydraulic controls: Verify approximately one-half inch total longitudinal and one inch total lateral freeplay before encountering resistance. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel.
6. Collective Control: Verify freedom through full travel with friction off and on. For non-hydraulic aircraft, verify friction knob moves 0.3-0.6 inch before adding friction. For hydraulic controls: Verify approximately one-half inch total freeplay before encountering resistance. With carb heat assist (if installed) locked and friction lever fully off, verify C334 friction (between rear seats) within freeplay range is 4-5 pounds average measured at grip. With friction lever fully on, verify 18-22 pounds measured at grip. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel.
7. Carb Heat Assist (if installed): With collective down and full carb heat, raise collective full up and verify carb heat off. Lower collective full down and verify carb heat full on. With collective friction off, push carb heat off and verify collective stays down.
8. Tail Rotor Pedals: Check for smooth operation with no binding.
9. Removable Controls: Verify security of attach fasteners.

2.205 Ground Check (cont'd)

10. Lighting and Instruments: (Master Switch on)
    a. CARBON MONOXIDE warning light flashes twice (if installed).
    b. Carb Air Temp approximately same as Outside Air Temp.
    c. ALT warning light on.
    d. OIL pressure warning light on.
    e. AUX FUEL PUMP warning light on (IO-540 only).
    f. Fuel quantity gages - indication of fuel level.
    g. Navigation and panel lights - check function.
    h. Strobe light - check function.
    i. Landing lights - check function (clutch switch must be engaged to check landing lights).
    j. Map light - check function.
    k. Ammeter - shows discharge.
    l. Oil temperature gage - slight needle deflection with engine cold.
    m. Cylinder head temp gage - slight needle deflection with engine cold.
    n. MR TEMP light - on when sender shorted or test switch depressed.
    o. MR CHIP light - on when sender shorted or test switch depressed.
    p. ENGINE FIRE light – on when sender shorted or test switch depressed.
    q. TR CHIP light - on when sender shorted or test switch depressed.
    r. LOW FUEL light - on (slight delay is normal) when low fuel sender in tank is depressed with clean, non-sparking rod or when test switch depressed.
    s. FUEL FILTER light – on when test switch depressed (IO-540 only).
11. Verify aircraft checklist laminated card is current revision (refer to Section 1.002).

2.210 Run Up

1. Perform POH Section 4 "Preflight" checklist.
2. Perform "Before Starting Engine" checklist.
3. IO-540 engine: Verify AUX FUEL PUMP light extinguishes during prime and illuminates after priming. Verify fuel drains from sniffle valve.

> NOTE
> Significant prime may be required before fuel drains from sniffle valve. Wait for valve to stop draining before starting engine. Engine will be hard starting/flooded while valve is draining.

4. Perform "Starting Engine and Run-Up" checklist. If less than 15 minutes has elapsed since Step 3, use minimum or no prime.
5. Check clutch engagement time – maximum 70 seconds.
6. Ammeter indicates charge, ALT light off.
7. Both magnetos ground (off momentarily) at 60% RPM.
8. Tachometer operates with alternator and battery switches off.
9. No unusual bearing noise when varying RPM through operating range (mechanic to listen near V-belt drive). Refer to Section 2.110 and 2.501 thru 2.503.
10. Set RPM at 75%, governor on. Increase to 85%, release throttle, and verify governor increases RPM to 101 to 102%. Increase RPM to 104%, release throttle, and verify governor decreases RPM to 101 to 102%.
11. Engine and rotor tach needles within 1% of each other at 102% RPM.
12. Verify alternator voltage as follows:
    13.4 to 13.9 vdc for A942-3 alternator control unit
    27.75 to 29.25 vdc for A942-4 alternator control unit
13. Heater operates properly.
14. Tachometer needles do not jump more than 2% when transmitting on 118.00, 125.00 , and 136.975 MHz with governor on.
15. Raise collective control 0.5 inch at grip and slowly decrease RPM. Verify low-rotor-RPM warning horn and light activate at 97% to 96% RPM and remain on as RPM is decreased to idle.

2.210 Run Up (cont'd)

16. Idle RPM with engine warm, clutch engaged, throttle closed-
    O-540 engine: 53% - 57%
    IO-540 engine: 58% - 62%
17. Idle mixture with engine warm, clutch engaged, throttle closed.
    O-540 engine: 2% to 4% RPM rise as mixture is pulled slowly to idle cut-off. Adjust idle mixture screw as required. If unable to obtain rise, set idle mixture screw 1½ turns out from fully in then adjust as required for smooth idle.
    IO-540 engine: Adjust idle mixture per Section 6.495, Step 23.
18. Check hydraulic system (if installed) operation. Using cyclic- mounted hydraulics switch, turn hydraulics OFF. Using small longitudinal cyclic inputs, there should be approximately one-half inch of freeplay before encountering stiffness and feedback. Turn hydraulics ON. Controls should be free with no feedback or uncommanded motion ("motoring"). Complete flight check with hydraulics on.
19. Air Conditioning: Verify system blows cold air on both low and high settings. Verify no EMI/RFI with other instruments and systems. After a flight with air conditioning on, verify water drains from drain tube in ship's belly (may be little or no water in very dry conditions).

[redacted] 91457 13/5/19

2.220 Flight Check

1. Hover:
   a. All gages green.
   b. Controllability in left and right pedal turns.
   c. Cyclic electric trim (or hydraulics) zeros cyclic stick forces.
   d. Vibration levels satisfactory.
2. Level flight: Typical cruise altitude (if possible, deviate as required for weather and regulations), maximum continuous power, governor on.
   a. Vibration levels satisfactory.
   b. Cyclic electric trim (or hydraulics) zeros cyclic stick forces.
   c. Collective trim spring (electric trim system only) zeros collective forces. For hydraulic controls: Verify no feedback and collective is balanced.
   d. Fixed collective friction adequate to prevent "bounce" but not excessive (electric trim system only).
   e. Tail rotor pedal position when yaw string is centered: 0.25 to 0.75 inch right for adjustable pedals, within 0.25 inch of neutral for non-adjustable pedals.
   f. Tail rotor elastic trim cord zeros pedal forces (cord applies left pedal force).
   g. For hydraulic controls: Turn hydraulics OFF and verify no excessive feedback forces.
3. Autorotate at 100 KIAS with station 99 or greater CG. Verify electric trim (or hydraulics) zeros cyclic stick forces.

2.230 Shutdown

1. Verify rotor brake functions and ROTOR BRAKE light illuminates.
2. Complete shutdown per POH checklist.

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2.300 AIRFRAME PREPARATION FOR 100HR/ANNUAL INSPECTION

Thoroughly clean airframe prior to inspection. Wipe down main and tail rotor blades, hubs, and airframe exterior with a mild soap and water solution.

CAUTION

Do not spray magnetos, main rotor hub, tail rotor gearbox vent, hydraulic reservoir vent, swashplate area, or bearing seals with high-pressure water or solvent as water or solvent may enter and cause corrosion and breakdown of lubricants.

2.400 100HR/ANNUAL AIRFRAME INSPECTION

NOTE

Numbers in parentheses indicate location as illustrated in Figures 2-4 and 2-4A.

CAUTION

If pop-out floats are installed, ensure safety on pilot's red inflation lever is in LOCKED position when working on helicopter.

WARNING

Pop-out float pressure cylinder contents are under extreme pressure. If pop-out floats are installed, install locking pin in pressure cylinder valve (see Figure 5-6) when working in forward left baggage compartment, during cylinder removal or installation, and when working on floats or inflation hoses. Remove locking pin when work is completed. Avoid excessive heat (>200 degrees F) as thermal relief valve will activate.

Perform 100 hour or Annual inspection per Section 2.410.

2.410 Inspection Procedures and Checklist

R44 Serial No.: 2544 Technician name: NEETS
Registration No.: VH-NBT Technician
Hourmeter Indication: 88.62 Certificate number: 594457
Aircraft Total Time: 88.62

1. Tail Rotor Pedal Bearing Blocks

NOTE

Do not remove pedal bearing block cover plates (1) unless function check of pedals indicates possible problem with pedal bearing blocks.

To remove cover plates (1) peel back carpeting and remove screws holding plates. Use an inspection light and mirror to inspect bearing blocks. Inspect for condition and looseness or play. Maximum allowable play is 0.080 inch axially and 0.030 inch radially. Inspect all weld areas in pedal controls.

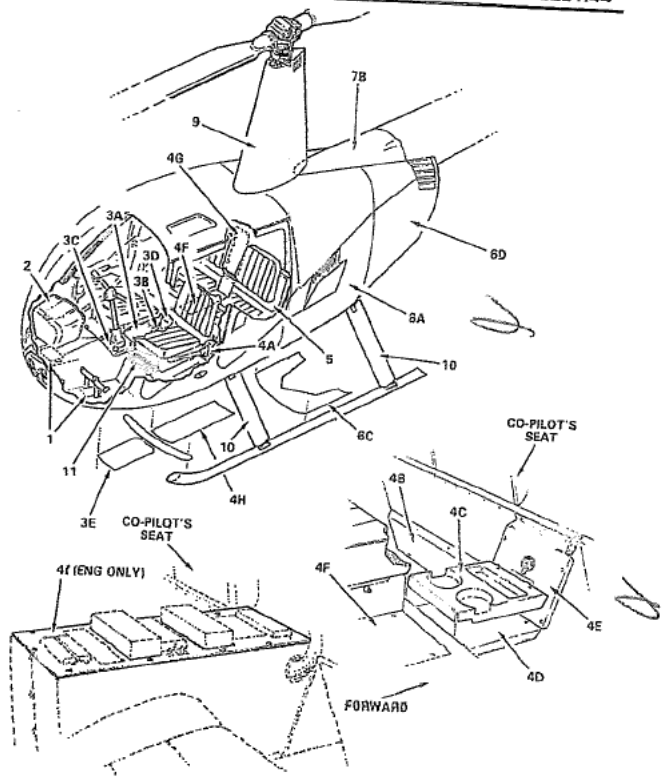

FIGURE 2-4 ACCESS AND INSPECTION PANELS

[redacted] 594457 B/S/FI

VH-N54 JAN 25S

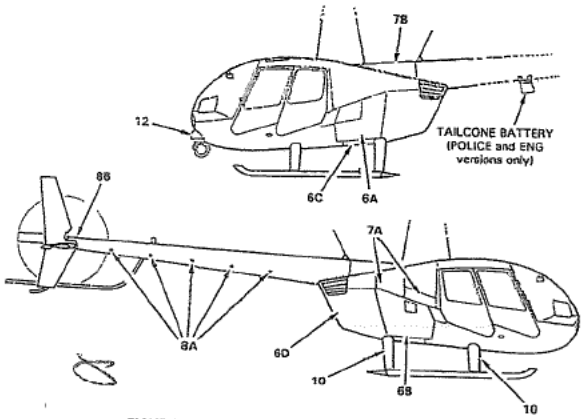

FIGURE 2-4A ACCESS AND INSPECTION PANELS

NUMBER	PART NUMBER	DESCRIPTION	NUMBER	PART NUMBER	DESCRIPTION
1	B189-4	Deflector (LH)	4I	D383-1	Face (ENG only)
	A412-2 and B189-2	Cover and Deflector (RH)	5	C003-10	Seat Back Assy (RH)
				C003-11	Seat Back Assy (LH)
2	B050	Console Assy	6A	C337-1	Cowling Assy (LH)
3A	C445-1	Cover Assy	6B	C378-1	Cowling Assy (RH)
3B	C445-3	Cover	6C	D041-1	Cowling Assy - Belly
3C	C444-1	Cover	6D	D040-1	Aft Cowling Assy
3D	C398-1	Cover Assy	7A	D042-4	Door Assy
3E	C794-1	Panel		D042-4	Door Assy
4A	C680-1	Cover Assy	7B	C706-1	Tailcone Cowling Assy
4B	C461-1	Cover	8A	A231-1	Plug Assy
4C	C464-1	Tray	8B	A558-2	Cover
4D	C463-1	Cover	9	C261-1	Mast Fairing Assy
4E	C054-1	Cover Assy	10	C082-2	Fairing Assy (FWD, RH)
4F	C474-2	Cover		C082-3	Fairing Assy (FWD, LH)
4G	C474-1	Cover		C082-4	Fairing Assy (AFT, RH)
				C082-5	Fairing Assy (AFT, RH)
4H	C794-2	Panel (without scoop)	11	C045	Circuit Breaker Panel
	C794-3	Panel Assy (with scoop)	12	D412-1	Fairing (Inframetrics
4H	C794-2	Panel (without scoop)	(Police	or	Camera)
	C794-3	Panel Assy (with scoop)	ships)	D347-1	Fairing (FSI Camera)

2.410 Inspection Procedures and Checklist (cont'd)

2. Upper Console (2)

Console (2), is opened by removing one screw on each side. With console open, inspect the following:

Pitot-Static System: Check pitot and static lines for cracking, chafing, pinching or kinking. Check all connections for security.

Flight and Engine Gages: Check all gauges for security. Inspect wiring and connections on all gages.

Radio Tray(s): Check condition and security.

Tail Rotor Controls: Check accessible portions of TR pedal assemblies for defects. Verify operating clearance.

3. Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D), and Forward Belly Panel (3E)

> NOTE
> If radio antennas are installed on removed panels, disconnect antenna lead and any ground wire. Pull respective radio circuit breaker and tag circuit breaker with "Antenna Removed".

Cyclic Box Assembly: Inspect cyclic box assembly for defects. Check cyclic stop sheet metal assembly for cracks and other defects (deterioration, distortion, loose rivets, corrosion).

Cyclic Stick Assembly: Inspect cyclic stick assembly for defects. Inspect welds for cracks.

> CAUTION
> (manual controls)
> Do not disturb clear silicone coating protecting strain gages, or attached wiring. Any damage to strain gages or wiring will disable trim system.

Cyclic Trim (manual controls): Turn master and cyclic trim switches on. Move cyclic laterally stop to stop and longitudinally stop to stop and check operation of trim motors. Check trim motors, springs and elastic cords for clearance from all wire bundles and fuselage structure during movement and at travel limits. N/A

Cyclic Lateral Trim Actuator (manual controls): Turn master and cyclic trim switches on. Push and hold cyclic stick against right stop until motor stops then turn trim off. Move cyclic stick to left stop to compress spring. Inspect exposed portion of shaft for wear and galling. Do not grease rod on Rev H and subsequent C056-1 spring assemblies, bearing is self-lubricating. Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic pivot. N/A

Cyclic Longitudinal Trim Actuator (manual controls): Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic stick. N/A

2.410 Inspection Procedures and Checklist (continued)

3. Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D) and Forward Belly Panel (3E) (continued)

Cyclic Friction: Check for excessive play or looseness in links and rod ends connected to cyclic stick. Verify no excessive flaring at either end of C130-2 spacer.

Cyclic Push-Pull Tube and Torque Tube: Inspect C319 torque tube paying special attention to area around blocks and end of torque tube for cracks. Inspect C121-1 push-pull tube rod end palnut and jam nut for tightness. Check witness holes on push-pull tubes. Check rod ends and bearings for excessive play and looseness. Check accessible portions of cyclic push-pull tube and torque tube for defects, including scratches. Pay particular attention to top of torque tube immediately below C348-1 anchor assembly. Inspect all nuts and bolts in cyclic controls for rotation and looseness.

Tail Rotor Push-Pull Tube: Inspect accessible portions of C121-9 tail rotor push-pull tube. Look for defects such as cracks, bends, scratches, or chafing. Check rod ends for excessive play and looseness.

Collective Friction and Stop: Inspect collective stop condition; no nicks, cuts or scratches are allowed. Check collective friction lever for security and operation. Move collective up and down and verify no bending or binding of stop. Verify collective boot's lace cannot entangle stop.

Throttle Overtravel Spring: Inspect operation of overtravel spring while operating throttle. It should move freely without any binding or jerkiness. Check play in upper and lower rod ends. Check rod ends for binding.

Wiring Harness: Inspect for chafing and clearance from controls.

Pitot and Static Lines: Inspect pitot and static lines for security and any evidence of cracking, chafing, pinching or kinking from sharp bends. Open drains and check for moisture; close drains.

Elastic Trim Cord(s): With cyclic forward-right, feel forward elastic trim cord(s) for voids which may indicate broken strands.

Heater Hose: Check heater hose for collapsed areas and chafing.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

4. Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only)

> NOTE
> If radio antenna is installed on removed panel, disconnect antenna lead and corresponding ground wire. Pull respective radio circuit breaker and tag circuit breaker with "antenna removed".

2.410 Inspection Procedures and Checklist (continued)

4. Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only) (continued)

Collective Stick: Inspect condition of collective stick. Inspect all welds for cracks. Inspect C328-1 connecting rod assembly giving special attention to points of attachment. Inspect governor motor and governor motor arm for looseness or binding. Inspect collective-activated micro switch for cracks or loose wires.

Collective Stick Torque Tube: Verify no corrosion pitting. Apply a corrosion-preventative compound such as LPS 2, ACF-50, or Corrosion-X to any unpainted, phosphate-coated area while avoiding contaminating governor friction clutch (a foam-type applicator works well). Ensure interior of open-end "box" structures at inboard attach point and at A205 fork connection are also treated.

Aft End of Cyclic Torque Tube and Yoke Assembly: Inspect torque tube and yoke, paying special attention to area around blocks and end of torque tube for cracks. Check play in bellcrank bearings per Section 2.120. Inspect swaged bearing for movement in yoke.

Aft End of Cyclic Push-Pull Tube (C121-1) and Lower Ends of Vertical Push-Pull Tubes (C121-7): Inspect push-pull tubes for cracks. Check rod end jam nuts and palnuts for tightness and rod ends for play. Check rod end bearings for looseness. Inspect fork assembly areas. Check bearings for looseness. Check between bearings and swage for evidence of fretting.

Aft End of (C121-19) Tail Rotor Push-Pull Tube and Lower Bearing: Check witness hole. Check lower bellcrank bearing for play. Inspect all welds on support assembly for lower bellcrank and inspect surrounding sheet metal area for cracks.

Collective Push-Pull Tube (C121-19): Check for binding or nicks. Check witness holes. Check jam nuts and palnut for tightness and rod end for play.

Collective Friction Assembly: Check jam nuts and palnuts for tightness and rod ends for play. Inspect all welds on bellcrank support assembly and inspect surrounding sheet metal for cracks and corrosion.

Collective Spring Assembly (Manual Controls Only): Move collective up and down and verify no binding or cracking. Spring coils must not touch when collective is full down. Verify jam nut and palnut tightness. Verify rod ends play within limits. Verify guide rods are greased. If required by Section 1.101, service assembly per Section 8.221. N/A

Throttle Control Linkage: Remove throttle control arm cover if cover is not transparent (under aft left seat [O-540], or inside tunnel [IO-540], at firewall). Inspect condition. Verify throttle control clearance to installed equipment and adjacent structure. Verify proper installation and security. Install cover.

Fuel Valve and Fuel Line: Inspect fuel line for damage and valve fittings for leakage (leakage is indicated by a blue or green residue, depending on fuel used, or odor of fuel). Verify no chafing of fuel lines.

Fuel Valve-to-Knob Torque Tube: Inspect condition. Verify attaching security.

[redacted] 594037 13/5/15.

5. Remove Aft Seat Back Assemblies (5)

Wiring: Check wiring for security and proper installation.

Pitot and Static Lines: Check for security, chafing, and kinks.

Air Conditioning Refrigerant Lines (if installed): Verify security & no damage.

Evaporator Drain Tubes and Valve (if installed): Verify tubes are unobstructed. Place a container under sediment-tube protruding from bottom of tee-fitting into right-aft baggage compartment. Remove plug from sediment tube and allow any accumulated moisture and debris to drain. Reinstall plug. Simultaneously squeeze drain tube and sediment tube near tee-fitting and verify check-valve ball moves up momentarily.

Strobe Power Supply & Alternator Control Unit: Inspect strobe power supply and alternator control unit wiring. Inspect mounting panels for cracks.

Blind Encoder & Governor Controller: Inspect blind encoder and governor controller wiring. Inspect mounting panels for cracks.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings

Vertical Firewall: Inspect vertical firewall condition, especially around structural attachment points, verify no cracks, buckling or wrinkles.

Fuse(s) and Fuse Holder(s) (if installed on vertical firewall): Verify security and no corrosion. Verify correct fuses: -66 wire requires AGC-3 fuse, -1601/-1602 wires require AGC-5 fuse. If installed, -1226 wire requires AGC-3 fuse.

Wiring: Verify security, proper installation, and no deterioration.

Electric Fuel Pump (IO-540 only): Verify security, proper installation, unobstructed drain tube, and no leakage.

Fuel Line & Hose(s): Inspect condition. Verify security, proper installation, no leakage, & (IO-540 only) good condition of splrap insulation on fuel line between firewall & gascolator. If deteriorated, replace MS3367-5-9 ty-raps securing fuel hoses to clamps (reference R44 SB-67).

Lower Steel Tube Frames: Thoroughly inspect lower steel tube structure for corrosion and inspect all welds for cracks. Ensure frames are not chafed by wires, hoses, clamps, etc.

Engine Cooling Panels: Inspect cooling panels for cracks and missing fasteners.

Oil Cooler(s): Inspect oil cooler(s) and fittings for damage, leaks, cleanliness, and security. Check oil cooler mounting area(s) for cracks.

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings (continued)

Oil Lines: Inspect entire length of all oil lines and verify no cracks, abrasion, or broken clamps. Verify clearance: wires, ty-raps, and structure must not contact lines.

Gascolator: With fuel valve off, remove and clean gascolator bowl and filter screen. Verify no deterioration of gasket. If gascolator bowl is secured by threaded collar and ring, lightly lube threads and ring with A257-6 grease. Reassemble and turn fuel valve on. Safety wire after ensuring no leaks occur. Verify drain valve is secure and torque-striped.

Mixture Control: Verify mixture control moves mixture control arm stop to stop. Inspect condition and verify security of mixture control cable clamps on bracket; push and pull cable housing to ensure it does not slip in clamps. Inspect condition and verify security of mixture control cable inner wire attachment to mixture control arm. Ensure freedom of rotation between mixture control arm and inner wire retention fitting (bolt) when arm moves. Verify mixture control safety spring is properly installed (so spring force holds mixture control arm at full-rich position if inner wire breaks).

Throttle Correlation Rigging: Check per § 10.150 and adjust as required.

Full-Throttle Switch Rigging: Check per § 14.1020 and adjust as required.

Air Box & Alternate Air Door: Ensure carburetor heat slider valve (if applicable) moves fully from stop to stop. Replace air filter (lubricating IO-540 air filter rubber with A257-8 rubber lubricant will facilitate sealing). Check air box for condition and security. Verify spring-loaded alternate air door opens without binding and closes completely.

Engine Air Inlet Hose: Verify correct installation & security. Verify no rips, holes, or collapsed areas. Ensure hose is not chafing frame.

Carburetor Heat Scoop and Hose (O-540 engines only): Inspect for condition and security.

Heater Hose: Inspect for condition and security.

Battery and Battery Box (alternate locations under upper console or under left, front seat): Check cable terminals for cracks. Check each cell electrolyte for quantity and specific gravity if equipped with non-sealed battery. As required, perform capacity test per manufacturer's instructions or replace battery. Verify security and no obstructions in drain tube.

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9)

Cowling Door: Inspect hinges and latches for condition and security.

Tailcone cowling: Verify no cracks, air inlet distructions, or loose rivets.

Electrical and Antenna Wires: Inspect condition. Verify security and no chafing, kinks or tight bends.

MRGB Input Yoke: Inspect condition. Verify security and operating clearance. Verify security of magnets.

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Forward Flex Plate: Inspect condition, particularly edges. Verify security. Verify bonded washers are securely bonded to both sides of each flex plate arm. Verify operating clearance.

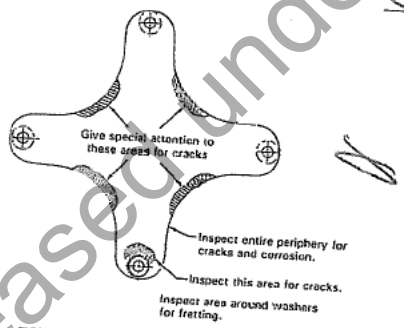

FIGURE 2-5 FLEX PLATE INSPECTION

Clutch Shaft Forward Yoke: Inspect condition. Verify no cracks, corrosion, or fretting. Verify security and operating clearance.

Rotor Brake: Inspect condition, including activating cable & pulleys and microswitch. Verify integrity of brake pads and 0.030 inch minimum pad thickness. Verify brake pad clearance to input yoke when brake is off. Verify security and operating clearance.

Jackshaft: Inspect entire welded assembly for cracks and corrosion. Inspect jackshaft supporting strut and tube weldments for security, cracks and corrosion.

Main Rotor Push-Pull Tubes: Inspect condition of viewable portions. Verify no cracks at ends. Inspect rod ends per Section 2.120. Verify no tears in sleeves (manual controls only). Verify security and operating clearances.

Main Rotor Push-Pull Tube Rollers & Bushings: (manual controls only): Inspect condition. Verify cleanliness, no wear into metal, and free movement of rollers.

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Tail Rotor Push-Pull Tube and Upper Bellcrank: Inspect C121-15 push-pull tube, especially at ends, for cracks. Check jam nut for tightness and rod end for looseness. Inspect bellcrank and mounting for cracks or other defects.

Main Rotor Gearbox Cooling Hoses: Inspect both ends for security. Inspect for rips, holes, and chafing.

Main Rotor Gearbox: Inspect main rotor gearbox, especially around gearbox mounts, cap mounting lugs, and mast tube for cracks. Verify no contamination and no deterioration of rubber mounts. Verify security of Hall Effect senders. Check Telatemp for overtemp indications.

Main Rotor Gearbox Oil: With ship on level ground, verify correct oil level and cleanliness using sight gage. If required by Section 1.101, drain and flush gearbox per Section 1.120.

Main Rotor Gearbox Chip Detector: If required by Section 1.101, clean chip detector per Section 1.115.

Upper Steel Tube Frame: Use an inspection light and mirror to inspect each weld, verify no cracks or corrosion.

> **CAUTION**
> Upper steel tube frame is fatigue-loaded and therefore susceptible to fatigue cracks. Inspect thoroughly.

Horizontal Firewall: Inspect upper and lower surfaces of horizontal firewall, especially where bolted to steel structure, for cracks, buckling, or wrinkles. Inspect firewall under fuel tank for leakage (fuel residue).

Fuel Tanks: Inspect condition of visible portion. Verify no leaks. Verify security.

Auxiliary Fuel Tank Fuel Line: Inspect condition. Verify clearance to structure. Verify no leakage. Verify security.

Fuel Return Lines & Pressure Relief Valve (IO-540 only): Inspect condition. Verify no leakage. Verify security.

Fuel Gage Senders & Wiring: Inspect condition. Verify no leaks.

Fuel Tank Vents: Check vent tube connections for security.

Fuel Tank Sump Drains: Verify both drain valves open easily, drain fuel freely, spring closed, and seal completely. Verify D663-1 shut-off clamp on aux tank drain tube seals completely, and inspect clamp and tube for damage and deterioration.

Low Fuel Warning: Turn MASTER switch on. With a clean wooden dowel, gently depress low-fuel sender float in main fuel tank and verify LOW FUEL warning light illuminates. Turn MASTER switch off.

2.410 Inspection Criteria (cont'd)

8. Remove Tailcone Plugs (8A) & Aft Plastic Cover (8B)

NOTE

Aft plastic cover (8B) is secured with two MS27039C0806 screws on Rev L and subsequent tailcones. On Rev K and prior tailcones ensure screws securing plastic cover are short enough to prevent interference in aft flex plate area.

Tail Rotor Drive Shaft: Inspect condition of that section of shaft that can be seen through each hole, looking for obvious defects such as cracks, bends, bows in shaft or corrosion or contact with inside of tailcone. Check runout per Section 7.340. Inspect each end of drive shaft for cracks and corrosion.

CAUTION

Bends, bowing, dents, cracks and corrosion are cause for immediate replacement of tail rotor drive shaft.

Damper: Inspect tail rotor drive shaft damper (C041-1). Inspect bearing and housing for cracks, corrosion, wear (see Figure 2-8), and bearing seal deterioration. Inspect arms and bearings for cleanliness, cracks, bends and corrosion. Inspect bearing's inner race-to-drive shaft torque stripe.

Tailcone Exterior: Inspect tailcone exterior for nicks, scratches, corrosion, fretting between skin joints, loose rivets and dents. Inspect tailcone for cracks in vicinity of antenna mounts and battery (if installed on tailcone).

Strobe Light: Inspect lens and strobe light mount for cracks, loose rivets, and security. If split red/clear lens is installed, verify clear half of lens faces aft.

Antennas: Inspect all antennas for condition and security.

Tailcone Battery (if installed): Inspect tailcone-mounted battery condition and security. Verify no debris between battery box cover and tailcone.

Tailcone Interior: Inspect tailcone interior, especially around rivets, for cracks, fretting, and corrosion.

Tailcone Attachment: Inspect condition and security of four bolts attaching tailcone to upper frame.

Empennage: Inspect entire empennage and attachment points for damage, cracks, and loose fasteners. Check tail skid for evidence of tail strike. If evidence of tail strike is found, refer to special inspection section.

Float Stabilizer (if installed): Inspect condition and security.

Aft Flex Plate (See Figure 2-5): Inspect flex plate for cracks, fretting, and distortion. If fretting is detected, contact RHC Technical Support. Inspect security of flex plate fasteners.

Tail Rotor Drive Shaft Aft Yoke: Using inspection hole, check yoke for cracks, fretting, and corrosion.

Tail Rotor Guard: Inspect for security. Check forward mount for cracks around welded area. Inspect area around aft mount for cracking and fretting.

2.410 Inspection Criteria (cont'd)

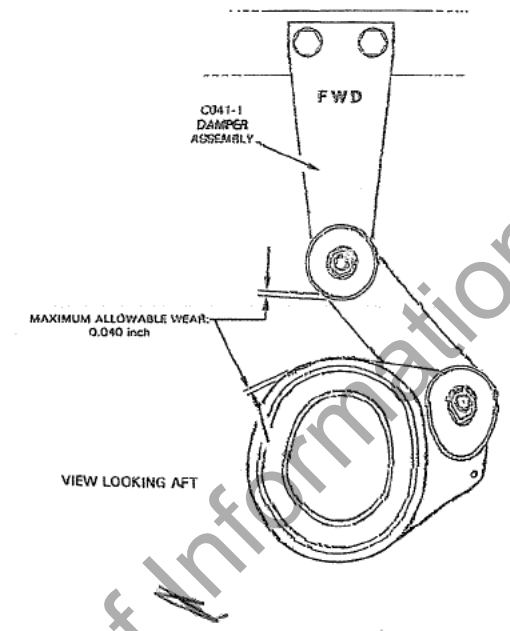

FIGURE 2-8 TAIL ROTOR DRIVE SHAFT DAMPER BEARING INSPECTION

2.410 Inspection Procedures and Checklist (continued)

9. Tail Rotor Gearbox and Tail Rotor

Input Shaft Yoke: Inspect flange and weld for cracks and corrosion.

Input Seal: Inspect for leakage.

Gearbox: Inspect general condition. Look for leakage. Check oil quantity and cleanliness through sight gage and adjust or flush as required. Check gearbox-to-tailcone mounting security. Inspect output shaft for nicks, scratches and corrosion. Check safety wire on applicable gearbox bolts. Check Telatemp.

NOTE

At 500 hours time-in-service or annually, whichever occurs first, remove chip detector and clean varnish from detector's magnetic probe and adjacent metal body (a toothbrush dampened with solvent works well). Also, drain and flush gearboxes at intervals not to exceed 500 hours time-in-service (refer to Section 1.101).

Pitch Control Assembly and C121-17 Push-Pull Tube: Check pitch control assembly for free movement throughout its entire range and for looseness on output shaft (0.25 inch maximum rotational play measured at pitch link attach bolt). Inspect bellcrank for cracks and ensure free movement. Pay special attention to spherical bearing atop stud protruding from underside of pitch control; it is permissible to have a single radial crack in the spherical bearing ball. Inspect aft end of C121-17 push-pull tube for cracks and check rod end for excessive looseness (refer to R44 SB-43A).

Pitch Links: Check rod ends for excessive looseness. If equipped with one-piece pitch links, disconnect and rotate inboard end outboard as required to obtain maximum service life.

Tail Rotor Blades: Inspect blade surfaces for excessive erosion, nicks, scratches, cracks, and corrosion. Check tail rotor blade root fitting bearings for fretting and looseness. Loose bearing outer race in root fitting is unairworthy, requiring replacement of blade. C029-1 blades only: remove tip covers, inspect for debris and corrosion, & reinstall covers. C029-1 or C029-2 blades only: Inspect tail rotor blades for fatigue cracks per R44 SB-83. Refinish blades per Section 9.460 if excessive erosion is found.

Hub Plates and Hub: Inspect for cracks and corrosion, paying special attention to areas around blade and hub mounting bolts. Ensure teeter hinge bearing outer races move with hub and bearing inner balls and retaining nut and bolt remain stationary when hub is teetered. Hub should move freely on bearings without stiffness or jerkiness. Check teeter hinge bearings for excessive play. For elastomeric bearings inspect per Section 2.125.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

2.410 Inspection Procedures and Checklist (continued)

10. Open Mast Fairing (9)

Mast Fairing: Inspect condition, especially where stiffeners intersect ribs.

Lower Swashplate Scissors: Inspect condition of scissors. Check rod end and bearing play. Check jam nut.

Vertical Push-Pull Tubes: Inspect for general condition and corrosion. For manual controls, inspect push-pull tube sleeves at rollers and guide.

Rod Ends: Check push-pull tube rod ends per Section 2.120.

Plastic Rollers and Guide (manual controls): Inspect plastic rollers and guide for cleanliness, security, and deterioration.

Pitot Tube: Inspect pitot line and tube, giving special attention to connecting area, for bending, cracking and kinking. Verify pitot tube elbow drain hole is unobstructed.

Fuel Tank Vents: Inspect condition and security of fuel tank vent tube clamps. Ensure pitot line is not chafing fuel vent tubes. Check tube connections. Verify tubes are unobstructed and are not kinked, pinched, or chafing.

Mast Fairing Ribs: Inspect for cracks especially around mast tube attachments.

11. Rotor Hub Area

Swashplate Lower Scissors: Inspect condition. Inspect rod ends per Section 2.120. Verify security.

Swashplate Upper Scissors: Inspect condition. Inspect rod ends and spherical bearings per Section 2.120. Measure scissors play per Figure 2-9. Observe scissor linkage while having someone raise and lower collective. Verify bolt, journals (or spherical bearing balls and spacers), and arm rotate together at each scissor linkage pivot. Verify operating clearance.

Swashplate Slider Tube: Inspect condition. Verify no cracks at rivet holes or corrosion on base. Verify no damage to, or wear through, anodized tube surface.

Remove Swashplate Boot Lower Ty-rap: Lift boot from swashplate. Using an inspection mirror, inspect area between main rotor drive shaft and inside of slider tube. Verify no corrosion and no debris. Verify no boot damage.

Swashplate: Inspect condition. Verify 0.020 inch maximum radial play between swashplate ball and slider tube. Rotate rotor by hand and verify operating clearance and no rough or dry bearings.

Swashplate Tilting Friction: Observe swashplate ball from below and have someone move collective stick slowly up & down. Verify swashplate ball immediately moves with swashplate when swashplate reverses direction. Movement of swashplate without attendant ball movement indicates axial play between ball and swashplate; adjust swashplate tilting friction per Section 8.413.

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2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Fuel Caps: Inspect condition, to include gasket. Verify security when closed. Verify alignment marks on cap and tank align when cap is fully closed.

Nuts and Bolts: Inspect all nuts and bolts in this area for movement and looseness.

Cabin Bulkhead & Forward Hydraulic Servo Mounts: Inspect bulkhead and servo mounts (if installed) for corrosion, loose rivets, deformation and cracks.

Clutch Assembly: Inspect ends of drive shaft and seals on sheave for oil leakage. Inspect shaft for corrosion, especially at shaft-to-seal junctures. Remove any light surface corrosion at shaft-to-seal junctures, and apply a suitable corrosion-inhibitor.

Upper Sheave: Inspect sheave grooves. Replace any sheave showing corrosion pitting or flaking of metalized or anodized coatings, wear through anodized coatings, roughness, or sharp ridges.

Drive V-Belts (see Section 2.507): Inspect V-belts. Verify no breakage, deterioration of rubber, cuts, fraying, oil, grease, or foreign objects.

Actuator Fuses & Holders: Inspect condition. Verify no corrosion. Verify correct fuses (14-volt systems require AGC-3 fuses while 28-volt systems require AGC-1½ fuses). Verify twist-to-lock function and security.

Actuator Upper Bearing and Strut: Inspect seals on both sides of bearing for damage. Inspect strut, including both rod ends, and check witness holes. Check for fretting between bearing inner races and clutch shaft. Bearing inner races should be torque striped to clutch shaft. If stripes are broken or misaligned, shaft is unairworthy. Check bearing Telatemp. Perform bearing inspection per Section 2.503 if Telatemp indication has increased without corresponding increase in ambient temperature.

Actuator Lower Bearing: Inspect as much of bearing as can be seen. Inspect fiberglass scroll area at bearing attachment brackets for signs of cracking. Check bearing seals for evidence of deterioration. Inspect lower bearing brackets for looseness or wear. Inspect bearing per Section 2.502 if discrepancies are found

Intermediate Flex Plate and Forward End of Tail Rotor Drive Shaft (see Figure 2-5): Inspect flex plate for cracks and fretting. Inspect yoke-to-drive shaft weld for cracks (steel shafts).

Tailcone Attachment: Thoroughly inspect all welds in this area for cracks, corrosion, and security of attaching fasteners. Inspect tailcone mounting area for cracks.

2.410 Inspection Procedures and Checklist (cont'd)

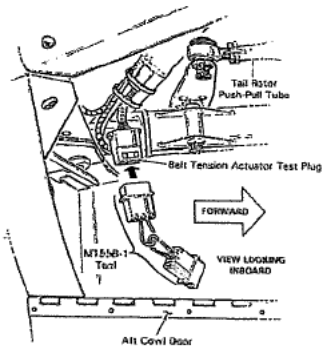

FIGURE 2-6 MT558-1 TOOL INSTALLATION

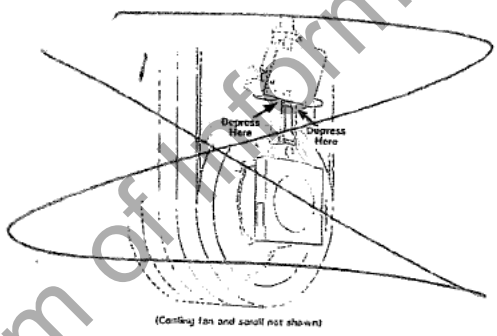

FIGURE 2-6A ACTUATOR SWITCH TEST

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Actuator (C051): Verify clearance to structure and drive train when fully disengaged. Turn master switch on and engage clutch switch. While actuator is engaging, depress extension limit switch lever (see Figure 7-15) and verify gearmotor stops; release lever and verify gearmotor resumes running. Verify integrity of activating cable for extension limit switch. Use an inspection mirror to observe column springs at end of belt-tensioning cycle; springs should snap outward simultaneously. Verify maximum engaged extension limit per Figure 7-15 is not exceeded. Verify clearance to structure and drive train when fully engaged. Verify down-limit stop screw jam nut is tight.

Check actuator for failed-closed spring switch using either of the following two methods:

Method 1 - (actuator electrical harness must be equipped with "Test" plug per Figure 2-6)

a. With MASTER switch on and actuator fully engaged, connect one end of MT558-1 tool to actuator test plug and verify gearmotor remains off.

CAUTION

If gearmotor activates when installing MT558-1 tool then a spring switch has failed in closed position; immediately remove MT558-1 to prevent actuator damage.

b. Disconnect MT558-1 tool, connect opposite end to actuator test plug, and verify gearmotor remains off.

c. Disengage clutch and turn MASTER switch off.

d. MT558-1 pins 1-2 jumper tests wire 98 spring switch; pins 2-3 jumper tests wire 91 spring switch (see Figure 14-1D). Replace any malfunctioning switch per Section 7.551 before further flight.

Method 2 - (actuator electrical harness without "Test" plug)

a. Refer to Figure 2-6A. With MASTER switch on and actuator fully engaged, depress column springs on one side of actuator until springs snap inward (use large screwdriver or similar tool with several layers to tape over end to protect actuator). Hold springs inward for at least one second. Actuator motor should not run. If motor starts, allow motor to run approximately two seconds, then release pressure on column springs. Depress and hold column springs again. If motor starts again, opposite spring switch does not function properly.

b. Disengage and re-engage actuator. Repeat Step a. on opposite-side column springs.

c. Replace any non-functioning switch per Section 7.551 before further flight.

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2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Lower Drive Sheave: Inspect lower sheave. Replace any sheave showing corrosion pitting or flaking of metalized coating, wear grooves, roughness, or sharp ridges.

Sheave Alignment: Verify sheave alignment per Section 7.230. Adjust as required.

Hydraulic Reservoir: Inspect condition. Verify security and no significant leakage. If required by Section 1.101, replace filter per Section 1.170. Drain and flush hydraulic system per Section 1.180 if oil has turned dark or emits bad odor. Add fluid as required.

CAUTION

Cleanliness of hydraulic fluid is vital to proper system operation. Use only clean fluid from sealed containers and avoid contamination from dirty funnels, tubing, etc.

Hydraulic Reservoir Cooling Hose: Inspect condition. Verify hose is secure and is directed at center of reservoir cooling fins.

Hydraulic Pump: Inspect condition. Pump temperature indication should not exceed gearbox temperature indication. Verify security and no significant leakage.

Forward Hydraulic Servos: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Inspect condition and verify security of scissors at upper clevis of servos.

CAUTION

Use LPS PreSolve to clean hydraulic parts. Do not use alcohol.

Aft Hydraulic Servo: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage.. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel.

Aft Hydraulic Servo: Inspect rod ends per Section 2.120. Inspect attachment to sheet metal, verify no cracks. Verify security.

Hydraulic Lines & Fittings: Inspect condition. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Verify security and no leakage. Verify minimum 0.25 inch clearance between pump hoses and aux fuel tank.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

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2.410 Inspection Procedures and Checklist (continued)

11. Rotor Hub Area (continued)

Install Swashplate Boot Lower Ty-rap: Verify correct boot position and security and no boot damage.

Hub: Inspect condition. Verify no nicks, scratches, gouges, or corrosion. If main rotor imbalance is suspected, check teeter and coning hinge friction per Section 9.124. Verify no brown or black residue (indicates bearing wear).

Hinge Bolts: Inspect condition. Verify cotter pins are in place and secure. Verify bolt heads and nuts are torque striped to thrust washers.

Pitch Links and Rod Ends: Inspect condition. Inspect rod ends per Section 2.120, including centering. Verify security, including jamnut tightness and proper safety wiring.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

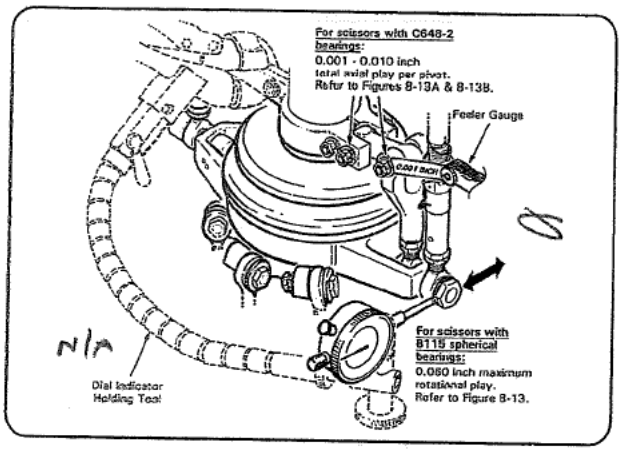

FIGURE 2-9 MEASURING UPPER SWASHPLATE ROTATIONAL PLAY
(Identify scissors bearing type and measure as shown)

2.410 Inspection Procedures and Checklist (continued)

12. Main Rotor Blades

Boots: Inspect condition. Verify no boot damage or oil leakage. Verify proper boot position and security. Verify sufficient clearance from hub assembly through full control travel.

Blade Spindles & Root Fittings: Inspect area for damage per § 9.133. Verify proper installation and security of visible fasteners. Renew deteriorated torque stripes per Figure 2-1.

C016-7 Main Rotor Blade Inspection: Remove tip covers. Remove corrosion and loose paint from tip covers, blade tips, and skin-to-spar bond lines. Epoxy prime, or prime and paint, any exposed bare metal on tip covers, blade tips, and skin-to-spar bond lines. Using an AN970-4 washer or 1965-or-later U.S. quarter-dollar coin, tap-test critical bond areas and verify no dull or hollow sounds. Visually inspect critical bond areas and verify no separation. Install tip covers, ensuring cover edges are flush with blade profile.

C016-2 or C016-5 Main Rotor Blade Bond Inspection: Perform R44 SB-72A or subsequent.

Main Rotor Blade Inspection: Inspect skins and doublers for scratches and corrosion per § 9.131. Inspect blades for dents and local deformations per § 9.132 and for voids per § 9.134. As required, wax blades with soft cleaning cloths using carnauba-type wax (such as SC Johnson® Paste Wax). Ensure tip cover and blade tip drain holes are unobstructed.

WARNING

Structural damage may occur if compressed air is applied to blade tip drain holes.

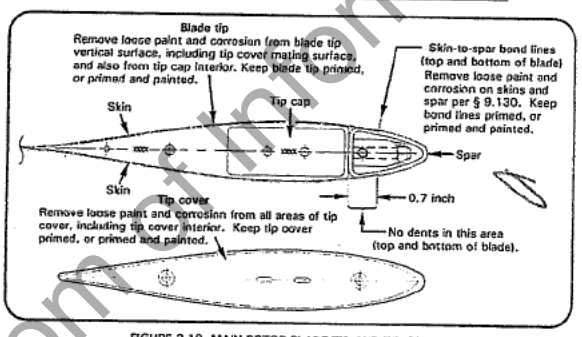

FIGURE 2-10 MAIN ROTOR BLADE TIP AND TIP COVER

2.410 Inspection Criteria (cont'd)

12. Main Rotor Blades (Refer to Section 9.130 for damage and repair limits) (cont'd)

Install tip covers: Verify security.

Fasteners & Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

13. Scroll Area

Fanwheel Assembly: Clean and inspect fanwheel assembly for cracks and corrosion. Check leading edge of vanes for damage. Verify spring pin and fanwheel alignment marks are aligned (see Figure 2-11); remove fanwheel and inspect mating surfaces for damage if misalignment is evident.

Fiberglass Scroll: Inspect fiberglass scroll for cracks and contact marks from fanwheel. Inspect flexible seal around scroll inlet for any rips or damage. Inspect vane assembly in right upper scroll for damage. Verify drain hole is unobstructed.

Scroll Metal Inlet Lips &Gap: Verify 0.030 / 0.090 inch gap between lips and fanwheel inlet (elongate tip attach holes as required to adjust gap).

14. Engine

Refer to Section 1.101. Refer to Lycoming Operator's Manual (P/N 60297-10 sections 4 and 5), Lycoming SI 1080B, and applicable engine component manufacturer's maintenance publications for 100-hour or annual inspection and service procedure.

Engine Cooling Panels: Inspect condition. Pay particular attention to panel(s) mounting oil cooler(s) and panel attached to alternator cooling hose. Verify no cracks or missing or loose fasteners. Verify security.

Alternator & Pulley: Inspect condition. Verify steel pulley (use magnet); aluminum pulley is not approved. Verify security. Verify electrical wiring security.

Alternator Belt: Inspect condition. Replace belt if there are any cracks, missing teeth, or delamination. Check tension per Lycoming Service Instruction 1129 (latest revision). Verify proper belt alignment.

Emergency Spare Alternator Belt: Remove if installed.

Alternator Cooling Hose: Inspect condition. Verify no obstructions or holes. Verify security.

Air Conditioning Refrigerant Lines (if installed): Verify security, no damage, and clearance to adjacent structure. Verify dust caps installed on servicing fittings at vertical firewall.

Air Conditioning Compressor (if installed): Verify security.

Air Conditioning Compressor Drive Belt (if installed): Inspect condition. Verify 4.5/5.5 pounds force applied at mid-span of belt causes 0.11/0.17 inch belt deflection; adjust as required.

Muffler Elbow & Tailpipe Shields: Verify no cracks in shields and shield attaching brackets. Verify clamp security.

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2.410 Inspection Criteria (cont'd)

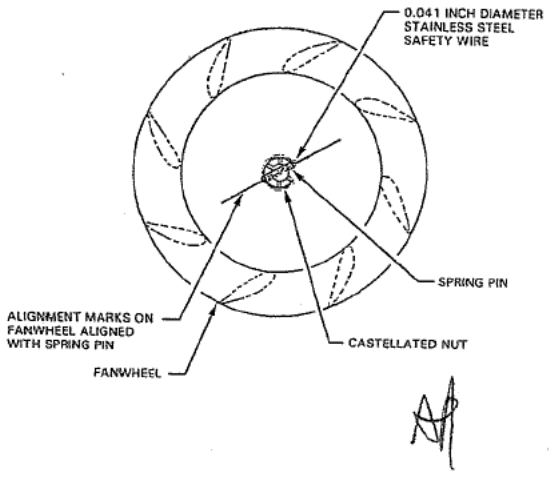

FIGURE 2-11 FANWHEEL ALIGNMENT MARKS

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2.410 Inspection Procedures and Checklist (cont'd)

15. Exhaust System

Remove muffler heater shroud screws, and open shroud. Inspect muffler outer wall for cracks, deformation, and ruptures. Pay particular attention to tailpipe and riser attachment areas, welds, clamps, supports, rear flanges and gaskets. Pressurize muffler with low pressure air and inspect for leakage. Close and secure heater shroud. N/A

16. Landing Gear

Skids and Shoes: Inspect left and right landing gear skids and skid shoes; minimum allowable shoe thickness is 0.05 inch. Verify drain holes are open (not applicable to float landing gear). ✓

Struts and Elbows (open fairings if installed): Inspect for cracks and corrosion, especially at elbow joints. Inspect weld area at bottom of strut for cracks. ✓

Landing Gear Fairings (if installed): Inspect for cracks and loose rivets. Verify security. ✓

Crosstubes: Inspect, especially at elbow joints, for cracks and corrosion. With helicopter on level ground, measure distance from ground to tail skid. If dimension is less than 30 inches, one or both cross tubes must be replaced (see Section 5). ✓

Landing Gear Attach Points: Check forward attach points for loose rivets, cracks, buckling, and fretting. Check bearing mounts for loose swages and worn bearings. ✓

Utility Floats (if installed): Inspect for damage. Refer to Pilot's Operating Handbook for proper inflation pressure. N/A

Pop-out Floats (if installed) Pressure Cylinder & Valve: Inspect condition. Verify security. Verify pressure gage indicates correct pressure for ambient temperature; refer to placard on cylinder for limits. N/A

Pop-out Floats (if installed) Inflation Manifold: Inspect condition. Verify no chafing or pinching of hoses, especially where hoses pass thru structure. N/A

Pop-out Floats (if installed): Inspect condition of stowed floats. Verify no holes, cuts, tears, abrasion thru, or unraveling of, float covers. If cover damage is found, inflate and inspect floats. Verify all float cover snaps and hook-and-loop fasteners are properly secured. Verify float-to-skid attachment security. N/A

> NOTE
>
> Annually apply A257-7 dry-film lubricant (see Section 1.470) to float cover snap mating surfaces. Annually perform Section 5.630 leak check. Every three years, perform Section 5.640 emergency inflation test.

2.410 Inspection Procedures and Checklist (cont'd)

17. Cabin

Verify no loose equipment that might foul controls. ✓

Static Ports: Inspect static ports for obstructions. If fixed utility floats are installed, verify air dam installed aft of both static ports. N/A

Rear Seat Bottom Suspension Straps: Inspect condition and security. N/A

Seat Belts and Shoulder Harnesses: Inspect for fraying and broken stitching. Check inertia reels for proper operation by pulling harness quickly to verify locking function. Check buckles for proper operation. Check belt and reel attach points for security. ✓

> NOTE
>
> TSO tag not required on factory installed harnesses.

Trim Controller (Manual flight controls only) : Adjust trim controller per Section 14.710. N/A

Windows: Minor damage that does not impair pilot's visibility or indicate impending structural failure is acceptable. For cracks and crazing adjacent to windshield retainer strips, refer to Section 2.580. ✓

Acceptable damage includes:

a. One nick, not more than 0.010 inch deep and occupying an area not larger than 0.25 by 0.50 inch per square foot. ✓

b. Scratches not more than 0.010 inch deep and 5 inches long. ✓

c. Any surface defect such as small spots or stains that can be removed with light polishing. ✓

d. Minor polarization faults in small areas of windshield near edges. ✓

Skin: Inspect skin for damage. Inspect for loose rivets, indicated by cracked paint and/or black residue around heads. ✓

Doors: Inspect for cracks around hinges and latches. Check vents for operation. Ensure hinge pins are secured with cotter pins. Check tightness of hinge mounting screws. Verify proper operation of door latching and locking mechanisms. ✓

Chin Drains (R44 Clipper): Verify no obstructions. N/A

18. Special Equipment (if installed)

Peak Beam Searchlight: Check for proper operation. Align beams by focusing both lights to smallest spot possible and shining against a wall at least 100 feet away. Verify both spots hit same point within one foot. N/A

Nose Gimbal and Monitors: Turn power on and verify infrared units complete cool down sequence in manufacturer's recommended time. Verify gimbal steers smoothly in azimuth and elevation. Check focus and zoom of infrared/video. Check for clear images on monitors. Verify retractable monitor retracts without interference. N/A

2.410 Inspection Procedures and Checklist (continued)

18. Special Equipment (if installed)

Spectrolab Searchlight: Verify light starts and cooling fan operates. Verify searchlight steers smoothly in azimuth and elevation. For slaved units, turn on slaving and verify light follows nose gimbal approximately. N/A

FM Radios: Verify radios transmit and receive properly and control head programs radios properly. N/A

Video Tape Recorder: Verify all video tape recorder modes operate properly and remote control correctly controls modes. N/A

Overhead Light: Verify overhead light on/off. ✓

Transmit and Intercom Switches: Verify proper operation of special transmit and intercom switches. N/A

Talent Light: Verify talent light on/off, acceptable friction. N/A

Micro Cameras: Verify all micro cameras are selectable from video switcher and produce focused, upright images on monitors.

TV Tuner: Verify TV tuner receives broadcasts (video clear on monitors, audio clear in headset). N/A

Microwave Antenna: Verify omnidirectional microwave antenna extends/retracts properly. Verify up/down indicator lights function properly. N/A

Electromagnetic and Radio Frequency Interference: With all special equipment turned on, check for EMI/RFI with tach, COM, intercom, compass, or other systems. N/A

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs

Life-Limited Parts: Replace life-limited parts that have reached maximum service life per § 3.300. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations. ✓

Component Overhaul: Replace components that have reached maximum service before overhaul per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations. ✓

Component Retirement: Replace components that have reached maximum service life per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations. ✓

Airworthiness Directives: Verify applicable airframe, engine, and accessory Airworthiness Directives (ADs) have been performed according to AD compliance procedures. Some aircraft may be affected by ADs that require recurring inspections at less than 100-hour or annual intervals. Recent U.S. Airworthiness Directives are available online at www.faa.gov. ✓

2.410 Inspection Procedures and Checklist (continued)

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs (continued)

Service Bulletins: Verify applicable airframe, engine, and accessory Service Bulletins (SBs) have been complied with according to manufacturers' instructions. Some aircraft may be affected by SBs that require recurring inspections at less than 100-hour or annual intervals. RHC Service Bulletins are available online at www.robinsonheli.com, under the Publications tab. ✓

20. Required Documents and Placards

Documents: Check that required documents (Airworthiness Certificate, Registration, applicable Radio Station License, Pilot's Operating Handbook, Equipment List/Weight & Balance Data) are on board, legible, and current. ✓

Placards: Verify required placards are properly installed, legible, and current. Refer to Pilot's Operating Handbook Section 2 for placard requirements. ✓

21. Inspection and Access Covers

Foreign Objects Removed: Verify all tools, loose hardware, rags, and other foreign objects are removed from helicopter. ✓

Covers Closed and Secure: Install/close all inspection and access covers removed in preceding steps. Verify security of all access covers. ✓

Clipper I Airbox Sealed: Ensure air box cover perimeter is sealed with aluminum tape (Clipper I models only). N/A

22. Maintenance Records

Maintenance Records: Verify maintenance records are accurate, legible, and complete. Enter maintenance performed (such as part replacement, equipment adjustments, servicing, and lubrication) and inspection data. Data must include a description of (or reference to data acceptable to the Administrator) the work performed, date, helicopter total time in service, signature, certificate type and certificate number of person approving aircraft for return to service. ✓

Inspection Procedures and Checklist completed:

Mechanic's signature: _____ Date: 8/5/19

[redacted]

R44A 13/5/19.

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TABLE 1 SCHEDULED MAINTENANCE AND INSPECTIONS	First 10 hours	First 25 hours	First 100 hours	Every 50 hours	Every 100 hours	Every 300 hours	Every 500 hours	Every 2200 hours	Every 4 months	Every 12 months	Every 24 months	Every 3 years	Every 4 years	Every 12 years	Every 15 years
Perform maintenance & inspection per Lycoming Operator's Manual.*	•	•		•	•	•									
Perform **Lycoming SI 1129B** *Methods of Checking DC Alternator and Generator Belt Tension.*		•			•										
Perform **Lycoming SI 1191A** *Cylinder Compression.*					•										
Perform **Lycoming SI 1080C** *Maintenance Items for Special Attention.*				•	•										
Perform **Lycoming SB 301B*** *Maintenance Procedures and Service Limitations for Valves.*						•									
Perform **Lycoming SB 366B** *Carburetor Throttle Body Screw Inspection.*					•										
Perform **Lycoming SB 342F (IO-540 Only)** *Fuel Line (Stainless Steel Tube Assy.) and Support Clamp Inspection & Installation. Reference AD 2011-26-04.*					•										
Perform **Lycoming SB 388C** *Procedure to Determine Exhaust Valve and Guide Condition.*			•			•									
Perform **Lycoming SB 480E** *I. Oil & Filter Change & Screen Cleaning / II. Oil Filter/Screen Content Inspection.*		•		•					•						
Perform **TCM SB 643B** *Maintenance Intervals for All TCM & Bendix A/C Magnetos & Related Equipment.*					•		•						•		
Perform **TCM SB 658** *Distributor Gear Maintenance.*							•								
Perform **TCM SB 663A** *Two-Wire Magneto Tach. Breaker Contact (Points) Assy. P/N 10-400507.*							•						•		
Perform 100-hour/annual maintenance & inspection per § 2.400.					•					•					
Lubricate C181-3 bearing per § 1.140.						•						•			
Replace hydraulic filter per § 1.170.						•									
Drain and flush gearboxes per § § 1.120 & 1.130.							•								
Clean gearbox chip detectors per § 1.115.							•			•					
Perform clutch assembly lubricant inspection & servicing per § 7.210.							•								
Service collective spring (manual controls) per § 8.221.							•								
Verify magneto drive cushion pliability.							•						•		
Overhaul helicopter per § 2.700.								•							
Inspect emergency locator transmitter (ELT) per 14 CFR § 91.207.										•					
Perform pop-out float leak check per § 5.630.										•					
Test and inspect transponder per 14 CFR § 91.413.											•				
Perform pop-out float inflation check per § 5.640.												•			
Perform pop-out float pressure cylinder hydrostatic test.*												•			
Perform 12-year maintenance and inspection per § 2.600.														•	
Pop-out float pressure cylinder maximum life.															•

* Shorter interval than published on referenced document/decal.

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VH-NBY JIN 255

SECTION 4
PERIODIC INSPECTIONS

SECTION 4

PERIODIC INSPECTIONS

NOTE

Perhaps no other factor is quite so important to safety and durability of the aircraft and its components as faithful and diligent attention to regular checks for minor troubles and prompt repair when they are found.

The operator should bear in mind that the items listed in the following pages do not constitute a complete aircraft inspection, but are meant for the engine only. Consult the airframe manufacturer's handbook for additional instructions.

Pre-Starting Inspection – The daily pre-flight inspection is a check of the aircraft prior to the first flight of the day. This inspection is to determine the general condition of the aircraft and engine.

The importance of proper pre-flight inspection cannot be over emphasized. Statistics prove several hundred accidents occur yearly directly responsible to poor pre-flight.

Among the major causes of poor pre-flight inspection are lack of concentration, reluctance to acknowledge the need for a check list, carelessness bred by familiarity and haste.

1. DAILY PRE-FLIGHT (ENGINE).

a. Be sure all switches are in the "Off" position.
b. Be sure magneto ground wires are connected.
c. Check oil level.
d. Check fuel level.
e. Check fuel and oil line connections, note minor indications for repair at 50-hour inspection. Repair any leaks before aircraft is flown.
f. Open the fuel drain to remove any accumulation of water and sediment.
g. Make sure all shields and cowling are in place and secure. If any are missing or damaged, repair or replacement should be made before the aircraft is flown.
h. Check controls for general condition, travel and freedom of operation.
i. Induction system air filter should be inspected and serviced in accordance with the airframe manufacturer's recommendations.

2. 10-HOUR INSPECTION (ENGINE). After the first ten (10) hours of operating time, new, rebuilt, or newly overhauled engines replace the oil filter, and conduct an inspection of the contents of the used oil filter for traces of metal particles.

3. 25-HOUR INSPECTION (ENGINE). At twenty-five (25) hours of operating time since the first inspection, new, rebuilt, or newly overhauled engines should undergo a 50-hour inspection including draining and renewing lubricating oil, replacing the oil filter, and inspecting the contents of the used oil filter.

NOTE

If the engine does not have a full-flow oil filter, change oil every 25 hours; also, inspect oil pressure and suction screens for metal contamination, and clean thoroughly before reinstallation.

4. 50-HOUR INSPECTION (ENGINE). In addition to the items listed for daily pre-flight inspection, the following maintenance checks should be made after every 50 hours of operation.

a. Ignition System –

(1) If fouling of spark plugs has been apparent, clean them and check electrode gap. Rotate bottom plugs to upper position.

(2) Examine spark plug leads of cable and ceramics for corrosion and deposits. This condition is evidence of either leaking spark plugs, improper cleaning of the spark plug walls or connector ends. Where this condition is found, clean the cable ends, spark plug walls and ceramics with a dry, clean cloth or a clean cloth moistened with methyl-ethyl-ketone. All parts should be clean and dry before reassembly.

(3) Check ignition harness for security of mounting clamps and be sure connections are tight at spark plug and magneto terminals.

b. Fuel Line and Induction System – Check the primer lines for leaks and security of the clamps. Remove and clean the fuel inlet strainers. Check the mixture control and throttle linkage for travel, freedom of movement, security of the clamps and lubricate if necessary. Check the air intake ducts for leaks, security, filter damage; evidence of dust or other solid material in the ducts is indicative of inadequate filter care or damaged filter. Check vent lines for evidence of fuel or oil seepage; if present, fuel pump may require replacement.

c. Lubrication System –

(1) Check oil lines for leaks, particularly at connections; for security of anchorage and for wear due to rubbing or vibration, for dents and cracks.

(2) Replace elements on external full-flow oil filters. Before disposing of used element check interior folds for traces of metal particles that might be evidence of internal engine damage. Drain and renew lubricating oil. (Reference latest revision of Service Instruction No. 1014 for proper oil.)

d. Exhaust System – Check attaching flanges at exhaust ports on cylinders for evidence of leakage. If they are loose, they must be removed and machined flat before they are reassembled and tightened. Examine exhaust manifolds for general condition.

e. Cooling System – Check cowling, baffles and baffle seals for damage and secure anchorage. Any damaged or missing part of the cooling system must be repaired or replaced before the aircraft resumes operation.

f. Cylinders – Check rocker box covers for evidence of oil leaks. If found, replace gasket and tighten screws to specified torque (50 in.-lbs.).

Check cylinders for evidence of excessive heat which is indicated by burned paint on the cylinder. This condition is indicative of internal damage to the cylinder and, if found, its cause must be determined and corrected before the aircraft resumes operation.

Heavy discoloration and appearance of seepage at cylinder head and barrel attachment area is usually due to emission of thread lubricant used during assembly of the barrel at the factory, or by slight gas leakage which stops after the cylinder has been in service for awhile. This condition is neither harmful not detrimental to engine performance and operation. If it can be proven that leakage exceeds these conditions, the cylinder should be replaced.

5. 100-HOUR INSPECTION. In addition to the items listed for daily pre-flight, and 50-hour inspection, the following maintenance checks should be made after every one hundred hours of operation.

a. Electrical System –

(1) Check all wiring connected to the engine or accessories. Any shielded cables that are damaged should be replaced. Replace clamps or loose wires and check terminals for security and cleanliness.

(2) Remove spark plugs; test, clean, regap, and rotate them. Replace if necessary.

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b. *Lubrication System* – Drain and renew lubricating oil.

c. *Magnetos* – Check breaker points for pitting and minimum gap. Check for excessive oil in the breaker compartment, if found, wipe dry with a clean lintless cloth. The felt located at the breaker points should be lubricated in accordance with the magneto manufacturer's instructions. Check magneto to engine timing. (Timing procedures for Bendix and Slick magnetos are covered in the Maintenance Procedures Section.)

d. *Engine Accessories* – Engine mounted accessories such as pumps, temperature and pressure sensing units should be checked for secure mounting, tight connections.

e. *Cylinders* – Check cylinders visually for cracked or broken fins.

f. *Engine Mounts* – Check engine mounting bolts and bushings for security and excessive wear. Replace any excessive wear. Replace any bushings that are excessively worn.

g. *Primer Nozzles* – Disconnect primer nozzles from engine and check for equal flow. N/A

h. *Fuel Injector Nozzles and Lines* – Check fuel injector nozzles for looseness. Tighten to 60 in.-lbs. torque. Check fuel line for dye stains at connections (indicating leakage) and security of lines. Repair or replacement must be accomplished before aircraft resumes operation. N/A

i. *Carburetor* – Check throttle body attaching screws for tightness; the correct torque for these screws is 40-50 in.-lbs.

6. *400-HOUR INSPECTION.* In addition to the items listed for daily pre-flight, 50-hour and 100-hour inspections, the following maintenance check should be made after every 400 hours of operation.

Valve Inspection – Remove rocker box covers and check for freedom of valve rockers when valves are closed. Look for evidence of abnormal wear or broken parts in the area of the valve tips, valve keeper, springs and spring seats. If any indications are found, the cylinder and all of its components should be removed (including the piston and connecting rod assembly) and inspected for further damage. Replace any parts that do not conform with limits shown in the latest revision of Special Service Publication No. SSP-1776.

7. *NON-SCHEDULED INSPECTIONS.* Occasionally, service bulletins or service instructions are issued by Lycoming that require inspection procedures that are not listed in this manual. Such publications, usually are limited to specified engine models and become obsolete after corrective modification has been accomplished. All such publications are available from Lycoming distributors, or from the factory by subscription. Consult the latest revision of Service Letter No. L114 for subscription information. Maintenance facilities should have an up-to-date file of these publications available at all times.

[redacted] 13/5/19.

VH-NBY J/N 255

ROBINSON
HELICOPTER COMPANY
2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-97

DATE: 11 April 2019

TO: R44 II Owners, Operators, and Maintenance Personnel

SUBJECT: R44 II Induction Hose

EFFECTIVITY: A785-31 hoses shipped as spares from May thru November 2018, and A785-31 hoses originally installed on R44 II Helicopters S/N 14248 thru 14286 except 14269.

TIME OF COMPLIANCE: Part A: Within one flight hour, or prior to further flight if engine roughness or power loss is, or has been, encountered. Part B: By 30 June 2019.

BACKGROUND: RHC has received a report of an A785-31 engine air induction hose with separation between its outer and inner layers. A separated inner layer can block engine induction air flow.

COMPLIANCE PROCEDURE:

Part A:

1. Remove right side engine cowling and remove A785-31 hose.
2. Visually inspect inside of hose to verify no separation between outer and inner layers. Also, flex the hose in all directions and listen for a crinkling sound, which is an indication of separation. (An airworthy hose does not make a crinkling sound when flexed.)
3. Prior to further flight, replace any hose with any indication of separation; contact Pat Cox (ts1@robinsonheli.com) for instructions regarding any separated hose.
4. Make appropriate maintenance record entries.

Part B:

1. Replace or discard all affected A785-31 hoses by 30 June 2019.
2. Make appropriate maintenance record entries.

APPROXIMATE COST:

Parts: No charge for replacement A785-31 hose if ordered by 30 June 2019. Reference helicopter serial number or RHC invoice number when ordering.

Labor: 0.5 man-hour.

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

N/A DUE A/C S/N.

[redacted] 59457 3/5/19

ROBINSON
HELICOPTER COMPANY

VH-NBY JIN 455

2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-98B

(supersedes R44 SB-98A)

DATE: 15 April 2019 **REV B:** 3 May 2019

TO: R44-series Owners, Operators, and Maintenance Personnel

SUBJECT: Air/Oil Separator Hose Spring

EFFECTIVITY: R44 Helicopters S/N 2566 thru 2579 except 2577. R44 II Helicopters S/N 14284 thru 14314 except 14287, 14299, and 14304. R44 Cadet Helicopters S/N 30044 thru 30053 except 30047. Also helicopters retrofitted with air/oil separators.

TIME OF COMPLIANCE: Part A: Prior to further flight. Part B: Within next 5 flight hours or by 17 May 2019, whichever occurs first.

BACKGROUND: RHC has received a report of a kinked A729-75 hose, installed between the engine and C728-2 air/oil separator assembly. The kinked hose caused the crankcase to vent through the separator drain back tube, resulting in loss of engine oil. Revision A of this bulletin added an immediate inspection requirement and reduced the compliance time for installing a replacement hose and inserting a spring inside the hose to prevent kinking. Revision B adds Figures 1 & 2; compliance time is unchanged.

COMPLIANCE PROCEDURE:

Part A:

1. Open left side cowl door.
2. Refer to Figure 1. Using a bright light, visually inspect A729-75 black rubber breather hose, located above and beyond the oil filter. If hose is kinked, remove and replace prior to further flight.

Part B:

1. Refer to Figure 2. For each affected helicopter, order one D774-20 spring and one A729-75 crankcase breather hose from RHC Customer Service.
2. Remove engine RH cowling. R44 IIs only: Remove air box assembly per R44 Maintenance Manual (MM) § 6.470.
3. Remove screw securing air/oil separator's can-to-frame clamp.
4. Loosen B277-12 clamps and remove A729-75 hose; retain clamps and discard hose.
5. Install new A729-75 hose and insert new D774-20 spring inside hose; secure hose with retained clamps.

(OVER)

N/A DOES A/C S/N.
[redacted] s 22 59447 13/5/19.

6. Install screw securing air/oil separator's can-to-frame clamp. Verify security.
7. Install air box assembly per MM § 6.480, if removed. Install engine RH cowling.
8. Make appropriate maintenance record entries.

APPROXIMATE COST:

Parts: No charge for one D774-20 spring and one A729-75 hose if ordered by 17 May 2019. Reference helicopter serial number when ordering.

Labor: 0.5 man-hour for R44 and R44 Cadet Helicopters.
1.0 man-hour for R44 II Helicopters.

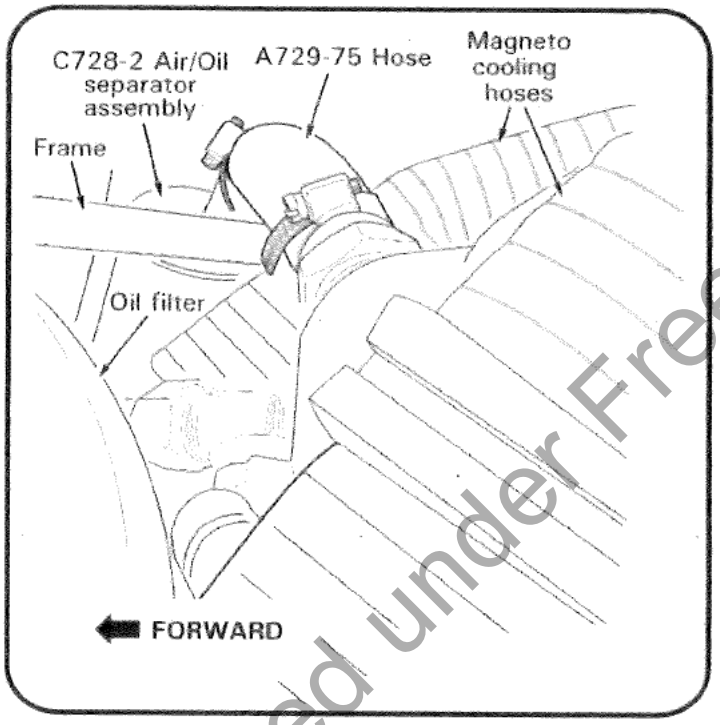

FIGURE 1

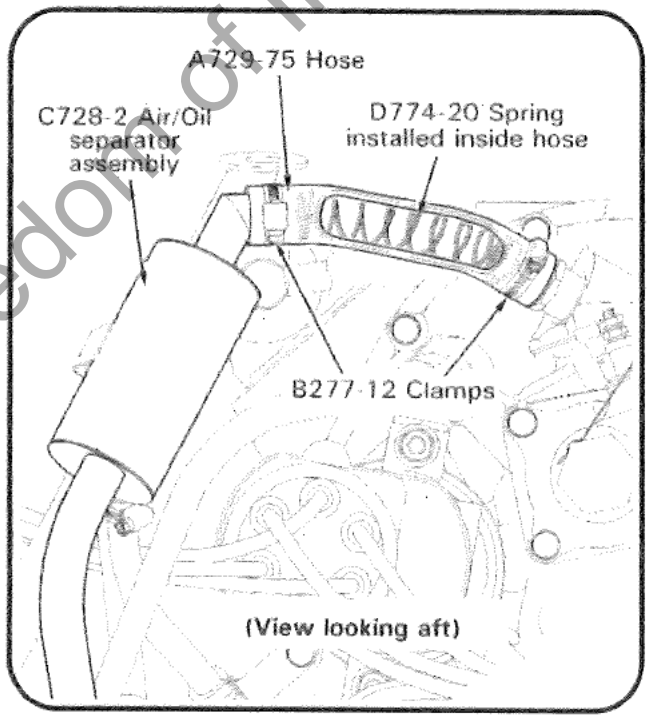

FIGURE 2

[redacted] s22 5944A 13/5/19.

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
11/09/2018	4.0	Manufacturers Data Plate			CASR 1998 Subpart 21.Q	Complied With by RHC.
Helibiz J/No H5015		Australian National and Registration Markings			CASR 1998 Subpart 45.B	Complied With at Reassembly.
		Aircraft Registration Identification Plate			CASR 1998 Subpart 45.D	Complied With at Reassembly.
		External Doors		90.130	CASR 1998 Subpart 90.B	Complied With and Placard Per Rule.
		Emergency Exit Doors		90.135	CASR 1998 Subpart 90.B	N/A, No Emergency Exits Doors.
		Equipment for Aircrafts for VFR Flight – Day and Night.			CAR 1988 Subpart 174.A	Complied With/ Factory Installed.
		Emergency Locator Transmitter			CAR 1988 Subpart 252.A	Kannad 406 Integra AF ELT Factory Installed.
		Provision & Use of Oxygen Equipment.			CAO 20.4	Not Installed.
		Emergency and Life Saving Equipment.			CAO 20.11	Not Installed.
		Air Service Operations – Loading System.			CAO 20.16.1	Refer R44 POH (RTR461) Sect.6.
		Air Service Operations – Carriage of Cargo.			CAO 20.16.2	Under Seat and Placard Per RHC.
		Instruments for VFR, Day and Night – Helicopters.		3.2, App. VI &VIII	CAO 20.18	Complied With/ Factory Installed.
		Standards for Mode S Transponders		9C & 9E	CAO 20.18	Transponder Meets Standard, ADS-B In/Out Factory Installed.
		Serviceability of Required Equipment.		10	CAO 20.18	N/A All Serviceable at Time of Issue.

11.5.18.
HELIBIZ
COA# C562

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
11/09/2018	4.0	Windshield Clear Vision Equipment.		5	CAO 20.18	Not Required – A/C Less Than 2750 kg.
Helibiz J/No H5015		Altimeter & Altitude Encoder and Transponder Testing.		11	CAO 100.5	Complied With by RHC on 04 May 2018
		Airspeed Indicator Testing.		11	CAO 100.5	ASI New at Installation on 24 May 2018
		Pitot-Static System Testing.		11	CAO 100.5	Complied With by RHC on 21 May 2018
		Fuel Quantity Gauge Testing.		11	CAO 100.5	Complied With/Placard Attached.
		Weight Control of Aircraft.			CAO 100.7	Weight & Balance Validated. See Logbook.
		Airborne Radio Equipment.			CAO 108.34	Complied With/ Factory Installed.
		Anti-Collision Lights.			CAO 108.50	Complied With/ Factory Installed.
		Calibration of Compasses.			AWB 34-008	Transferred to Maintenance Release - See Logbook.

Following AD sections assessed and found not applicable to this helicopter at this time:

Air-conditioning Equipment, Air Induction Systems , Auxiliary Power Units, Cargo Equipment , Cockpit Voice and Flight Data Recording Systems, Compressed Gas Cylinders, Emergency Equipment, Fire Protection Equipment, Flight Management Systems, Fuel Supply and Metering Equipment , Hose Assemblies, Hydraulic Equipment , Instruments and Automatic Pilots, Lubrication Systems, Oxygen Systems, Parachute Equipment, Pneumatic Equipment, Precision Aerial Delivery System, Propeller, Seats and Berths, Supplementary Equipment, Turbochargers, Wheels and Tyres.

11-5-18

HELIBIZ
COA# C58236

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
		General AD's				
11/09/2018	4.0	AD/GENERAL/ 1 -28, 30 - 36, 38, 40 - 44, 46 - 48, 51 - 64, 66 - 74, 76 - 81, 83 - 85 - **All Cancelled.**				
Helibiz J/No H5015		AD/ GENERAL /37 Emergency Exits	9			N/A No Emergency Exits.
		AD/ GENERAL /39 Generator Warning Placard	3			Complied With - Placard Installed.
		AD/GENERAL/75				Still to be Issued.
		AD/GENERAL/29, 45 Amdt.2, 49 Amdt.3, 50, 65 Amdt.5, 82 Amdt.2, 86, 87 - **All N/A by A/C Type, Equipment Not Installed or A/C New.**				
		Cooler AD's				
11/09/2018	4.0	AD/COOL/1 Stewart Warner Oil Coolers				N/A by S/No.
Helibiz J/No H5015		AD/COOL/2 Stewart Warner Oil Coolers				N/A by S/No.
		Electrical AD's				
11/09/2018	4.0	AD/ELECT/1 - 10, 12, 14 - 19, 21, 22, 24 - 27, 29, 30 - 36, 41, 44 - 47, 49, 50, 53, 68, EASA2010-0237-CN - **All Cancelled or Superseded.**				
Helibiz J/No H5015		AD/ELECT/11 A.1, 13 A.2, 20, 23, 28 A.3, 37 A.2, 38, 40, 42 A.1, 43, 48 A.3, 51 A.1, 52, 54, 55 A.2, 56 A.1, 57 A.1, 58, 60, 61, 62, 64, 65, 67, 69, 70 A.2, 71, 72, 73, 74 A.1, 75 A.1, FAA2013-10-01 - **All N/A due component not installed on A/C, A/C model or model and SN of component.**				
		AD/ELECT/39 Bendix Starting Vibrator				N/A by P/No.
		AD/ELECT/59 Ignition Switches	1			N/A Due TCM Switch installed.

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
11/09/2018	4.0	AD/ELECT/63 Magneto Capacitor	1			N/A by S/No.
Helibiz J/No H5015		AD/ELECT/66 Bendix Magneto Coils	1			N/A by S/No.
Radio Communication and Navigation Equipment AD's						
11/09/2018	4.0	AD/RAD/1 - 32, 34 - 43, 46, 50, 53, 55 - 57, 61, 66, 68, 76, 84, 93, 2006-0265-CN - **All Cancelled**.				
Helibiz J/No H5015		AD/RAD/33, 44, 45, 48, 49, 51 A.1, 52, 54, 58 A.1, 59, 60 A.1, 62, 63, 64 A.1, 65, 67, 69, 70, 71, 72, 73, 75, 77 A.1, 78, 79 A.1, 80, 82, 83, 85A.1, 86, 87 A.1, 88, 89, 90, CF-2009-44, 91 A.1, 92 A.1, 2010-07-02, 2010-0186, 2010-0204, 2011-0043, 2011-0103, 2011-0239, 2012-02-08, 2012-14-15, CF-2013-25, 2014-05-27, 2014-0125, 20140095R1, 2014-18-01, 2010-0003R2, 2015-0093, 2015-10-51. N/A Due Component/s Not Installed This A'craft				
		AD/RAD/47 Periodic Testing of ATC Transponders	2		24 month requirement.	Cancelled. Ref CAO 100.5
		AD/RAD/74 Garmin GNS 430				N/A, Not Installed.
		AD/RAD/81 Garmin Mode S Transponders	1			N/A, GTX 335 Installed With Latest Software.
Restraint Equipment AD's						
11/09/2018	4.0	AD/RES/1 - 9, 11 A.1, 15, 16, 17, 18, 22 A.1, 24, 25, 27 A2, 29 A.1, 30 - **All Cancelled.**				
Helibiz J/No H5015		AD/RES/10 A.4, 12 A.1, 13 A.1, 14,19, 20, 21, 23 A.1, 26, 28, 31, 32, 33 A.1, 34, 35 – **N/A – Not Installed.**				
		EASA 2013-0020R4 Safety Belts/Torso Restraints – Insp.				N/A, New A/C.
		EASA 2014-0279 Restraint Sys Rotary Buckle Ident./Replace.				N/A, Not Fitted.

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
Robinson R44 Series Helicopter AD's						
11/09/2018	4.0	AD/R44/1, 18 A.1, 19, 22 A.4, 24, 25 A2 - **All Cancelled**				
Helibiz J/No H5015		AD/R44/2 Cyclic Control System				N/A by S/No.
		AD/R44/3 Push-Pull Guide Tubes				N/A by S/No.
		AD/R44/4 Placard to Prohibit Pushovers				Complied With by RHC.
		AD/R44/5 Low RPM Warning Unit	1			N/A by S/No.
		AD/R44/6 Main Rotor Gearbox				N/A by S/No.
		AD/R44/7 Clutch Assembly				N/A by S/No.
		AD/R44/8 Lateral Cyclic Trim Spring				N/A by S/No.
		AD/R44/9 Oil Line Elbows				N/A by S/No.
		AD/R44/10 Main Rotor Blade	1			N/A by S/No.
		AD/R44/11 Cyclic Control Pilots Grip Assembly	1			N/A by S/No.
		AD/R44/12 Auxiliary Fuel Tank Sump Drain				N/A by S/No.
		AD/R44/13 Rotor Drive Yoke				Complied with by RHC SB-35
		AD/R44/14 Wire and Fuel Line Chafing				N/A by S/No.
		AD/R44/15 Sprag Clutch				N/A by S/No.

22950 11.9.18

HELIBIZ COA# C58236

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
11/09/2018	4.0	AD/R44/16 Vertical to Horizontal Stabiliser Attach				N/A by S/No.
Helibiz J/No H5015		AD/R44/17 T/R Pitch Control Assembly				N/A by S/No.
		AD/R44/20 Main Rotor Swashplate and T/Rotor Bolts				Complied with by RHC SB-31.
		AD/R44/21 Seat Belt Buckles				Complied with by RHC SB-56.
		FAA 2010-24-03 T/R Control Pedal Bearing Block - Insp.				N/A by S/No.
		FAA 2011-12-10 M/R Blade Leading Edge Skin				Superseded by FAA AD 2014-23-16.
		FAA 2013-05-15 Emergency Float Valve Assembly				N/A, Floats Not Installed.
		AD/R44/23 R44 Bladder Fuel Tank Retro.				Complied With by RHC at Production.
		FAA 2014-23-16 M/R Blade - Skin Debonding – Inspection.				N/A due M/R Blade P/No.
		FAA 2016-26-04 Main Rotor Blades.				N/A, Complied With by RHC at Manufacture
		FAA 2016-26-04 Main Rotor Blades.				N/A, Complied With by RHC at Manufacture
		All FAA AD's through Bi-Weekly issue 2018-14 complied with by R.H.C. during rotorcraft production.				
		All FAA AD's through Bi-Weekly issue 2018-18 complied with or found N/A at this time.				
		All R.H.C. Service Bulletins through No. 95 complied with during rotorcraft production.				

HELIBIZ
COA# C58236

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para.	Required Document (where applicable)	Compliance Details and Certifications or Reason for Non-Applicability
28/03/19	52.3	D602-1 Time Delay Assembly	—	—	RHC R44 S/B 096	C/W NDF Pearl Coast Heli Maintenance J/N 233 Refers. For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686 27/3/19
13/05/19	88.62	R44 II Induction Hose	—	—	RHC R44 S/B 097	N/A Due A/C S/N Pearl Coast Heli Maintenance J/N 255 Refers. For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686
13/05/19	88.62	Air/Oil Separator Hose Spring	—	—	RHC R44 S/B 098B	N/A Due A/C S/N Pearl Coast Heli Maintenance J/N 255 Refers. For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686 13/5/2019
20/7/2019	186.41	24VOLT BATTERY ELECTROLYTE LEAKAGE	—	—	RHC R44 S/B 099	C/W PEARL COAST HELI MAINTENANCE JN 299 REFERS
20/7/2019	186.41	R44 II INDUCTION HOSE	—	—	RHC R44 S/B 100	N/A DUE A/C S/N 20/7/19
29/7/2019	195.03	ONBOARD CARGO SYSTEMS R44 28V HOOK KIT	—	—	ONBOARD CARGO SYSTEMS STC-SR01808SS	DONE PEARL COAST HELI MAINTENANCE J/N 304 REFERS 29/7/19. For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686
9/10/19	248.8	RHC Heli S/B flight control [illegible]	—	—	RHC R44 S/B 101	N/A Due not installed Pearl Coast Heli J/N [illegible] 9/10/19. For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686
4/6/20	286.9	Chin Hole cover	—	—	RHC R44 S/B 102	NA Due A/C S/N
4/6/20	286.9	M/K Tip plate Removal	—	—	RHC R44 S/B 103	PCW NDF
4/6/20	286.9	Air/oil Separator	—	—	RHC R44 S/B 104	NA Due A/C S/N. Pearl Coast Heli Maintenance J/N 551 [illegible]. For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686

VH-NBY Model: R44 Raven I AF Serial #: 2544

AF TTIS: 4.00 AF Cycles: AF Landings:

Job No: H5015 NBY

Maintenance Release No: A210444

Expired M/Release No: N/A

Heli biz

Reassemble / CofA - Airframe

- Aircraft Date of Manufacture: 19/07/2018, S/No. 2544. Registered as VH-NBY.
- New Aircraft Received on U.S.A Export Certificate of Airworthiness # E472473.
- Aircraft Total Time in Service, Equipment Fitted and Details of Components Fitted, Have Been Transferred From the FAA U.S.A. Logbooks to CASA Australian Logbooks.
- Robinson R44 Service Bulletins Through and up to # 95 and FAA Airworthiness Directive's Through to Bi-weekly Issue No. 2018-14 Have Been Complied with by R.H.C. at Manufacture.
- FAA Airworthiness Directives Issued Through Bi-Weekly Issue No. 2018-18 Have Been Complied With or Found Not Applicable at this Time.
- The Helicopter was Inspected and Found to be in Compliance with the FAA Type Certificate Data Sheet: H11NM Rev. 9 Thus Complies With CASA Type Acceptance Certificate: R44.
- The Following Optional Avionics Equipment Installed by R.H.C. at Manufacture: 1 x Garmin GTX335 Transponder, 1 x Trans Cal B240-3 Blind-encoder, 2 x Garmin GTR225B VHF Transceiver Com/X'CVR, 1 x Kannad Integra AF ELT, 1 x Garmin GMA350HC Audio Panel, 1 x Kelly.
- Pitot-Static and Pressure Altimeter Inspected/Tested by R.H.C. at Manufacture and Satisfy the Requirements of CAO 100.5. Carried Out on the 21 May 2018.
- Airspeed Indicator New at Installation 24 May 2018, Next Inspection - 24/05/2022.

Following Maintenance Carried Out:

- Reassembled IAW R44 Maintenance Manual Sect. 1.700 (May 2016), Special Instructions for Reassembling After Crating for Export.
- 100 Hr/Annual Airframe Inspection Carried out IAW R44 Maintenance Manual Sect. 2.400. for the Initial Issue of an Australian Certificate of Airworthiness.
- Fireproof Data Plate Attached IAW CASA CASR AC45-01 Para. 10.
- Magnetic Compass P/No. Airpath C2400-L4-B S/No. RB-02254 Removed, P/No. C2400-L4-B S/No. RB-02156 Southern Dip Applied and Installed.
- Weight and Balance validation (Issue One) Carried out by Weight Control Officer – S.Berson Authority No: A058707.
- Fuel Quantity Indicator Test Carried out IAW CASA CAO 100.5. Para. 11.

RE
COA#

Main Fuel Tank

Read:	E	¼	½	¾	Full
Actual:	17	40	64	92	115

Low Fuel Light 20 Litres

Auxiliary Fuel Tank

Read:	E	¼	½	¾	Full
Actual:	9	20	37	52	67

- M/R TRACK + BALANCE CARRIED OUT - ADJUSTED TO WITHIN LIMITS
- T/R Balance Carried out and Adjusted to Within Limits IAW R44 M.M. Sect. 10.240.
- Fan Balance Carried out and Adjusted to Within Limits IAW R44 M.M. Sect. 6.240.
- Ground Run Carried out IAW R44 M.M. Sect. 2.200 and 1.700. – Nil Defects Evident.
- Certificate of Airworthiness #TH/2018/59 issued by: Troy Holloway IOA# 1-ZZ50B.

NOTE: Compass Swing Due - Entered on Maintenance Release.
Operational Flight Check Due – Entered on Maintenance Release.

The following airworthiness directives and special inspections carried out:

Task	Code	Description	Action Taken
0000	Inspection	AIRFRAME - Reassembling and Flight Testing R44 Series Helicopters After Crating For Export IAW R44 Maintenance Manual Section 1.700	Complied With - Nil Defect Evident
0001	Inspection	AIRFRAME - RHC R44 100 Hr/Annual Airframe Inspection IAW R44 Maintenance Manual Section 2.400	Complied With - Nil Defect Evident
0005	Inspection	AIRFRAME - RHC R44 Ground Run and Flight Check IAW R44 Maintenance Manual Section 2.200.	Complied With - Nil Defect Evident
0110	Inspection	ENGINE - 100 Hr Engine Inspection IAW Lycoming Operator's Manual Section 4	Complied With - Nil Defect Evident
0113	TCM SB 643C Part 1	100 Hour Maintenance Intervals For All TCM & Bendix A/C Magnetos & Related Equipment (Includes TCM SB 636/653)	Complied With - Nil Defect Evident
0114	Lycoming SI 1080C	100 Hour Maintenance Items for Special Attention	Complied With - Nil Defect Evident
0115	Lycoming SI 1129D	100 Hour Alternator/Generator Belt Tension	Complied With - Nil Defect Evident
0425	Inspection	CASA CAO 100.5 - Fuel Calibration	Complied With - Nil Defect Evident

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
DATA PLATES	Data Plates - VH-NBY, SN: 2544	AB2301		1
PR1422 B2 PT	PROSEAL Pint Kit 500ml (Book to Aircraft)	AB2208		20

Independent Inspections Carried out pursuant to CAR42G

Main Rotor Head and Blades Install, Main Rotor Pitch Change Links, Tail Rotor Drive Train, Tail Rotor Control, Tail Rotor Pitch Change Links

1st Inspection by: s 22 [redacted] **Signature:** s 22 [redacted] ..... **Licence 222950** **Date:** 11/09/2018

2nd Inspection by: [redacted] **Signature:** [redacted] ..... **Licence 781890** **Date:** 11/09/2018

For and on behalf of Helibiz C of A Number C582366

Co-ordinator's Name: s 22 [redacted] **Signature:** s 22 [redacted] ..... **Licence: 222950** **Date:** 11/09/2018

Date	Aircraft	
	TTIS	Landings or Cycles
12/09/18	4	/
Helibiz J/Do H5015		

Maintenance Details and Certifications

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 Raven I AF Serial #: 2544
AF TTIS: 4.00 AF Cycles: AF Landings:

Job No: H5015 NBY
Maintenance Release No: A210444
Expired M/Release No: N/A

Heli biz

CofA Compass Swing

HELIBIZ
COA# C5823

The following airworthiness directives and special inspections carried out:

Task	Code	Description	Action Taken
0400	Inspection	CASA AWB 34-008 - Compass Swing	Complied With

The following compass swing(s) carried out:

Compass Name	0 N	030	060	090 E	120	150	180 S	210	240	270 W	300	330
Airpath C2400-L4-B	000	030	060	089	120	151	180	210	240	271	301	330

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
C2400-L4-B	Magnetic Compass- Southern Dip Serial # -RB-02156	AB2155		1

For and on behalf of Helibiz C of A Number C582366

Co-ordinator's Name: s 22 [redacted] **Signature:** s 22 [redacted] ..... **Licence:** 222950 **Date:** 12/09/2018

Date	Aircraft TTIS	Aircraft Landings or Cycles
13/5/19	88.62	

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 AF Serial #: 2544 — **Job No:** 255

AF TTIS: 88.62 AF Cycles: AF Landings: — **Maintenance Release No:** A158251

Expired M/Release No: A210444

100Hrly/Annual Inspection/300Hrly Valve Inspection

100Hrly/Annual Inspection C/O IAW Aircraft Logbook Statement & RHC R44 RTR 460 Maintenance Manual Rev May 2016

The following maintenance tasks carried out:

Task	Code	Description	Action Taken
001	100HRLY/12MONTHS	100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200	C/O NDF
002	500HRLY/12MONTHS	Clean & Test M/R & T/R Gearbox Chip Detectors Per RHC R44 M/M Section 1.115	Entered M/R
003	100HRLY/12MONTHS	Gascolator Filter Clean/Inspect	C/O NDF
004	300HRLY/3YRLY	Lubricate C181-3 Lower Bearing IAW RHC R44 M/M Section 1.140	Entered M/R
005	100HRLY/12MONTHS	M/R Head Teeter Friction Test	C/O NDF
006	100HRLY/12MONTHS	M/R Swashplate Friction Test	C/O NDF
007	100HRLY/12MONTHS	Maintenance Flight To Be Carried Out Before Release To Service	C/O NDF
008	100HRLY/12MONTHS	POH Update/Status Check	C/O NDF
009	300HRLY	Replace Hydraulic Filter IAW RHC R44 M/M Section 1.170	C/O NDF
010	100HRLY/12MONTHS	Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230	C/O LHS 0.115" RHS 0.100" Within Limits NDF
011	RHC R44 S/B 097	R44 Raven II Induction Hose	N/A Due A/C S/N
012	RHC R44 S/B 098	Air/Oil Seperator Hose Spring	N/A Due A/C S/N
013	ADDITIONAL	M/R Track & Balance	C/O To Under 0.2IPS Within Limits NDF
014	12MONTHS	Annual ELT Inspection IAW 14 CFR 91.207	Entered M/R
015	2YRLY	CAO 100.5 ATC Transponder Test	Entered M/R
016	50HRLY/12MONTHS	Lights/Electrical/Warning Lights Check	C/O NDF

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
AERO XPD120	OIL	PC437		12
AN5235-1A	R44 Hydraulic Filter	PC358		1
C628-7	R44 Rear Inertia Reel Seat Belt	PC463		1
CH48108-1	Oil Filter	PC417		2
MS28778-14	O-Ring	PC045-2		1

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C o[redacted]

Co-ordinator's Name: s 22 **Signature:**[redacted] **ence:** 594407 **Date:** 13/05/2019

Maintenance Details and Certifications

For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approva[redacted]

Date	Aircraft TTIS	Aircraft Landings or Cycles
20/7/19	186.41	

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-MBY Model: R44 AF Serial #: 2544
AF TTIS: 186.41 AF Cycles: AF Landings:

Job No: 299
Maintenance Release No: A222867
Expired M/Release No: A158251

100Hrly/Annual Inspection

100Hrly/Annual Inspection C/O IAW Aircraft Logbook Statement & RHC R44 RTR 460 Maintenance Manual Revision May 2016

The following maintenance tasks carried out:

Task	Code	Description	Action Taken
001	100HRLY/12MONTHS	100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200	C/O NDF
002	500HRLY/12MONTHS	Clean & Test M/R & T/R Gearbox Chip Detectors Per RHC R44 M/M Section 1.115	C/O NDF
003	100HRLY/12MONTHS	Gascolator Filter Clean/Inspect	C/O NDF
004	100HRLY/12MONTHS	M/R Head Teeter Friction Test	C/O NDF
005	100HRLY/12MONTHS	M/R Swashplate Friction Test	C/O NDF
006	100HRLY/12MONTHS	Maintenance Flight To Be Carried Out Before Release To Service	C/O NDF
007	100HRLY/12MONTHS	POH Update/Status Check	C/O NDF
008	100HRLY/12MONTHS	Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230	C/O LHS 0.080" RHS 0.060" Within Limits NDF
009	RHC R44 S/B 099	24V Battery Electrolyte Leakage	N/A Due A/C S/N
010	RHC R44 S/B 100	R44 RII Induction Hose	N/A Due A/C S/N
011	12MONTHS	Annual ELT Inspection IAW 14 CFR 91.207	Entered M/R
012	2YRLY	CAO 100.5 Altimeter Altitude Reporting Mode C Test	Entered M/R
013	2YRLY	CAO 100.5 ATC Transponder Test	Entered M/R
014	2YRLY	CAO 100.5 Pitot Static System Test	Entered M/R
015	50HRLY/12MONTHS	Lights/Electrical/Warning Lights Check	C/O NDF

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
AERO XPD120	OIL	PC437		12
AN8235-1A	R44 Hydraulic Filter	PC358		1
CH48108-1	Oil Filter	PC484		2
F110-2	Telatemp 140-190°F	PC459		1
F110-3	Telatemp 180-230°F	PC136		1
M-674	GASKET	PC136		12
MS28778-14	O-Ring	PC045-2		1

For and on behalf of Pearl Coast Heli Maintenance Pty

Co-ordinator's Name: s 22 Signatu[redacted] ce: 594407 Date: 20/07/2019

Maintenance Details and Certifications

For Pearl Coast Heli Maintenance [illegible]
Cert.Of Approval No: 0686

Date	Aircraft		Maintenance Details and Certifications
	TTIS	Landings or Cycles	
29/7/19	195.03		

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 AF Serial #: 2544

AF TTIS: 195.03 AF Cycles: AF Landings:

Job No: 304

Maintenance Release No:

Expired M/Release No:

Onboard Systems Hook Install

C/O Install Of Onboard Systems 28v Hook Kit

The following maintenance tasks carried out:

Task	Code	Description	Action Taken
001	ADDITIONAL WORK	Install Onbord Cargo Hook System IAW Onboard Systems STC # SR01808SE	C/O Installed 1 x New 28v Onboard Systems Cargo Hook System P/N 200-327-00 B/N PC508 NDF

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
200-327-00	R44 28Volt Cargo Hook Kit	PC508		1
B263-1	Pin Crimp	PC357		10
B263-12	2 Pin Housing	PC357		2
B263-13	2 Pin Housing	PC357		2
B263-14	3 Pin Housing	PC357		1
B263-15	3 Pin Housing	PC357		1
B263-2	Socket Crimp	PC357		10
MS21919WDG2	P-Clamp	PC329		1
MS27039C0808	Screw	PC383		1

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C o

Co-ordinator's Name: s 22 [redacted]

Signature:..... s 22 [redacted] **Licence:** 594407

Date: 29/07/2019

For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No. 0686

Date	Aircraft	
	TTIS	Landings or Cycles
9/10/19	248.8	
4/6/20	286.9	

Independent Inspections Carried out pursuant to CAR42
T/R Assy.T/R Balance
1st Inspection by: [redacted] s22 **Signature:** [redacted] s22 ..... **Licence** 760877 **Date:** 09/10/2019
2nd Inspection by: [redacted] s22 **Signature:** [redacted] ..... **Licence** 407502 **Date:** 09/10/2019

For Pearl Co[redacted] s22
Maintenance PTY LTD
Cert Of Approval No: 068[redacted]

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 Raven I AF Serial #: 2544
AF TTIS: 248.80 AF Cycles: AF Landings:

Job No: 321
Maintenance Release No: A222878
Expired M/Release No: A222867

Pearl Coast Heli Maintenance

For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686

100Hrly/ Annual Inspection

100Hrly/Annual Inspection C/O IAW Aircraft Logbook Statement & RHC R44 RTR 460 Maintenance Manual Rev Aug 2019

The following maintenance tasks carried out:

001 (100HRLY/12MONTHS) 100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200 C/O NDF , 002 (100HRLY/12MONTHS) Maintenance Flight To Be Carried Out Before Release To Service C/O NDF , 003 (100HRLY/12MONTHS) Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230 C/O LHS 0.105" RHS 0.090" Within Limits NDF , 004 (12MONTHS) Annual ELT Inspection IAW 14 CFR 91.207 Removed ELT Due Company Convenience Portable To Be Used , 005 (300HRLY/3YRLY) Lubricate C181-3 Lower Bearing IAW RHC R44 M/M Section 1.140 C/O NDF , 024 (ADDITIONAL WORK) RHC S/B 101 HeliSAS Flight Control Computer N/A Not Installed , 025 (ADDITIONAL WORK) Tuch up T/R Blades Leading Edges C/O T/R Blades Leading Edges Tuch Up NDF , 026 (ADDITIONAL WORK) T/R Balance C/O T/R Balance To Below 0.2 ips NDF

[redacted] s22
760877
9-10-19

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd

Co-ordinator's Name: [redacted] s22 **Signature:** [redacted] s22 ..... **Licence:** 760877 **Date:** 09/10/2019

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 RAVEN I AF Serial #: 2544
AF TTIS: 286.90 AF Cycles: AF Landings:

Job No: 357
Maintenance Release No: A158254
Expired M/Release No: A222878

Pearl Coast Heli Maintenance

For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686

100Hrly/Annual Inspection

100Hrly/Annual Inspection C/O IAW Aircraft Logbook Statement & RHC R44 RTR 460 Maintenance Manual Rev Aug 2019

The following maintenance tasks carried out:

001 (100HRLY/12MONTHS) 100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200 C/O NDF , 002 (100HRLY/12MONTHS) Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230 C/O LHS 0.100" RHS 0.080" Within Limits NDF , 003 (100HRLY/12MONTHS) Maintenance Flight To Be Carried Out Before Release To Service C/O NDF , 004 (300HRLY) Replace Hydraulic Filter IAW RHC R44 M/M Section 1.170 C/O PN:AN6255-1A GRN:PC534 PN:MS28778-14 GRN:PC383 NDF , ~~005 (500HRLY/12MONTHS) Clean & Test M/R & T/R Gearbox Chip Detectors Per RHC R44 M/M Section 1.115 C/O NDF~~ , 019 (Additional Work) RHC R44 SB-102 Chin Hole Cover NA DUE A/C SN , 020 (Additional Work) RHC R44 SB-103 M/R Tip Plate Removal PCW NDF , 021 (Additional Work) RHC R44 SB-104 Air/Oil Separtor NA Due A/C SN

EIE

[redacted] s22
760877
4-6-20

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd

Co-ordinator's Name: [redacted] s22 **Signature:** [redacted] s22 ..... **Licence:** 760877 **Date:** 04/06/2020

Australian Government

Civil Aviation Safety Authority

Non-recurring AD, Special Inspection and Modification Certification Log

Serial No. L-27772-40E

Engine Type O-540-F1B5

Book No. 1

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
		Lycoming AD's				
11/09/2018	4.0	The following **Lycoming AD's** Cancelled : 1 - 70 , 72 - 75 , 77 , 79 , 82 , 84 , 87 , 88 , 90A.2 - 96 , 117A.2 , 119.				
Helibiz J/No H5015		AD/LYC/71 Pushrod – Inspection	1			N/A By Model
		AD/LYC/76 Propeller Attachment Flange	6			N/A By Model
		AD/LYC/78 Thermostatic Oil Cooler Bypass Valve	5			N/A By P/No.
		AD/LYC/80 Turbo Charger Oil Inlet Adapter Bushing				N/A By Model
		AD/LYC/81 Oil Pump Impellers	3			Complied With at Manufacture
		AD/LYC/83 Crankshaft Flange				N/A By Role
		AD/LYC/85 Exhaust Assembly	1			N/A By Model
		AD/LYC/86 Propeller Governor Oil Line	2			N/A By Model
		AD/LYC/89 Crankshaft Gear	4			N/A – Due at Sudden Stoppage Only
		AD/LYC/97 Connecting Rod Bolt Insp.				N/A By Manufacture
		AD/LYC/98 Push Rod Inner Diameter Scoring				N/A By Model
		AD/LYC/99 Diaphragm Fuel Pumps				N/A, Not Fitted
		AD/LYC/100 Piston Pin P/N LW-14077				N/A By DOM Manufacture
		AD/LYC/101 Superior Cylinders	1			N/A By Manufacture

s 22

HELIBIZ
COA# C582366

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
11/09/2018	4.0	AD/LYC/102 Crankshaft Internal Inspection	3			N/A By Model
Helibiz J/No H5015		AD/LYC/103 Slick Magneto Inspection				N/A, Not Fitted
		AD/LYC/104 Crankshaft Drive Gear Bolts				N/A By S/No.
		AD/LYC/105 Oil Filter Converter Plate Gasket	2			N/A, Not Fitted
		AD/LYC/106 RYCO R14 Oil Filters				N/A, Not Fitted
		AD/LYC/107 Crankshaft Replacement	2			N/A By Model
		AD/LYC/108 Crankshaft Material Inspection				N/A By Model
		AD/LYC/109 Crankshaft Gear Bolt	2			Complied With at Manufacture
		AD/LYC/110 Rotary Fuel Pump Relief Valve Screws	1			N/A, Not Fitted
		AD/LYC/111 Lyc. Engines Last Overhaul in France				N/A, New
		AD/LYC/112 Lycoming Crankshaft Replace				N/A By S/No.
		AD/LYC/113 Eci Cylinder Assemblies	2			N/A By Manufacture
		AD/LYC/114 Improper Maintenance				N/A, New
		AD/LYC/115 Lycoming Crankshaft Replacement				N/A By Model
		AD/LYC/116 Eci Connecting Rods				N/A By Manufacture
		AD/LYC/118 Superior Cylinder Assemblies	2			N/A By Manufacture

[redacted] 22950 11-9-18

HELIBIZ
COA# C582366

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
11/09/2018	4.0	FAA AD 2009-26-12 Eci Cylinder Assemblies				N/A By Manufacture
Helibiz J/No H5015		FAA AD 2011-18-09 Crankshaft Inspect Counterweight Washers				N/A By Model
		FAA AD 2012-03-06 AVStar Fuel Servo Diaphragm				N/A By Model
		FAA AD 2012-03-07 Carburettor HA-6 Mixture Control Sleeve				N/A By Model
		FAA AD 2012-19-01 Crankshaft Replacement				N/A By S/No.
		FAA AD 2015-02-07 Propeller Governor Shaft				N/A By Model
		FAA AD2015-10-06 Replace Turbo Mount				N/A By Model
		FAA AD 2017-11-10 Engine Exhaust System - Inspect				N/A By Model
		FAA AD 2017-16-11 Connecting Rod Small End Bushing – Inspect				N/A By S/No.
Engine-General AD's						
11/09/2018	4.0	AD/ENG/1, 2, 3A1, 5A9, 6A1, 7 & FAA 2011-26-07 Cancelled or N/A due piston or slick magnetos not installed.				
		AD/ENG/4 Piston Engine Airworthiness Requirement	11			N/A Using Manufacturers Schedule.
Electrical AD's						
11/09/2018	4.0	AD/ELECT/63 TCM Magneto Capacitor	1			N/A By S/No.
		AD/ELECT/66 Bendix Magneto Coils & Magnets	1			N/A By S/No.
		AD/ELECT/75 TCM Magneto Impulse Coupling	1			N/A BY P/No. & S/No.

[redacted] 22350 11-9-18

HELIBIZ COA# C58236

Date	Aircraft TTIS	Airworthiness Directive, Special Inspection or Modification	Amdt.	Para	Required Document (where applicable)	Compliance Details and Certification Or Reason for Non-Applicability
Fuel Supply and Metering Equipment AD's						
11/09/2018	4.0	AD/FSM/26 Air Metering Stop Pin				N/A By Manufacture Date (P/No. & S/No.) [redacted] s22
Helibiz J/No H5015						
All FAA AD's and Lycoming SB's complied with at time of Engine Manufacture by Lycoming. D.O.M 29 January 2018.						
All FAA Bi Weekly AD's through to 2018-14 complied with at time of Aircraft Manufacture by RHC.						
Additional FAA Bi Weekly AD's through to 2018-18 checked and found N/A.						
The following New Lycoming Service Bulletins updated: 342G-S3, 411D, 530B-S1, 593B, 608-S1, 613, 614A, 619, 621B, 622, 623, 625, 627C & 632B – All N/A due Model or part not fitted.						

HELIBIZ
COA# C582361

Aircraft Run Out (Components)

Pearl Coast Heli Maintenance

Component Type	Install Date	Install Hrs	Limit	Interval	Counters	TSO	TSN	AF Off	To Run	% Rem.	Tolerance Notes
VH-NBY AF Date 03-07-2020 AF Hours - 291											
TACHOMETER Part #-C792-4 Serial # -			Life Limit	2,200	Hours, Days						
R44 Raven I Carburettor Part #-AV10-6035-11 (MA-4-5MF) Serial # - AV124732464	30/04/2018	0	OH Limit	2,000	Hours, Days	291	291	2000, 27-04-2028	1,709	85 %	
R44 24v Skytec Starter Motor Part #-149-24HT-H Serial # -H-R100035		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 28V Clutch Actuator Part #-C051-2 Serial # -8769		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 28V Plane Power Alternator Part #-RH24-70 Serial # -H-R110102		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Aux Bladder Tank Part #-D028-2 Serial # -		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Clutch Shaft Part #-C166-5 Serial # -0869	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Fanwheel Assy Part #-D174-2 Serial # -NSN	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Raven I Engine Part #-O-540-F1B5 Serial # -L-27772-40E	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Raven I Governor Part #-D278-1 Serial # -3107	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Hydraulic Pump Part #-D500-1 Serial # -6835	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 28V Hydraulic Reservoir Part #-D211-2 Serial # -6568	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32203		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32214		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32215		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Lower Bearing Part #-C181-3 Serial # -9465	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -7 M/R Blade Part #-C016-7 Serial # -9818	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -7 M/R Blade Part #-C016-7 Serial # -9863	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 M/R Gbox Part #-C006-7 Serial # -9838	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200	1,909	87 %	
R44 M/R Hub Part #-C154-1 Serial # -10510		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 M/R Spindle Part #-C158-1 Serial # -23398	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 M/R Spindle Part #-C158-1 Serial # -23396	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 R/H Magneto Part #-10-600646-201 Serial # -E17IA029	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Main Bladder Tank Part #-D028-1 Serial # -		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Oil Cooler Part #-C649-2 Serial # -4947209	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	

Aircraft Run Out (Components)

Pearl Coast Heli Maintenance

Component Type	Install Date	Install Hrs	Limit	Interval	Counters	TSO	TSN	AF Off	To Run	% Rem.	Tolerance Notes
R44 Sprag Clutch Part #-C188-3 Serial # -11844	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -6 Swashplate Assy Part #-C017-6 Serial # -4226	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200	1,909	87 %	
R44 T/R Blade Part #-C029-3 Serial # -8160	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Blade Part #-C029-3 Serial # -8162	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Gbox Part #-C021-1 Serial # -8702	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Gbox Gearset Part #-C545-2 Serial # -11002		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Guard Part #-D079-1 Serial # -11137		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Hub Part #-G062-2 Serial # -5025		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Pitch Control Assy Part #-C031-1 Serial # -10873	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Upper Frame Part #-C020-1 Serial # -9317	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Raven I L/H Magneto Part #-10-600616-3 Serial # -E17EA097	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Horizontal Stabiliser Part #-C044-1 Serial # -9423		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	
R44 T/R Driveshaft Part #-D196-1 Serial # -8521		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	
R44 Tailcone Part #-C023-1 Serial # -10109		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	

321

Job # **321**
Date **07-10-2019**
Rego **NBY**
AFTTIS **248.8**
Customer
Type **100Hrly/Annual Inspection**
Description

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 7/10/19
Licence No : 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Work Required : 100HRLY/12MONTHS 100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200

Task No 001
Category Airframe
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : 100HRLY/12MONTHS Maintenance Flight To Be Carried Out Before Release To Service

Task No 002
Category Airframe
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : 100HRLY/12MONTHS Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230

Task No 003
Category Airframe
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken : C/O LHS 0.105 RHS 0.096" Within Limits NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-9-19

Work Required : 12MONTHS Annual ELT Inspection IAW 14 CFR 91.207

Task No 004
Category Elec. Instr. Radio
Monitor By Days
Interval 365
Due 11-09-2019
To Run -26

Action Taken : Removed ELT Due company convenience + Due 12 month insp

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 9/10/19
Licence No : 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Work Required : 300HRLY/3YRLY Lubricate C181-3 Lower Bearing IAW RHC R44 M/M Section 1.140

Task No 005
Category Airframe
Monitor By Hours, Days
Interval 300
Due 300, 10-09-2021
To Run 51.2

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : 500HRLY/12MONTHS Clean & Test M/R & T/R Gearbox Chip Detectors Per RHC R44 M/M Section 1.115

Task No 006
Category Airframe
Monitor By Days, Hours
Interval 365
Due 19-07-2020, 686.41
To Run 286

Action Taken :
ENTERED [redacted]

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 9/10/19 **Licence No :** 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Work Required : 2YRLY AWB 34.008 2Yrly Compass Swing

Task No 007
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 10-09-2020
To Run 339

Action Taken : ENTERED MR

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : 2YRLY CAO 100.5 Altimeter Altitude Reporting Mode C Test

Task No 008
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 23-05-2020
To Run 229

Action Taken : ENTERED MR

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : 2YRLY CAO 100.5 ATC Transponder Test

Task No 009
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 03-05-2020
To Run 209

Action Taken : ENTERED MR

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : 2YRLY CAO 100.5 Pitot Static System Test

Task No 010
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 20-05-2020
To Run 226

Action Taken : ENTERED MR

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 4/10/19
Licence No : 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Work Required : 100HRLY 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 011
Category Engine
Monitor By Hours
Interval 100
Due 286.41
To Run 37.61

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

Work Required : 50HRLY 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 012
Category Engine
Monitor By Hours
Interval 50
Due 236.41
To Run -12.39

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

Work Required : TCM S/B 643C 100Hrly Magneto Inspection

Task No 013
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

Work Required : LYC SI 1129B Alternator Belt Tension Check

Task No 014
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 9/10/19
Licence No : 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Work Required : LYC S/B 366C Carb Throttle Body Screw Inspection

Task No 015
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

Work Required : LYC SI 1191A Cylinder Compression Check

Task No 016
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken :
C/O Within Limits NDF
1.77 4.77
2.72 5.75
3.76 6.77 All over 80/50

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

Work Required : TCM S/B 653 Hot Magneto Test

Task No 017
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

Work Required : TCM S/B 670 Magneto Distributor Block Inspection

Task No 018
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 4/10/19
Licence No : 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Work Required : LYC SI 1080C Special Attention Maintenance Items

Task No 019
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 8-10-19

Work Required : LYC S/B 595 Torque Values Ignition Harness Attach Screws

Task No 020
Category Engine
Monitor By Hours, Days
Interval 100
Due 286.41, 19-07-2020
To Run 37.61

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : LYC S/B 480F Oil Filter Change & Inspection

Task No 021
Category Engine
Monitor By Hours, Days
Interval 50
Due 236.41
To Run -12.39

Action Taken :
~~C/O NDF~~ Entered MF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

Work Required : LYC S/B 480F 4Monthly Oil & Filter Change

Task No 022
Category Engine
Monitor By Days
Interval 120
Due 10-09-2019
To Run -27

Action Taken :
~~C/O NDF~~ Entered MF

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 9-10-19

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Additional Worksheet Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 9/10/19
Licence No : 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Item	Defect or Work Required	Rectification Details	A.M.E	L.A.M.E	Licence No.	Date
1.	CHT probe found u/s	Renewed CHT probe P/N: 30403? C/N: PC457 N.D.F		[redacted]	760877	9-10-19
2.	touch up t/r blades leading edges.	c/o t/r blades leading edge touchup N.D.F			760877	9-10-19
3.	t/r Balance	c/o ~~th~~ T/R Balance to Below 0.2IPS NDF			760877	9-10-19
4.	RHC S/B 101 HeliSAS flight control computer	N/A not installed			760877	9-10-19

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No :

Additional Worksheet Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 321

Co-ordinators Signature :
Print Name : s 22
Date : / /
Licence No : 760877

Component	Counter	Total
Airframe	Hours	248.8
Airframe	Days	07-10-2019

Item	Defect or Work Required	Rectification Details	A.M.E	L.A.M.E	Licence No.	Date

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No :

Co-Ordination and Final Certification

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Owner : Horizontal Falls Helicopters
Operator : Horizontal Falls

Job No : 321
Job Description :

M/R Date of Issue	9/10/19
Expired M/R Serial No.	A222867
Issued M/R Serial No.	A222676
Aircraft TTIS	248.8

L.A.M.E CERTIFICATION

I hereby certify that all maintenance in the category(s) for which I am responsible have been completed.

Categories covered during this inspection - Certifications

Airframe	s 22 [redacted]	Licence Number	760877	Date	9-10-19	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Engines		Licence Number	760877	Date	9-10-19	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Electrical		Licence Number	760877	Date	9-10-19	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Instrument		Licence Number	760877	Date	9-10-19	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Radio		Licence Number	760877	Date	9-10-19	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Independent Inspection Certificate Pursuant to CAR 42G. Inspection carried out on the following :

T/R ASSY, T/R Balance.

1st Inspection Signature : s 22 [redacted] Licence Number 760877

2nd Inspection Signature : Licence Number 407502

CO-ORDINATING CERTIFICATION

I hereby certify for the completion and co-ordination of the entire inspection.

LAME Signature : s 22 [redacted] LAME Licence No : 760877 Date 9/10/19 For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

A CERTIFICATION ABOVE CONSTITUTES A CERTIFICATION PURSUANT TO CAR42ZE THAT ALL MAINTENANCE HAS BEEN PROPERLY CERTIFIED. Note: The person who certifies for the completion and co-ordination of the entire inspection or workpackage contents is to ensure that any maintenance performed during the inspection has not invalidated a certification already made in another category and has been completed and properly certified.

Engineering Work Package Pearl Coast Heli Maintenance Pty Ltd COA - 0686

JOB DETAILS

Job Number	321	Date Raised	07/10/2019	AF TTIS	248.8
Aircraft Registration	VH-NBY	Date Completed	9-10-19	Engine TTIS	248.8
Operator	Horizontal Falls Helicopters	Approved Maintenance Data (Airframe)	RHC R44 RTR 460 Maintenance Manual Rev Aug 2019	Landings/Starts	
Aircraft Type	R44			Cycles	
Operator Base	Pearl Coast Heli Maintenance	Approved Maintenance Data (Engine)	Lycoming O-540 Operators Manual Rev March 2009	RINS	

Job Description :

SIGNATURE SIGN OFF	Name	Licence No.	Signature & Initial	Trade Type	Hours
Job Coordinator	s 22 [redacted]	760877	s 22 [redacted]	B1.4	
AME/LAME					

VH-VBY

2.200 GROUND AND FLIGHT CHECK FOR 100-HOUR/ANNUAL INSPECTION

Complete following checklists in conjunction with a 100-hour or annual inspection. Note and correct any discrepancies.

2.205 Ground Check (Aircraft not running)

1. Throttle Control: Check for freedom of rotation with collective full down and full up. ____
2. Throttle Overtravel Spring: Check by twisting throttle past idle position to override stop. Release throttle and ensure it returns to normal idle position. ____
3. Mixture Control: Check for smoothness of operation with no binding. Check press-to-unlock button for proper function. Verify 0.03 to 0.10 inch spring-back at full rich position. ____
4. Carburetor Heat Control (O-540 only): Check for smoothness of operation with no binding. Verify 0.03 to 0.10 inch spring-back at full off position. ____
5. Cyclic Control: With trim motors (if installed) in neutral position, verify freedom thru full travel with friction off. Verify friction knob rotates 1/8-to-1 full turn before adding friction. For hydraulic controls: Verify approximately one-half inch total longitudinal and one inch total lateral freeplay before encountering resistance. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel. ____
6. Collective Control: Verify freedom through full travel with friction off and on. For non-hydraulic aircraft, verify friction knob moves 0.3-0.6 inch before adding friction. For hydraulic controls: Verify approximately one-half inch total freeplay before encountering resistance. With carb heat assist (if installed) locked and friction lever fully off, verify C334 friction (between rear seats) within freeplay range is 4-5 pounds average measured at grip. With friction lever fully on, verify 18-22 pounds measured at grip. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel. ____
7. Carb Heat Assist (if installed): With collective down and full carb heat, raise collective full up and verify carb heat off. Lower collective full down and verify carb heat full on. With collective friction off, push carb heat off and verify collective stays down. ____
8. Tail Rotor Pedals: Check for smooth operation with no binding. ____
9. Removable Controls: Verify security of attach fasteners. ____

2.205 Ground Check (cont'd)

10. Lighting and Instruments: (Master Switch on)
    a. CARBON MONOXIDE warning light flashes twice (if installed). ____
    b. Carb Air Temp approximately same as Outside Air Temp. ____
    c. ALT warning light on. ____
    d. Oil pressure warning light on. ____
    e. AUX FUEL PUMP warning light on (IO-540 only). ____
    f. Fuel quantity gages - indication of fuel level. ____
    g. Navigation and panel lights - check function. ____
    h. Strobe light - check function. ____
    i. Landing lights - check function (clutch switch must be engaged to check landing lights). ____
    j. Map light - check function. ____
    k. Ammeter - shows discharge. ____
    l. Oil temperature gage - slight needle deflection with engine cold. ____
    m. Cylinder head temp gage - slight needle deflection with engine cold. ____
    n. MR TEMP light - on when sender shorted or test switch depressed. ____
    o. MR CHIP light - on when sender shorted or test switch depressed. ____
    p. ENGINE FIRE light -- on when sender shorted or test switch depressed. ____
    q. TR CHIP light - on when sender shorted or test switch depressed. ____
    r. LOW FUEL light - on (slight delay is normal) when low fuel sender in tank is depressed with clean, non-sparking rod or when test switch depressed. ____
    s. FUEL FILTER light – on when test switch depressed (IO-540 only). N/A
11. Verify aircraft checklist laminated card is current revision (refer to Section 1.002). ____

2.210 Run Up

1. Perform POH Section 4 "Preflight" checklist. ____
2. Perform "Before Starting Engine" checklist. ____
3. IO-540 engine: Verify AUX FUEL PUMP light extinguishes during prime and illuminates after priming. Verify fuel drains from sniffle valve. N/A

> NOTE
> Significant prime may be required before fuel drains from sniffle valve. Wait for valve to stop draining before starting engine. Engine will be hard starting/flooded while valve is draining.

4. Perform "Starting Engine and Run-Up" checklist. If less than 15 minutes has elapsed since Step 3, use minimum or no prime. ____
5. Check clutch engagement time – maximum 70 seconds. ____
6. Ammeter indicates charge, ALT light off. ____
7. Both magnetos ground (off momentarily) at 60% RPM. ____
8. Tachometer operates with alternator and battery switches off. ____
9. No unusual bearing noise when varying RPM through operating range (mechanic to listen near V-belt drive). Refer to Section 2.110 and 2.501 thru 2.503. ____
10. Set RPM at 75%, governor on. Increase to 85%, release throttle, and verify governor increases RPM to 101 to 102%. Increase RPM to 104%, release throttle, and verify governor decreases RPM to 101 to 102%. ____
11. Engine and rotor tach needles within 1% of each other at 102% RPM. ____
12. Verify alternator voltage as follows: ____
    13.4 to 13.8 vdc for A942-3 alternator control unit
    27.75 to 29.25 vdc for A942-4 alternator control unit
13. Heater operates properly. ____
14. Tachometer needles do not jump more than 2% when transmitting on 118.00, 125.00 , and 136.975 MHz with governor on. ____
15. Raise collective control 0.5 inch at grip and slowly decrease RPM. Verify low-rotor-RPM warning horn and light activate at 97% to 96% RPM and remain on as RPM is decreased to idle. ____

2.210 Run Up (cont'd)

16. Idle RPM with engine warm, clutch engaged, throttle closed- ____
    O-540 engine: 53% - 57%
    IO-540 engine: 58% - 62% N/A
17. Idle mixture with engine warm, clutch engaged, throttle closed. ____
    O-540 engine: 2% to 4% RPM rise as mixture is pulled slowly to idle cut-off. Adjust idle mixture screw as required. If unable to obtain rise, set idle mixture screw 1½ turns out from fully in then adjust as required for smooth idle.
    IO-540 engine: Adjust idle mixture per Section 6.495, Step 23. N/A
18. Check hydraulic system (if installed) operation. Using cyclic- mounted hydraulics switch, turn hydraulics OFF. Using small longitudinal cyclic inputs, there should be approximately one-half inch of freeplay before encountering stiffness and feedback. Turn hydraulics ON. Controls should be free with no feedback or uncommanded motion ("motoring"). Complete flight check with hydraulics on. ____
19. Air Conditioning: Verify system blows cold air on both low and high settings. Verify no EMI/RFI with other instruments and systems. After a flight with air conditioning on, verify water drains from drain tube in ship's belly (may be little or no water in very dry conditions). N/A

s 22 [redacted]

TBOSM 4-10-14

2.220 Flight Check

1. Hover:
   a. All gages green. _____
   b. Controllability in left and right pedal turns. _____
   c. Cyclic electric trim (or hydraulics) zeros cyclic stick forces. _____
   d. Vibration levels satisfactory. _____
2. Level flight: Typical cruise altitude (if possible, deviate as required for weather and regulations), maximum continuous power, governor on.
   a. Vibration levels satisfactory. _____
   b. Cyclic electric trim (or hydraulics) zeros cyclic stick forces. _____
   c. Collective trim spring (electric trim system only) zeros collective forces. For hydraulic controls: Verify no feedback and collective is balanced. _____
   d. Fixed collective friction adequate to prevent "bounce" but not excessive (electric trim system only). _____
   e. Tail rotor pedal position when yaw string is centered: 0.25 to 0.75 inch right for adjustable pedals, within 0.25 inch of neutral for non-adjustable pedals. _____
   f. Tail rotor electric trim cord zeros pedal forces (cord applies left pedal force). _____
   g. For hydraulic controls: Turn hydraulics OFF and verify no excessive feedback forces. _____
3. Autorotate at 100 KIAS with station 99 or greater CG. Verify electric trim (or hydraulics) zeros cyclic stick forces. _____

2.230 Shutdown

1. Verify rotor brake functions and ROTOR BRAKE light illuminates. _____
2. Complete shutdown per POH checklist. _____

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2.300 AIRFRAME PREPARATION FOR 100HR/ANNUAL INSPECTION

Thoroughly clean airframe prior to inspection. Wipe down main and tail rotor blades, hubs, and airframe exterior with a mild soap and water solution.

CAUTION

Do not spray magnetos, main rotor hub, tail rotor gearbox vent, hydraulic reservoir vent, swashplate area, or bearing seals with high-pressure water or solvent as water or solvent may enter and cause corrosion and breakdown of lubricants.

2.400 100HR/ANNUAL AIRFRAME INSPECTION

NOTE

Numbers in parentheses indicate location as illustrated in Figures 2-4 and 2-4A.

CAUTION

If pop-out floats are installed, ensure safety on pilot's red inflation lever is in LOCKED position when working on helicopter.

WARNING

Pop-out float pressure cylinder contents are under extreme pressure. If pop-out floats are installed, install locking pin in pressure cylinder valve (see Figure 5-6) when working in forward left baggage compartment, during cylinder removal or installation, and when working on floats or inflation hoses. Remove locking pin when work is completed. Avoid excessive heat (>200 degrees F) as thermal relief valve will activate.

Perform 100 hour or Annual inspection per Section 2.410.

2.410 Inspection Procedures and Checklist

R44 Serial No.: 2514 Technician name: s 22
Registration No.: VH-UTV Technician
Hourmeter indication: 2069.7 Certificate number: 760877
Aircraft Total Time: 2069.7

1. Tail Rotor Pedal Bearing Blocks

NOTE

Do not remove pedal bearing block cover plates (1) unless function check of pedals indicates possible problem with pedal bearing blocks.

To remove cover plates (1) peel back carpeting and remove screws holding plates. Use an inspection light and mirror to inspect bearing blocks. Inspect for condition and looseness or play. Maximum allowable play is 0.080 inch axially and 0.030 inch radially. Inspect all weld areas in pedal controls. _____

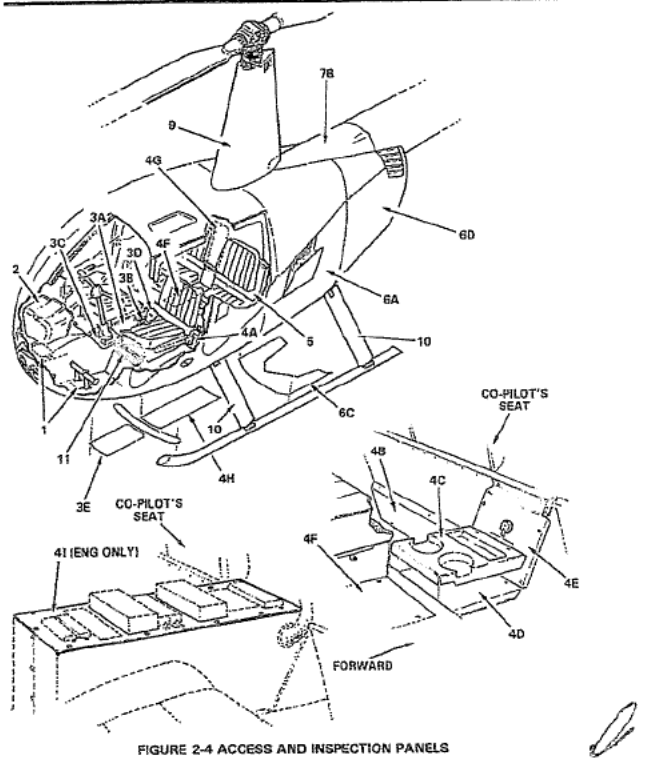

FIGURE 2-4 ACCESS AND INSPECTION PANELS

s 22

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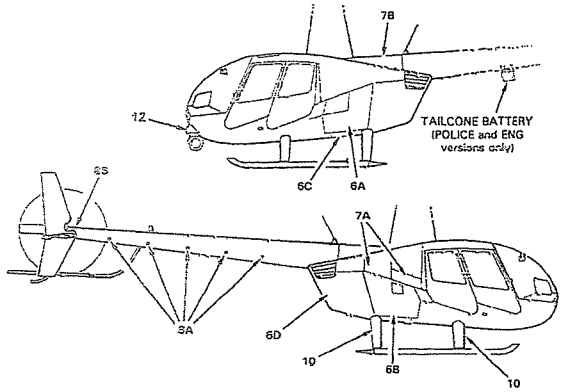

FIGURE 2-4A ACCESS AND INSPECTION PANELS

NUMBER	PART NUMBER	DESCRIPTION	NUMBER	PART NUMBER	DESCRIPTION
1	B189-4	Deflector (LH)	4I	D383-1	Face (ENG only)
	A412-2 and B189-2	Cover and Deflector (RH)	5	C003-10	Seat Back Assy (RH)
				C003-11	Seat Back Assy (LH)
2	3050	Console Assy	6A	C337-1	Cowling Assy (LH)
3A	C445-1	Cover Assy	6B	C378-1	Cowling Assy (RH)
3B	C445-3	Cover	6C	D041-1	Cowling Assy - Belly
3C	C444-1	Cover	6D	D040-1	Aft Cowling Assy
3D	C398-1	Cover Assy	7A	D042-4	Door Assy
3E	C794-1	Panel		D042-4	Door Assy
4A	C550-1	Cover Assy	7B	C708-1	Tailcone Cowling Assy
4B	C461-1	Cover	8A	A231-1	Plug Assy
4C	C464-1	Tray	8B	A558-2	Cover
4D	C463-1	Cover	9	C261-1	Mast Fairing Assy
4E	C054-1	Cover Assy	10	C082-2	Fairing Assy (FWD, RH)
4F	C474-2	Cover		C082-3	Fairing Assy (FWD, LH)
				C082-4	Fairing Assy (AFT, RH)
4G	C474-1	Cover		C082-5	Fairing Assy (AFT, RH)
4H	C794-2	Panel (without scoop)	11	C045	Circuit Breaker Panel
	C794-3	Panel Assy (with scoop)	12	D412-1	Fairing (Inframetrics
4H	C794-2	Panel (without scoop)	(Police	or	Camera)
	C794-3	Panel Assy (with scoop)	ships)	D347-1	Fairing (FSI Camera)

2.410 Inspection Procedures and Checklist (cont'd)

2. **Upper Console (2)**

Console (2), is opened by removing one screw on each side. With console open, inspect the following:

Pitot-Static System: Check pitot and static lines for cracking, chafing, pinching or kinking. Check all connections for security. _____

Flight and Engine Gages: Check all gauges for security. Inspect wiring and connections on all gages. _____

Radio Tray(s): Check condition and security. _____

Tail Rotor Controls: Check accessible portions of TR pedal assemblies for defects. Verify operating clearance. _____

3. **Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D), and Forward Belly Panel (3E)** _____

> **NOTE**
>
> If radio antennas are installed on removed panels, disconnect antenna lead and any ground wire. Pull respective radio circuit breaker and tag circuit breaker with "Antenna Removed".

Cyclic Box Assembly: Inspect cyclic box assembly for defects. Check cyclic stop sheet metal assembly for cracks and other defects (deterioration, distortion, loose rivets, corrosion). _____

Cyclic Stick Assembly: Inspect cyclic stick assembly for defects. Inspect welds for cracks. _____

> **CAUTION**
> (manual controls)
>
> Do not disturb clear silicone coating protecting strain gages, or attached wiring. Any damage to strain gages or wiring will disable trim system.

Cyclic Trim (manual controls): Turn master and cyclic trim switches on. Move cyclic laterally stop to stop and longitudinally stop to stop and check operation of trim motors. Check trim motors, springs and elastic cords for clearance from all wire bundles and fuselage structure during movement and at travel limits. NA

Cyclic Lateral Trim Actuator (manual controls): Turn master and cyclic trim switches on. Push and hold cyclic stick against right stop until motor stops then turn trim off. Move cyclic stick to left stop to compress spring. Inspect exposed portion of shaft for wear and galling. Do not grease rod on Rev H and subsequent C056-1 spring assemblies, bearing is self-lubricating. Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic pivot. NA

Cyclic Longitudinal Trim Actuator (manual controls): Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic stick. NA

2.410 Inspection Procedures and Checklist (continued)

3. **Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D) and Forward Belly Panel (3E) (continued)**

Cyclic Friction: Check for excessive play or looseness in links and rod ends connected to cyclic stick. Verify no excessive flaring at either end of C130-2 spacer. _____

Cyclic Push-Pull Tube and Torque Tube: Inspect C319 torque tube paying special attention to area around blocks and end of torque tube for cracks. Inspect C121-1 push-pull tube rod end palnut and jam nut for tightness. Check witness holes on push-pull tubes. Check rod ends and bearings for excessive play and looseness. Check accessible portions of cyclic push-pull tube and torque tube for defects, including scratches. Pay particular attention to top of torque tube immediately below C348-1 anchor assembly. Inspect all nuts and bolts in cyclic controls for rotation and looseness. _____

Tail Rotor Push-Pull Tube: Inspect accessible portions of C121-9 tail rotor push-pull tube. Look for defects such as cracks, bends, scratches, or chafing. Check rod ends for excessive play and looseness. _____

Collective Friction and Stop: Inspect collective stop condition; no nicks, cuts or scratches are allowed. Check collective friction lever for security and operation. Move collective up and down and verify no binding or binding at stop. Verify collective boot's lace cannot entangle stop. _____

Throttle Overtravel Spring: Inspect operation of overtravel spring while operating throttle. It should move freely without any binding or jerkiness. Check play in upper and lower rod ends. Check rod ends for binding. _____

Wiring Harness: Inspect for chafing and clearance from controls. _____

Pitot and Static Lines: Inspect pitot and static lines for security and any evidence of cracking, chafing, pinching or kinking from sharp bends. Open drains and check for moisture; close drains. _____

Elastic Trim Cord(s): With cyclic forward-right, feel forward elastic trim cord(s) for voids which may indicate broken strands. _____

Heater Hose: Check heater hose for collapsed areas and chafing. _____

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1. _____

4. **Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only)**

> **NOTE**
>
> If radio antenna is installed on removed panel, disconnnect antenna lead and corresponding ground wire. Pull respective radio circuit breaker and tag circuit breaker with "antenna removed".

2.410 Inspection Procedures and Checklist (continued)

4. **Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only) (continued)**

Collective Stick: Inspect condition of collective stick. Inspect all welds for cracks. Inspect C328-1 connecting rod assembly giving special attention to points of attachment. Inspect governor motor and governor motor arm for looseness or binding. Inspect collective-activated micro switch for cracks or loose wires. _____

Collective Stick Torque Tube: Verify no corrosion pitting. Apply a corrosion-preventative compound such as LPS 2, ACF-50, or Corrosion-X to any unpainted, phosphate-coated area while avoiding contaminating governor friction clutch (a foam-type applicator works well). Ensure interior of open-end "box" structures at inboard attach point and at A205 fork connection are also treated. _____

Aft End of Cyclic Torque Tube and Yoke Assembly: Inspect torque tube and yoke, paying special attention to area around blocks and end of torque tube for cracks. Check play in bellcrank bearings per Section 2.120. Inspect swaged bearing for movement in yoke. _____

Aft End of Cyclic Push-Pull Tube (C121-1) and Lower Ends of Vertical Push-Pull Tubes (C121-7): Inspect push-pull tubes for cracks. Check rod end jam nuts and palnuts for tightness and rod ends for play. Check rod end bearings for looseness. Inspect fork assembly areas. Check bearings for looseness. Check between bearings and swage for evidence of fretting. _____

Aft End of (C121-19) Tail Rotor Push-Pull Tube and Lower Bearing: Check witness hole. Check lower bellcrank bearing for play. Inspect all welds on support assembly for lower bellcrank and inspect surrounding sheet metal area for cracks. _____

Collective Push-Pull Tube (C121-19): Check for binding or nicks. Check witness holes. Check jam nuts and palnut for tightness and rod end for play. _____

Collective Friction Assembly: Check jam nuts and palnuts for tightness and rod ends for play. Inspect all welds on bellcrank support assembly and inspect surrounding sheet metal for cracks and corrosion. _____

Collective Spring Assembly (Manual Controls Only): Move collective up and down and verify no binding or cracking. Spring coils must not touch when collective is full down. Verify jam nut and palnut tightness. Verify rod ends play within limits. Verify guide rods are greased. If required by Section 1.101, service assembly per Section 8.221. NA

Throttle Control Linkage: Remove throttle control arm cover if cover is not transparent (under aft left seat [O-540], or inside tunnel [IO-540], at firewall). Inspect condition. Verify throttle control clearance to installed equipment and adjacent structure. Verify proper installation and security. Install cover. _____

Fuel Valve and Fuel Line: Inspect fuel line for damage and valve fittings for leakage (leakage is indicated by a blue or green residue, depending on fuel used, or odor of fuel). Verify no chafing of fuel lines. _____

Fuel Valve-to-Knob Torque Tube: Inspect condition. Verify attaching security. _____

2.410 Inspection Procedures and Checklist (continued)

5. Remove Aft Seat Back Assemblies (5)

Wiring: Check wiring for security and proper installation. _____

Pitot and Static Lines: Check for security, chafing, and kinks. _____

Air Conditioning Refrigerant Lines (if installed): Verify security & no damage. NA

Evaporator Drain Tubes and Valve (if installed): Verify tubes are unobstructed. Place a container under sediment-tube protruding from bottom of tee-fitting into right-aft baggage compartment. Remove plug from sediment tube and allow any accumulated moisture and debris to drain. Reinstall plug. Simultaneously squeeze drain tube and sediment tube near tee-fitting and verify check-valve ball moves up momentarily. NA

Strobe Power Supply & Alternator Control Unit: Inspect strobe power supply and alternator control unit wiring. Inspect mounting panels for cracks. _____

Blind Encoder & Governor Controller: Inspect blind encoder and governor controller wiring. Inspect mounting panels for cracks. _____

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1. _____

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings

Vertical Firewall: Inspect vertical firewall condition, especially around structural attachment points, verify no cracks, buckling or wrinkles. _____

Fuse(s) and Fuse Holder(s) (if installed on vertical firewall): Verify security and no corrosion. Verify correct fuses: -66 wire requires AGC-3 fuse, -1601/-1602 wires require AGC-5 fuse. If installed, -1226 wire requires AGC-3 fuse. _____

Wiring: Verify security, proper installation, and no deterioration. _____

Electric Fuel Pump (IO-540 only): Verify security, proper installation, unobstructed drain tube, and no leakage. NA

Fuel Line & Hose(s): Inspect condition. Verify security, proper installation, no leakage, & (IO-540 only) good condition of spirap insulation on fuel line between firewall & gascolator. If deteriorated, replace MS3367-5-9 ty-raps securing fuel hoses to clamps (reference R44 SB-67). _____

Lower Steel Tube Frames: Thoroughly inspect lower steel tube structure for corrosion and inspect all welds for cracks. Ensure frames are not chafed by wires, hoses, clamps, etc. _____

Engine Cooling Panels: Inspect cooling panels for cracks and missing fasteners. _____

Oil Cooler(s): Inspect oil cooler(s) and fittings for damage, leaks, cleanliness, and security. Check oil cooler mounting area(s) for cracks. _____

2.410 Inspection Procedures and Checklist (continued)

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings (continued)

Oil Lines: Inspect entire length of all oil lines and verify no cracks, abrasion, or broken clamps. Verify clearance; wires, ty-raps, and structure must not contact lines. _____

Gascolator: With fuel valve off, remove and clean gascolator bowl and filter screen. Verify no deterioration of gasket. If gascolator bowl is secured by threaded collar and ring, lightly lube threads and ring with A257-6 grease. Reassemble and turn fuel valve on. Safety wire after ensuring no leaks occur. Verify drain valve is secure and torque-striped. _____

Mixture Control: Verify mixture control moves mixture control arm stop to stop. Inspect condition and verify security of mixture control cable clamps on bracket; push and pull cable housing to ensure it does not slip in clamps. Inspect condition and verify security of mixture control cable inner wire attachment to mixture control arm. Ensure freedom of rotation between mixture control arm and inner wire retention fitting (bolt) when arm moves. Verify mixture control safety spring is properly installed (so spring force holds mixture control arm at full-rich position if inner wire breaks). _____

Throttle Correlation Rigging: Check per § 10.150 and adjust as required. _____

Full-Throttle Switch Rigging: Check per § 37-70 and adjust as required. _____

Air Box & Alternate Air Door: Ensure carburetor heat slider valve (if applicable) moves fully from stop to stop. Replace air filter (lubricating IO-540 air filter rubber with A257-8 rubber lubricant will facilitate sealing). Check air box for condition and security. Verify spring-loaded alternate air door opens without binding and closes completely. _____

Engine Air Inlet Hose: Verify correct installation & security. Verify no rips, holes, or collapsed areas. Ensure hose is not chafing frame. Remove hose. Visually inspect inside of hose to verify no separation between outer and inner layers. Also, flex the hose in all directions and listen for a crinkling sound, which is an indication of separation. (An airworthy hose does not make a crinkling sound when flexed.) Replace any hose with any indication of separation. _____

Carburetor Heat Scoop and Hose (IO-540 engines only): Inspect for condition and security. _____

Heater Hose: Inspect for condition and security. _____

Battery and Battery Box (alternate locations under upper console or under left, front seat): Check cable terminals for cracks. Check each cell electrolyte for quantity and specific gravity if equipped with non-sealed battery. As required, perform capacity test per manufacturer's instructions or replace battery. Verify security and no obstructions in drain tube. _____

2.410 Inspection Procedures and Checklist (continued)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9)

Cowling Door: Inspect hinges and latches for condition and security. _____

Tailcone cowling: Verify no cracks, air inlet obstructions, or loose rivets. _____

Electrical and Antenna Wires: Inspect condition. Verify security and no chafing, kinks or tight bends. _____

MRGS Input Yoke: Inspect condition. Verify security and operating clearance. Verify security of magnets. _____

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2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Forward Flex Plate: Inspect condition, particularly edges. Verify security. Verify bonded washers are securely bonded to both sides of each flex plate arm. Verify operating clearance.

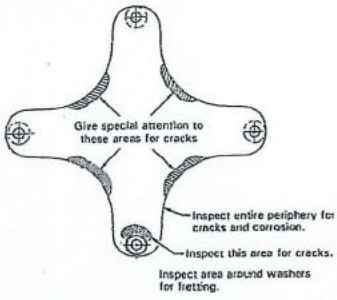


FIGURE 2-5 FLEX PLATE INSPECTION

Clutch Shaft Forward Yoke: Inspect condition. Verify no cracks, corrosion, or fretting. Verify security and operating clearance.

Rotor Brake: Inspect condition, including activating cable & pulleys and microswitch. Verify integrity of brake pads and 0.030 inch minimum pad thickness. Verify brake pad clearance to input yoke when brake is off. Verify security and operating clearance.

Jackshaft: Inspect entire welded assembly for cracks and corrosion. Inspect jackshaft supporting strut and tube weldments for security, cracks and corrosion.

Main Rotor Push-Pull Tubes: Inspect condition of viewable portions. Verify no cracks at ends. Inspect rod ends per Section 2.120. Verify no tears in sleeves (manual controls only). Verify security and operating clearances.

Main Rotor Push-Pull Tube Rollers & Bushings: (manual controls only): Inspect condition. Verify cleanliness, no wear into metal, and free movement of rollers. NA

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Tail Rotor Push-Pull Tube and Upper Bellcrank: Inspect C121-15 push-pull tube, especially at ends, for cracks. Check jam nut for tightness and rod end for looseness. Inspect bellcrank and mounting for cracks or other defects.

Main Rotor Gearbox Cooling Hoses: Inspect both ends for security. Inspect for rips, holes, and chafing.

Main Rotor Gearbox: Inspect main rotor gearbox, especially around gearbox mounts, cap mounting lugs, and mast tube for cracks. Verify no contamination and no deterioration of rubber mounts. Verify security of Hall Effect senders. Check Telatemp for overtemp indications.

Main Rotor Gearbox Oil: With ship on level ground, verify correct oil level and cleanliness using sight gage. If required by Section 1.101, drain and flush gearbox per Section 1.120.

Main Rotor Gearbox Chip Detector: If required by Section 1.101, clean chip detector per Section 1.115.

Upper Steel Tube Frame: Use an inspection light and mirror to inspect each weld, verify no cracks or corrosion.

> **CAUTION**
>
> Upper steel tube frame is fatigue-loaded and therefore susceptible to fatigue cracks. Inspect thoroughly.

Horizontal Firewall: Inspect upper and lower surfaces of horizontal firewall, especially where bolted to steel structure, for cracks, buckling, or wrinkles. Inspect firewall under fuel tank for leakage (fuel residue).

Fuel Tanks: Inspect condition of visible portion. Verify no leaks. Verify security.

Auxiliary Fuel Tank Fuel Line: Inspect condition. Verify clearance to structure. Verify no leakage. Verify security.

Fuel Return Lines & Pressure Relief Valve (IO-540 only): Inspect condition. Verify no leakage. Verify security. NA

Fuel Gage Senders & Wiring: Inspect condition. Verify no leaks.

Fuel Tank Vents: Check vent tube connections for security.

Fuel Tank Sump Drains: Verify both drain valves open easily, drain fuel freely, spring closed, and seal completely. Verify D683-1 shut-off clamp on aux tank drain tube seals completely, and inspect clamp and tube for damage and deterioration.

Low Fuel Warning: Turn MASTER switch on. With a clean wooden dowel, gently depress low-fuel sender float in main fuel tank and verify LOW FUEL warning light illuminates. Turn MASTER switch off.

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Fuel Caps: Inspect condition, to include gasket. Verify security when closed. Verify alignment marks on cap and tank align when cap is fully closed.

Nuts and Bolts: Inspect all nuts and bolts in this area for movement and looseness.

Cabin Bulkhead & Forward Hydraulic Servo Mounts: Inspect bulkhead and servo mounts (if installed) for corrosion, loose rivets, deformation and cracks.

Clutch Assembly: Inspect ends of drive shaft and seals on sheave for oil leakage. Inspect shaft for corrosion, especially at shaft-to-seal junctures. Remove any light surface corrosion at shaft-to-seal junctures, and apply a suitable corrosion-inhibitor.

Upper Sheave: Inspect sheave grooves. Replace any sheave showing corrosion pitting or flaking of metalized or anodized coatings, wear through anodized coatings, roughness, or sharp ridges.

Drive V-Belts (see Section 2.507): Inspect V-belts. Verify no breakage, deterioration of rubber, cuts, fraying, oil, grease, or foreign objects.

Actuator Fuses & Holders: Inspect condition. Verify no corrosion. Verify correct fuses (14-volt systems require AGC-3 fuses while 28-volt systems require AGC-1½ fuses). Verify twist-to-lock function and security.

Actuator Upper Bearing and Strut: Inspect seals on both sides of bearing for damage. Inspect strut, including both rod ends, and check witness holes. Check for fretting between bearing inner races and clutch shaft. Bearing inner races should be torque striped to clutch shaft. If stripes are broken or misaligned, shaft is unairworthy. Check bearing Telatemp. Perform bearing inspection per Section 2.503 if Telatemp indication has increased without corresponding increase in ambient temperature.

Actuator Lower Bearing: Inspect as much of bearing as can be seen. Inspect fiberglass scroll area at bearing attachment brackets for signs of cracking. Check bearing seals for evidence of deterioration. Inspect lower bearing brackets for looseness or wear. Inspect bearing per Section 2.502 if discrepancies are found

Intermediate Flex Plate and Forward End of Tail Rotor Drive Shaft (see Figure 2-5): Inspect flex plate for cracks and fretting. Inspect yoke-to-drive shaft weld for cracks (steel shafts).

Tailcone Attachment: Thoroughly inspect all welds in this area for cracks, corrosion, and security of attaching fasteners. Inspect tailcone mounting area for cracks.

2.410 Inspection Procedures and Checklist (cont'd)

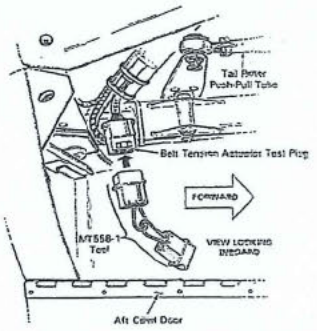
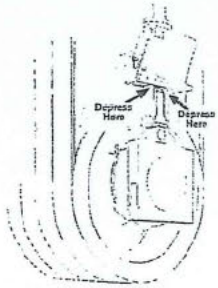


FIGURE 2-6 MT558-1 TOOL INSTALLATION



NA

FIGURE 2-6A ACTUATOR SWITCH TEST

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2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Actuator (C051): Verify clearance to structure and drive train when fully disengaged. Turn master switch on and engage clutch switch. While actuator is engaging, depress extension limit switch lever (see Figure 7-15) and verify gearmotor stops; release lever and verify gearmotor resumes running. Verify integrity of activating cable for extension limit switch. Use an inspection mirror to observe column springs at end of belt-tensioning cycle; springs should snap outward simultaneously. Verify maximum engaged extension limit per Figure 7-15 is not exceeded. Verify clearance to structure and drive train when fully engaged. Verify down-limit stop screw jam nut is tight. _____

Check actuator for failed-closed spring switch using either of the following two methods: _____

Method 1 - (actuator electrical harness must be equipped with "Test" plug per Figure 2-6)

a. With MASTER switch on and actuator fully engaged, connect one end of MT558-1 tool to actuator test plug and verify gearmotor remains off. _____

CAUTION
If gearmotor activates when installing MT558-1 tool then a spring switch has failed in closed position; immediately remove MT558-1 to prevent actuator damage.

b. Disconnect MT558-1 tool, connect opposite end to actuator test plug, and verify gearmotor remains off. _____

c. Disengage clutch and turn MASTER switch off. _____

d. MT558-1 pins 1-2 jumper tests wire 98 spring switch; pins 2-3 jumper tests wire 91 spring switch (see Figure 14-1D). Replace any malfunctioning switch per Section 7.551 before further flight. _____

Method 2 - (actuator electrical harness without "Test" plug)

a. ~~Refer to Figure 2-8A. With MASTER switch on and actuator fully engaged,~~ depress column springs on one side of actuator until springs snap inward (use large screwdriver or similar tool with several layers to tape over end to protect actuator). Hold springs inward ~~for at least one second~~. Actuator motor should ~~not run. If motor starts,~~ allow motor to run approximately two ~~seconds,~~ then release pressure on column springs. Depress and hold column springs again. ~~If motor starts again, opposite spring switch does not function properly.~~ _____

b. Disengage and re-engage actuator. ~~Repeat~~ Step a. on opposite side column springs. _____

c. Replace any non-functioning switch per Section 7.551 before further flight. _____

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Lower Drive Sheave: Inspect lower sheave. Replace any sheave showing corrosion pitting or flaking of metalized coating, wear grooves, roughness, or sharp ridges. _____

Sheave Alignment: Verify sheave alignment per Section 7.230. Adjust as required. _____

Hydraulic Reservoir: Inspect condition. Verify security and no significant leakage. If required by Section 1.101, replace filter per Section 1.170. Drain and flush hydraulic system per Section 1.180 if oil has turned dark or emits bad odor. Add fluid as required. _____

CAUTION
Cleanliness of hydraulic fluid is vital to proper system operation. Use only clean fluid from sealed containers and avoid contamination from dirty funnels, tubing, etc.

Hydraulic Reservoir Cooling Hose: Inspect condition. Verify hose is secure and is directed at center of reservoir cooling fins. _____

Hydraulic Pump: Inspect condition. Pump temperature indication should not exceed gearbox temperature indication. Verify security and no significant leakage. _____

Forward Hydraulic Servos: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Inspect condition and verify security of scissors at upper clevis of servos. _____

CAUTION
Use LPS PreSolve to clean hydraulic parts. Do not use alcohol.

Aft Hydraulic Servo: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage.. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. _____

Aft Hydraulic Servo: Inspect rod ends per Section 2.120. Inspect attachment to sheet metal, verify no cracks. Verify security. _____

Hydraulic Lines & Fittings: Inspect condition. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Verify security and no leakage. Verify minimum 0.25 inch clearance between pump hoses and aux fuel tank. _____

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1. _____

2.410 Inspection Criteria (cont'd)

8. Remove Tailcone Plugs (8A) & Aft Plastic Cover (8B)

NOTE
Aft plastic cover (8B) is secured with two MS27039C0805 screws on Rev L and subsequent tailcones. On Rev K and prior tailcones ensure screws securing plastic cover are short enough to prevent interference in aft flex plate area.

Tail Rotor Drive Shaft: Inspect condition of that section of shaft that can be seen through each hole, looking for obvious defects such as cracks, bends, bows in shaft or corrosion or contact with inside of tailcone. Check runout per Section 7.340. Inspect each end of drive shaft for cracks and corrosion. _____

CAUTION
Bends, bowing, dents, cracks and corrosion are cause for immediate replacement of tail rotor drive shaft.

Damper: Inspect tail rotor drive shaft damper (C041-1). Inspect bearing and housing for cracks, corrosion, wear (see Figure 2-8), and bearing seal deterioration. Inspect arms and bearings for cleanliness, cracks, bends and corrosion. Inspect bearing's inner race-to-drive shaft torque stripe. _____

Tailcone Exterior: Inspect tailcone exterior for nicks, scratches, corrosion, fretting between skin joints, loose rivets and dents. Inspect tailcone for cracks in vicinity of antenna mounts and battery (if installed on tailcone). _____

Strobe Light: Inspect lens and strobe light mount for cracks, loose rivets, and security. If split red/clear lens is installed, verify clear half of lens faces aft. _____

Antennas: Inspect all antennas for condition and security. _____

Tailcone Battery (if installed): Inspect tailcone-mounted battery condition and security. Verify no debris between battery box cover and tailcone. N/A

Tailcone Interior: Inspect tailcone interior, especially around rivets, for cracks, fretting, and corrosion. _____

Tailcone Attachment: Inspect condition and security of four bolts attaching tailcone to upper frame. _____

Empennage: Inspect entire empennage and attachment points for damage, cracks, and loose fasteners. Check tail skid for evidence of tail strike. If evidence of tail strike is found, refer to special inspection section. _____

Float Stabilizer (if installed): Inspect condition and security. N/A

Aft Flex Plate (See Figure 2-5): Inspect flex plate for cracks, fretting, and distortion. If fretting is detected, contact RHC Technical Support. Inspect security of flex plate fasteners. _____

Tail Rotor Drive Shaft Aft Yoke: Using inspection hole, check yoke for cracks, fretting, and corrosion. _____

Tail Rotor Guard: Inspect for security. Check forward mount for cracks around welded area. Inspect area around aft mount for cracking and fretting. _____

2.410 Inspection Criteria (cont'd)

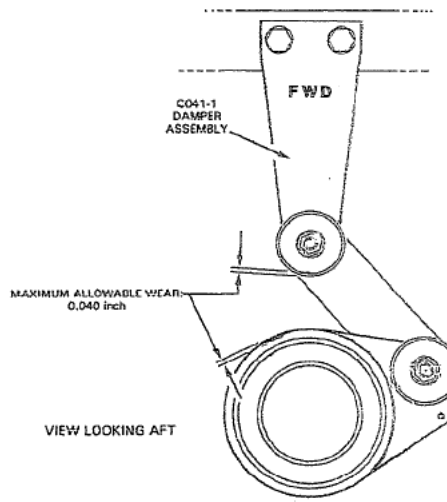

FIGURE 2-8 TAIL ROTOR DRIVE SHAFT DAMPER BEARING INSPECTION

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2.410 Inspection Procedures and Checklist (continued)

9. Tail Rotor Gearbox and Tail Rotor

Input Shaft Yoke: Inspect flange and weld for cracks and corrosion. _____

Input Seal: Inspect for leakage. _____

Gearbox: Inspect general condition. Look for leakage. Check oil quantity and cleanliness through sight gage and adjust or flush as required. Check gearbox-to-tailcone mounting security. Inspect output shaft for nicks, scratches and corrosion. Check safety wire on applicable gearbox bolts. Check Telatemp. _____

> **NOTE**
>
> At 500 hours time-in-service or annually, whichever occurs first, remove chip detector and clean varnish from detector's magnetic probe and adjacent metal body (a toothbrush dampened with solvent works well). Also, drain and flush gearboxes at intervals not to exceed 500 hours time-in-service (refer to Section 1.101).

Pitch Control Assembly and C121-17 Push-Pull Tube: Check pitch control assembly for free movement throughout its entire range and for looseness on output shaft (0.25 inch maximum rotational play measured at pitch link attach bolt). Inspect bellcrank for cracks and ensure free movement. Pay special attention to spherical bearing atop stud protruding from underside of pitch control; it is permissible to have a single radial crack in the spherical bearing ball. Inspect aft end of C121-17 push-pull tube for cracks and check rod end for excessive looseness (refer to R44 SB-43A). _____

Pitch Links: Check rod ends for excessive looseness. If equipped with one-piece pitch links, disconnect and rotate inboard end outboard as required to obtain maximum service life. _____

Tail Rotor Blades: Inspect blade surfaces for excessive erosion, nicks, scratches, cracks, and corrosion. Check tail rotor blade root fitting bearings for fretting and looseness. Loose bearing outer race in root fitting is unairworthy, requiring replacement of blade. C029-1 blades only: remove tip covers, inspect for debris and corrosion, & reinstall covers. C029-1 or C029-2 blades only: Inspect tail rotor blades for fatigue cracks per R44 SB-83. Refinish blades per Section 9.460 if excessive erosion is found. _____

Hub Plates and Hub: Inspect for cracks and corrosion, paying special attention to areas around blade and hub mounting bolts. Ensure teeter hinge bearing outer races move with hub and bearing inner balls and retaining nut and bolt remain stationary when hub is teetered. Hub should move freely on bearings without stiffness or jerkiness. Check teeter hinge bearings for excessive play. For elastomeric bearings inspect per Section 2.125. _____

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1. _____

2.410 Inspection Procedures and Checklist (continued)

10. Open Mast Fairing (9)

Mast Fairing: Inspect condition, especially where stiffeners intersect ribs. _____

Lower Swashplate Scissors: Inspect condition of scissors. Check rod end and bearing play. Check jam nut. _____

Vertical Push-Pull Tubes: Inspect for general condition and corrosion. For manual controls, inspect push-pull tube sleeves at rollers and guide. _____

Rod Ends: Check push-pull tube rod ends per Section 2.120. _____

Plastic Rollers and Guide (manual controls): Inspect plastic rollers and guide for cleanliness, security, and deterioration. NA

Pitot Tube: Inspect pitot line and tube, giving special attention to connecting area, for bending, cracking and kinking. Verify pitot tube elbow drain hole is unobstructed. _____

Fuel Tank Vents: Inspect condition and security of fuel tank vent tube clamps. Ensure pitot line is not chafing fuel vent tubes. Check tube connections. Verify tubes are unobstructed and are not kinked, pinched, or chafing. _____

Mast Fairing Ribs: Inspect for cracks especially around mast tube attachments. _____

11. Rotor Hub Area

Swashplate Lower Scissors: Inspect condition. Inspect rod ends per Section 2.120. Verify security. _____

Swashplate Upper Scissors: Inspect condition. Inspect rod ends and spherical bearings per Section 2.120. Measure scissors play per Figure 2-9. Observe scissor linkage while having someone raise and lower collective. Verify bolt, journals (or spherical bearing balls and spacers), and arm rotate together at each scissor linkage pivot. Verify operating clearance. _____

Swashplate Slider Tube: Inspect condition. Verify no cracks at rivet holes or corrosion on base. Verify no damage to, or wear through, anodized tube surface. _____

Remove Swashplate Boot Lower Ty-rap: Lift boot from swashplate. Using an inspection mirror, inspect area between main rotor drive shaft and inside of slider tube. Verify no corrosion and no debris. Verify no boot damage. _____

Swashplate: Inspect condition. Verify 0.020 inch maximum radial play between swashplate ball and slider tube. Rotate rotor by hand and verify operating clearance and no rough or dry bearings. _____

Swashplate Tilting Friction: Observe swashplate ball from below and have someone move collective stick slowly up & down. Verify swashplate ball immediately moves with swashplate when swashplate reverses direction. Movement of swashplate without attendant ball movement indicates axial play between ball and swashplate; adjust swashplate tilting friction per Section 8.413. _____

2.410 Inspection Procedures and Checklist (continued)

11. Rotor Hub Area (continued)

Install Swashplate Boot Lower Ty-rap: Verify correct boot position and security and no boot damage. _____

Hub: Inspect condition. Verify no nicks, scratches, gouges, or corrosion. If main rotor imbalance is suspected, check teeter and coning hinge friction per Section 9.124. Verify no brown or black residue (indicates bearing wear). _____

Hinge Bolts: Inspect condition. Verify cotter pins are in place and secure. Verify bolt heads and nuts are torque striped to thrust washers. _____

Pitch Links and Rod Ends: Inspect condition. Inspect rod ends per Section 2.120, including centering. Verify security, including jamnut tightness and proper safety wiring. _____

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1. _____

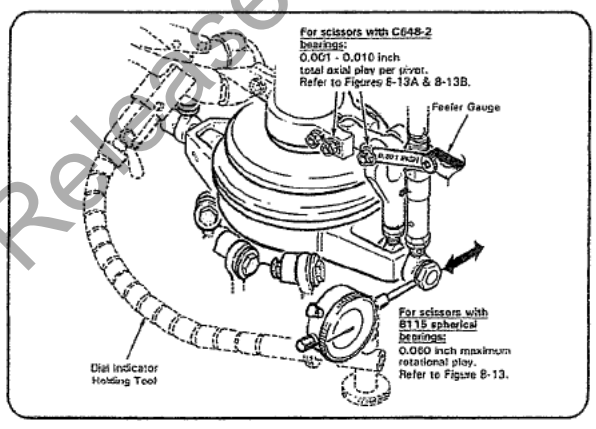

FIGURE 2-9 MEASURING UPPER SWASHPLATE ROTATIONAL PLAY
(Identify scissors bearing type and measure as shown)

2.410 Inspection Procedures and Checklist (continued)

12. Main Rotor Blades

Boots: Inspect condition. Verify no boot damage or oil leakage. Verify proper boot position and security. Verify sufficient clearance from hub assembly through full control travel. _____

Blade Spindles & Root Fittings: Inspect area for damage per § 9.133. Verify proper installation and security of visible fasteners. Renew deteriorated torque stripes per Figure 2-1. _____

C016-7 Main Rotor Blade Inspection: Remove tip covers. Remove corrosion and loose paint from tip covers, blade tips, and skin-to-spar bond lines. Epoxy prime, or prime and paint, any exposed bare metal on tip covers, blade tips, and skin-to-spar bond lines. Using an AN970-4 washer or 1955-or-later U.S. quarter-dollar coin, tap-test critical bond areas and verify no dull or hollow sounds. Visually inspect critical bond areas and verify no separation. Install tip covers, ensuring cover edges are flush with blade profile. _____

C016-2 or C016-5 Main Rotor Blade Bond Inspection: Perform R44 SB-72A or subsequent. N/A

Main Rotor Blade Inspection: Inspect skins and doublers for scratches and corrosion per § 9.131. Inspect blades for dents and local deformations per § 9.132 and for voids per § 9.134. As required, wax blades with soft cleaning cloths using carnauba-type wax (such as SC Johnson® Paste Wax). Ensure tip cover and blade tip drain holes are unobstructed. _____

> **WARNING**
>
> Structural damage may occur if compressed air is applied to blade tip drain holes.

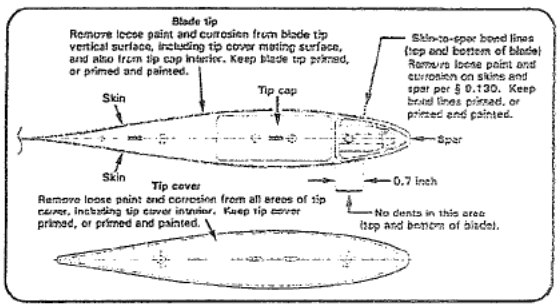

FIGURE 2-10 MAIN ROTOR BLADE TIP AND TIP COVER

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2.410 Inspection Criteria (cont'd)

12. Main Rotor Blades (Refer to Section 9.130 for damage and repair limits) (cont'd)

Install tip covers: Verify security. ____

Fasteners & Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1. ____

13. Scroll Area

Fanwheel Assembly: Clean and inspect fanwheel assembly for cracks and corrosion. Check leading edge of vanes for damage. Verify spring pin and fanwheel alignment marks are aligned (see Figure 2-11); remove fanwheel and inspect mating surfaces for damage if misalignment is evident. ____

Fiberglass Scroll: Inspect fiberglass scroll for cracks and contact marks from fanwheel. Inspect flexible seal around scroll inlet for any rips or damage. Inspect vane assembly in right upper scroll for damage. Verify drain hole is unobstructed. ____

Scroll Metal Inlet Lips &Gap: Verify 0.030 / 0.090 inch gap between lips and fanwheel inlet (elongate tip attach holes as required to adjust gap). ____

14. Engine

Refer to Section 1.101. Refer to Lycoming Operator's Manual (P/N 60297-10 sections 4 and 5), Lycoming SI 1080B, and applicable engine component manufacturer's maintenance publications for 100-hour or annual inspection and service procedure. ____

Engine Cooling Panels: Inspect condition. Pay particular attention to panel(s) mounting oil cooler(s) and panel attached to alternator cooling hose. Verify no cracks or missing or loose fasteners. Verify security. ____

Alternator & Pulley: Inspect condition. Verify steel pulley (use magnet); aluminum pulley is not approved. Verify security. Verify electrical wiring security. ____

Alternator Belt: Inspect condition. Replace belt if there are any cracks, missing teeth, or delamination. Check tension per Lycoming Service Instruction 1129 (latest revision). Verify proper belt alignment. ____

Emergency Spare Alternator Belt: Remove if installed. N/A

Alternator Cooling Hose: Inspect condition. Verify no obstructions or holes. Verify security. ____

Air Conditioning Refrigerant Lines (if installed): Verify security, no damage, and clearance to adjacent structure. Verify dust caps installed on servicing fittings at vertical firewall. N/A

Air Conditioning Compressor (if installed): Verify security. N/A

Air Conditioning Compressor Drive Belt (if installed): Inspect condition. Verify 4.5/5.5 pounds force applied at mid-span of belt causes 0.11/0.17 inch belt deflection; adjust as required. N/A

Muffler Elbow & Tailpipe Shields: Verify no cracks in shields and shield attaching brackets. Verify clamp security. ____

2.410 Inspection Criteria (cont'd)

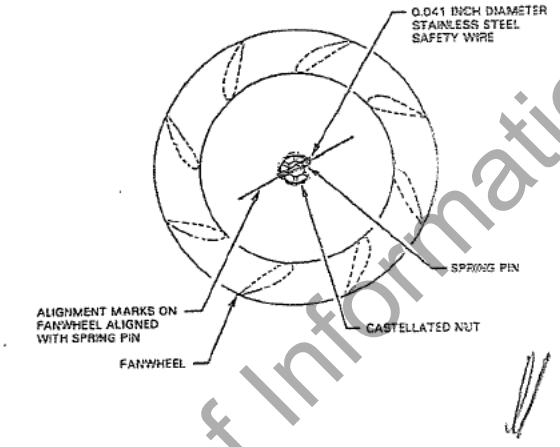

FIGURE 2-11 FANWHEEL ALIGNMENT MARKS

2.410 Inspection Procedures and Checklist (cont'd)

15. Exhaust System

Remove muffler heater shroud screws, and open shroud. Inspect muffler outer wall for cracks, deformation, and ruptures. Pay particular attention to tailpipe and riser attachment areas, welds, clamps, supports, riser flanges and gaskets. Pressurize muffler with low pressure air and inspect for leakage. Close and secure heater shroud. ____

16. Landing Gear

Skids and Shoes: Inspect left and right landing gear skids and skid shoes; minimum allowable shoe thickness is 0.05 inch. Verify drain holes are open (not applicable to float landing gear). ____

Struts and Elbows (open fairings if installed): Inspect for cracks and corrosion, especially at elbow joints. Inspect weld area at bottom of strut for cracks. ____

Landing Gear Fairings (if installed): Inspect for cracks and loose rivets. Verify security. ____

Crosstubes: Inspect, especially at elbow joints, for cracks and corrosion. With helicopter on level ground, measure distance from ground to tail skid. If dimension is less than 30 inches, one or both cross tubes must be replaced (see Section 5). ____

Landing Gear Attach Points: Check forward attach points for loose rivets, cracks, bucking, and fretting. Check bearing mounts for loose swages and worn bearings. ____

Utility Floats (if installed): Inspect for damage. Refer to Pilot's Operating Handbook for proper inflation pressure. N/A

Pop-out Floats (if installed) Pressure Cylinder & Valve: Inspect condition. Verify security. Verify pressure gage indicates correct pressure for ambient temperature; refer to placard on cylinder for limits. N/A

Pop-out Floats (if installed) Inflation Manifold: Inspect condition. Verify no chafing or pinching of hoses, especially where hoses pass thru structure. N/A

Pop-out Floats (if installed): Inspect condition of stowed floats. Verify no holes, cuts, tears, abrasion thru, or unraveling of, float covers. If cover damage is found, inflate and inspect floats. Verify all float cover snaps and hook-and-loop fasteners are properly secured. Verify float-to-skid attachment security. N/A

NOTE

Annually apply A257-7 dry-film lubricant (see Section 1.470) to float cover snap mating surfaces. Annually perform Section 5.630 leak check. Every three years, perform Section 5.640 emergency inflation test.

2.410 Inspection Procedures and Checklist (cont'd)

17. Cabin

Verify no loose equipment that might foul controls. ____

Static Ports: Inspect static ports for obstructions. If fixed utility floats are installed, verify air dam installed aft of both static ports. ____

Rear Seat-Bottom Suspension Straps: Inspect condition and security. ____

Seat Belts and Shoulder Harnesses: Inspect for fraying and broken stitching. Check inertia reels for proper operation by pulling harness quickly to verify locking function. Check buckles for proper operation. Check belt and reel attach points for security. ____

NOTE

TSO tag not required on factory installed harnesses.

Trim Controller (Manual flight controls only) : Adjust trim controller per Section 14.710. N/A

Windows: Minor damage that does not impair pilot's visibility or indicate impending structural failure is acceptable. For cracks and crazing adjacent to windshield retainer strips, refer to Section 2.580. ____

Acceptable damage includes:

a. One nick, not more than 0.010 inch deep and occupying an area not larger than 0.25 by 0.50 inch per square foot. ____

b. Scratches not more than 0.010 inch deep and 5 inches long. ____

c. Any surface defect such as small spots or stains that can be removed with light polishing. ____

d. Minor polarization faults in small areas of windshield near edges. ____

Skin: Inspect skin for damage. Inspect for loose rivets, indicated by cracked paint and/or black residue around heads. ____

Doors: Inspect for cracks around hinges and latches. Check vents for operation. Ensure hinge pins are secured with cotter pins. Check tightness of hinge mounting screws. Verify proper operation of door latching and locking mechanisms. ____

Chin Drains (R44 Clipper): Verify no obstructions. N/A

18. Special Equipment (if installed)

Peak Beam Searchlight: Check for proper operation. Align beams by focusing both lights to smallest spot possible and shining against a wall at least 100 feet away. Verify both spots hit same point within one foot. N/A

Nose Gimbal and Monitors: Turn power on and verify infrared units complete cool down sequence in manufacturer's recommended time. Verify gimbal steers smoothly in azimuth and elevation. Check focus and zoom of infrared/video. Check for clear images on monitors. Verify retractable monitor retracts without interference. N/A

s 22 [redacted]

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4-10-19

2.410 Inspection Procedures and Checklist (continued)

18. Special Equipment (if installed)

Spectrolab Searchlight: Verify light starts and cooling fan operates. Verify searchlight steers smoothly in azimuth and elevation. For slaved units, turn on slaving and verify light follows nose gimbal approximately. NA

FM Radios: Verify radios transmit and receive properly and control head programs radios properly. NA

Video Tape Recorder: Verify all video tape recorder modes operate properly and remote control correctly controls modes. NA

Overhead Light: Verify overhead light on/off. NA

Transmit and Intercom Switches: Verify proper operation of special transmit and intercom switches. NA

Talent Light: Verify talent light on/off, acceptable friction. _____

Micro Cameras: Verify all micro cameras are selectable from video switcher and produce focused, upright images on monitors. NA

TV Tuner: Verify TV tuner receives broadcasts (video clear on monitors, audio clear in headset). NA

Microwave Antenna: Verify omnidirectional microwave antenna extends/retracts properly. Verify up/down indicator lights function properly. NA

Electromagnetic and Radio Frequency Interference: With all special equipment turned on, check for EMI/RFI with tach, COM, intercom, compass, or other systems. NA

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs

Life-Limited Parts: Replace life-limited parts that have reached maximum service life per § 3.300. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations. _____

Component Overhaul: Replace components that have reached maximum service before overhaul per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations. _____

Component Retirement: Replace components that have reached maximum service life per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations. _____

Airworthiness Directives: Verify applicable airframe, engine, and accessory Airworthiness Directives (ADs) have been performed according to AD compliance procedures. Some aircraft may be affected by ADs that require recurring inspections at less than 100-hour or annual intervals. Recent U.S. Airworthiness Directives are available online at www.faa.gov. _____

2.410 Inspection Procedures and Checklist (continued)

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs (continued)

Service Bulletins: Verify applicable airframe, engine, and accessory Service Bulletins (SBs) have been complied with according to manufacturers' instructions. Some aircraft may be affected by SBs that require recurring inspections at less than 100-hour or annual intervals. RHC Service Bulletins are available online at www.robinsonheli.com, under the Publications tab. _____

20. Required Documents and Placards

Documents: Check that required documents (Airworthiness Certificate, Registration, applicable Radio Station License, Pilot's Operating Handbook, Equipment List/Weight & Balance Data) are on board, legible, and current. _____

Placards: Verify required placards are properly installed, legible, and current. Refer to Pilot's Operating Handbook Section 2 for placard requirements. _____

21. Inspection and Access Covers

Foreign Objects Removed: Verify all tools, loose hardware, rags, and other foreign objects are removed from helicopter. _____

Covers Closed and Secure: Install/close all inspection and access covers removed in preceding steps. Verify security of all access covers. _____

Clipper I Airbox Sealed: Ensure air box cover perimeter is sealed with aluminum tape (Clipper I models only). NA

22. Maintenance Records

Maintenance Records: Verify maintenance records are accurate, legible, and complete. Enter maintenance performed (such as part replacement, equipment adjustments, servicing, and lubrication) and inspection data. Data must include a description of (or reference to data acceptable to the Administrator) the work performed, date, helicopter total time in service, signature, certificate type and certificate number of person approving aircraft for return to service.

Inspection Procedures and C[redacted]

Mechanic's signature: [redacted] Date: 9-10-14

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VH-UBV TV. 321

SECTION 4

PERIODIC INSPECTIONS

NOTE

Perhaps no other factor is quite so important to safety and durability of the aircraft and its components as faithful and diligent attention to regular checks for minor troubles and prompt repair when they are found.

The operator should bear in mind that the items listed in the following pages do not constitute a complete aircraft inspection, but are meant for the engine only. Consult the airframe manufacturer's handbook for additional instructions.

Pre-Starting Inspection – The daily pre-flight inspection is a check of the aircraft prior to the first flight of the day. This inspection is to determine the general condition of the aircraft and engine.

The importance of proper pre-flight inspection cannot be over emphasized. Statistics prove several hundred accidents occur yearly directly responsible to poor pre-flight.

Among the major causes of poor pre-flight inspection are lack of concentration, reluctance to acknowledge the need for a check list, carelessness bred by familiarity and haste.

1. DAILY PRE-FLIGHT (ENGINE).

a. Be sure all switches are in the "Off" position.

b. Be sure magneto ground wires are connected.

c. Check oil level.

d. Check fuel level.

e. Check fuel and oil line connections, note minor indications for repair at 50-hour inspection. Repair any leaks before aircraft is flown.

f. Open the fuel drain to remove any accumulation of water and sediment.

g. Make sure all shields and cowling are in place and secure. If any are missing or damaged, repair or replacement should be made before the aircraft is flown.

h. Check controls for general condition, travel and freedom of operation.

i. Induction system air filter should be inspected and serviced in accordance with the airframe manufacturer's recommendations.

2. 10-HOUR INSPECTION (ENGINE). After the first ten (10) hours of operating time, new, rebuilt, or newly overhauled engines replace the oil filter, and conduct an inspection of the contents of the used oil filter for traces of metal particles.

3. 25-HOUR INSPECTION (ENGINE). At twenty-five (25) hours of operating time since the first inspection, new, rebuilt, or newly overhauled engines should undergo a 50-hour inspection including draining and renewing lubricating oil, replacing the oil filter, and inspecting the contents of the used oil filter.

NOTE

If the engine does not have a full-flow oil filter, change oil every 25 hours; also, inspect oil pressure and suction screens for metal contamination, and clean thoroughly before reinstallation.

4. 50-HOUR INSPECTION (ENGINE). In addition to the items listed for daily pre-flight inspection, the following maintenance checks should be made after every 50 hours of operation.

a. *Ignition System* –

(1) If fouling of spark plugs has been apparent, clean them and check electrode gap. Rotate bottom plugs to upper position.

(2) Examine spark plug leads of cable and ceramics for corrosion and deposits. This condition is evidence of either leaking spark plugs, improper cleaning of the spark plug wells or connector ends. Where this condition is found, clean the cable ends, spark plug wells and ceramics with a dry, clean cloth or a clean cloth moistened with methyl-ethyl-ketone. All parts should be clean and dry before reassembly.

(3) Check ignition harness for security of mounting clamps and be sure connections are tight at spark plug and magneto terminals.

b. *Fuel Line and Induction System* – Check the primer lines for leaks and security of the clamps. Remove and clean the fuel inlet strainers. Check the mixture control and throttle linkage for travel, freedom of movement, security of the clamps and lubricate if necessary. Check the air intake ducts for leaks, security, filter damage; evidence of dust or other solid material in the ducts is indicative of inadequate filter care or damaged filter. Check vent lines for evidence of fuel or oil seepage; if present, fuel pump may require replacement.

c. *Lubrication System* –

(1) Check oil lines for leaks, particularly at connections; for security of anchorage and for wear due to rubbing or vibration, for dents and cracks.

(2) Replace elements on external full-flow oil filters. Before disposing of used element check interior folds for traces of metal particles that might be evidence of internal engine damage. Drain and renew lubricating oil. (Reference latest revision of Service Instruction No. 1014 for proper oil.)

d. *Exhaust System* – Check attaching flanges at exhaust ports on cylinders for evidence of leakage. If they are loose, they must be removed and machined flat before they are reassembled and tightened. Examine exhaust manifolds for general condition.

e. *Cooling System* – Check cowling, baffles and baffle seals for damage and secure anchorage. Any damaged or missing part of the cooling system must be repaired or replaced before the aircraft resumes operation.

f. *Cylinders* – Check rocker box covers for evidence of oil leaks. If found, replace gasket and tighten screws to specified torque (50 in.-lbs.).

Check cylinders for evidence of excessive heat which is indicated by burned paint on the cylinder. This condition is indicative of internal damage to the cylinder and, if found, its cause must be determined and corrected before the aircraft resumes operation.

Heavy discoloration and appearance of seepage at cylinder head and barrel attachment area is usually due to emission of thread lubricant used during assembly of the barrel at the factory, or by slight gas leakage which stops after the cylinder has been in service for awhile. This condition is neither harmful not detrimental to engine performance and operation. If it can be proven that leakage exceeds these conditions, the cylinder should be replaced.

5. 100-HOUR INSPECTION. In addition to the items listed for daily pre-flight, and 50-hour inspection, the following maintenance checks should be made after every one hundred hours of operation.

a. *Electrical System* –

(1) Check all wiring connected to the engine or accessories. Any shielded cables that are damaged should be replaced. Replace clamps or loose wires and check terminals for security and cleanliness.

(2) Remove spark plugs; test, clean, regap, and rotate them. Replace if necessary.

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b. *Lubrication System* – Drain and renew lubricating oil.

c. *Magnetos* – Check breaker points for pitting and minimum gap. Check for excessive oil in the breaker compartment, if found, wipe dry with a clean lintless cloth. The felt located at the breaker points should be lubricated in accordance with the magneto manufacturer's instructions. Check magneto to engine timing. (Timing procedures for Bendix and Slick magnetos are covered in the Maintenance Procedures Section.)

d. *Engine Accessories* – Engine mounted accessories such as pumps, temperature and pressure sensing units should be checked for secure mounting, tight connections.

e. *Cylinders* – Check cylinders visually for cracked or broken fins.

f. *Engine Mounts* – Check engine mounting bolts and bushings for security and excessive wear. Replace any excessive wear. Replace any bushings that are excessively worn.

g. *Primer Nozzles* – Disconnect primer nozzles from engine and check for equal flow. N/A

h. *Fuel Injector Nozzles and Lines* – Check fuel injector nozzles for looseness. Tighten to 60 in.-lbs. torque. Check fuel line for dye stains at connections (indicating leakage) and security of lines. Repair or replacement must be accomplished before aircraft resumes operation. N/A

i. *Carburetor* – Check throttle body attaching screws for tightness; the correct torque for these screws is 40-50 in.-lbs.

6. 400-HOUR INSPECTION. In addition to the items listed for daily pre-flight, 50-hour and 100-hour inspections, the following maintenance check should be made after every 400 hours of operation.

Valve Inspection – Remove rocker box covers and check for freedom of valve rockers when valves are closed. Look for evidence of abnormal wear or broken parts in the area of the valve tips, valve keeper, springs and spring seats. If any indications are found, the cylinder and all of its components should be removed (including the piston and connecting rod assembly) and inspected for further damage. Replace any parts that do not conform with limits shown in the latest revision of Special Service Publication No. SSP-1776. N/A

7. NON-SCHEDULED INSPECTIONS. Occasionally, service bulletins or service instructions are issued by Lycoming that require inspection procedures that are not listed in this manual. Such publications, usually are limited to specified engine models and become obsolete after corrective modification has been accomplished. All such publications are available from Lycoming distributors, or from the factory by subscription. Consult the latest revision of Service Letter No. L184 for subscription information. Maintenance facilities should have an up-to-date file of these publications available at all times.

9-10-14

OBINSON
ICOPTER COMPANY
irport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-101

R66 SERVICE BULLETIN SB-34

: 12 August 2019

R44-series and R66 Owners, Operators, and Maintenance Personnel

IECT: HeliSAS Flight Control Computer

CTIVITY: HeliSAS Flight Control Computers (FCCs) having Hardware Mod Code prior. Affected computers were installed in autopilot-equipped R44-series and R66 copters manufactured in 2015 and early 2016. A reference list of aircraft and FCC al numbers as-delivered from the Robinson factory is provided on page 2. The FCC al number is listed in the Installed Equipment section of the Airframe Maintenance ord delivered with the helicopter. The Hardware Mod Code can also be read from a al on the bottom of the unit if the unit is loosened from its mounts.

OF COMPLIANCE: Within the next 150 flight hours or by 31 December 2019, hever occurs first.

GROUND: S-TEC, the manufacturer of the HeliSAS autopilot, has issued Service r SL 19-011 which provides instructions to upgrade the FCC to address a possible e of the audio warning alert for an autopilot disconnect. SL 19-011 is available on Robinson website.

LIANCE PROCEDURE:

etermine Hardware Mod Code of installed FCC.

FCC has Mod Code B or prior, remove per R44 Illustrated Parts Catalog (IPC) igure 22-7 or R66 Maintenance Manual (MM) § 22-30.

pgrade computer per S-TEC SL 19-011.

stall upgraded FCC per R44 IPC Figure 22-7 or R66 MM § 22-30.

ake appropriate maintenance record entries.

(OVER)

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APPROXIMATE COST:

Parts: As indicated in S-TEC SL 19-011.

Labor: As indicated in S-TEC SL 19-011.

FCCs with Hardware Mod Code B or prior Delivered on R44-series Helicopters	
Helicopter S/N	**FCC S/N**
11294	01311-1528-00561
13889	01311-1528-00558
13925	01311-1528-00559
13934	01311-1527-00556
13936	01311-1528-00560
13947	01311-1528-00557

FCCs with Hardware Mod Code B or prior Delivered on R66 Helicopters	
Helicopter S/N	**FCC S/N**
No Record	01311-1526-00536
0373	01311-1526-00535
0552	01311-1505-00439
0602	01311-1511-00457
0618	01311-1507-00444
0648	01311-1510-00445
0650	01311-1510-00448
0653	01311-1511-00455
0654	01311-1511-00456
0657	01311-1510-00446
0658	01311-1511-00458
0659	01311-1510-00447
0660	01311-1513-00469
0661	01311-1511-00454
0662	01311-1513-00472
0663	01311-1513-00464
0664	01311-1513-00470
0665	01311-1513-00471
0667	01311-1513-00468
0668	01311-1517-00486
0669	01311-1517-00485

FCCs with Hardware Mod Code B or prior Delivered on R66 Helicopters (cont'd)	
Helicopter S/N	**FCC S/N**
0672	01311-1517-00484
0674	01311-1517-00487
0675	01311-1517-00488
0676	01311-1523-00512
0681	01311-1523-00515
0682	01311-1523-00511
0683	01311-1523-00513
0687	01311-1523-00514
0688	01311-1524-00526
0690	01311-1524-00524
0691	01311-1527-00548
0692	01311-1525-00527
0694	01311-1527-00551
0696	01311-1527-00550
0697	01311-1527-00549
0770	01311-1524-00525

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

Pearl Coast Heli Maintenance

Job # : **299**

Rego : **NBY**

AFTTIS : 186.41

Start Date : 18-07-2019

Finish Date : 20-07-2019

Customer : Ultimate Outback Experience

Job Type : 100Hrly/Annual Inspection

Coordinator : s 22 [redacted]

Description : 100Hrly/Annual Inspection

VH-NBY J/N:299

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20 / 7 / 19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Airframe

Work Required : 100HRLY/12MONTHS 100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200

Task No 001
Category Airframe
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 500HRLY/12MONTHS Clean & Test M/R & T/R Gearbox Chip Detectors Per RHC R44 M/M Section 1.115

Task No 002
Category Airframe
Monitor By Days, Hours
Interval 365
Due 11-09-2019, 500
To Run 54

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS Gascolator Filter Clean/Inspect

Task No 003
Category Airframe
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS M/R Head Teeter Friction Test

Task No 004
Category Airframe
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20 / 7 / 19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Work Required : 100HRLY/12MONTHS M/R Swashplate Friction Test

Task No 005
Category Airframe
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS Maintenance Flight To Be Carried Out Before Release To Service

Task No 006
Category Airframe
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS POH Update/Status Check

Task No 007
Category Airframe
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230

Task No 008
Category Airframe
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O LHS 0.080" RHS 0.060" Within Limits NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

VH-NBY J/N : 299.

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20/7/19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Work Required : RHC R44 S/B 099 24V Battery Electrolyte Leakage

Task No 009
Category Airframe
Monitor By Hours
Interval 100
Due 188
To Run 1.59

Action Taken :
N/A Due A/C S/N

Labour Hours

ATA Code :

A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : RHC R44 S/B 100 R44 RII Induction Hose

Task No 010
Category Airframe
Monitor By Hours
Interval 100
Due 188
To Run 1.59

Action Taken :
N/A Due A/C S/N

Labour Hours

ATA Code :

A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20 / 7 / 19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Elec. Instr. Radio

Work Required : 12MONTHS Annual ELT Inspection IAW 14 CFR 91.207

Task No 011
Category Elec. Instr. Radio
Monitor By Days
Interval 365
Due 11-09-2019
To Run 54

Action Taken : Entered M/R

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 2YRLY CAO 100.5 Altimeter Altitude Reporting Mode C Test

Task No 012
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 23-05-2020
To Run 309

Action Taken : Entered M/R

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 2YRLY CAO 100.5 ATC Transponder Test

Task No 013
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 03-05-2020
To Run 289

Action Taken : Entered M/R

Labour Hours

ATA Code :
A.M.E
L.A.M.E s 22 [redacted]
Licence No 594407
Date 20/07/2019

Work Required : 2YRLY CAO 100.5 Pitot Static System Test

Task No 014
Category Elec. Instr. Radio
Monitor By Days
Interval 730
Due 20-05-2020
To Run 306

Action Taken : Entered M/R

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

VH-NBY J/N:299

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20 / 7 / 19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Work Required : 50HRLY/12MONTHS Lights/Electrical/Warning Lights Check

Task No 015
Category Elec. Instr. Radio
Monitor By Hours, Days
Interval 50
Due 138.62, 12-05-2020
To Run -47.79

Action Taken :
C/O NDF

Labour Hours

ATA Code :

A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20/7/19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Engine

Work Required : 100HRLY 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 016
Category Engine
Monitor By Hours
Interval 100
Due 188.62
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : TCM S/B 643C 100Hrly Magneto Inspection

Task No 017
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : LYC S/B 480F 4Monthly Oil & Filter Change

Task No 018
Category Engine
Monitor By Days
Interval 120
Due 10-09-2019
To Run 53

Action Taken : Entered M/R

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 50HRLY 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 019
Category Engine
Monitor By Hours
Interval 50
Due 138.62
To Run -47.79

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

VH - NBY J/N: 299.

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20 / 7 / 19.
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Work Required : 100HRLY/12MONTHS Airbox Clean/Inspect

Task No 020
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : LYC SI 1129B Alternator Belt Tension Check

Task No 021
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS Alternator Inspection, Belt Inspect/Adjust/Replace

Task No 022
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : LYC S/B 366C Carb Throttle Body Screw Inspection

Task No 023
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20/7/19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Work Required : 100HRLY/12MONTHS Carburettor Inspection

Task No 024
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : LYC SI 1191A Cylinder Compression Check

Task No 025
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O #1 78/80 #2 75/80 #3 77/80 #4 78/80 #5 76/80 #6 77/80 Within Limits NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS Engine Compression Check

Task No 026
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : TCM S/B 653 Hot Magneto Test

Task No 027
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

VH - NBY J/N: 299

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 20/7/19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Work Required : TCM S/B 670 Magneto Distributor Block Inspection

Task No 028
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : LYC S/B 480F Oil Filter Change & Inspection

Task No 029
Category Engine
Monitor By Hours, Days
Interval 50
Due 138.62
To Run -47.79

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : 100HRLY/12MONTHS Spark Plug Clean/Gap/Test

Task No 030
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : LYC SI 1080C Special Attention Maintenance Items

Task No 031
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 20 / 7 / 19
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Work Required : 100HRLY/12MONTHS Starter Motor/Starter Ring Gear Inspection

Task No 032
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

Work Required : LYC S/B 595 Torque Values Ignition Harness Attach Screws

Task No 033
Category Engine
Monitor By Hours, Days
Interval 100
Due 188.62, 12-05-2020
To Run 2.21

Action Taken :
C/O NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 20/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

VH-NBY J/N: 299

Co-Ordination and Final Certification

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Owner : Horizontal Falls Helicopters
Operator : Horizontal Falls

Job No : 299
Job Description : 100Hrly/Annual Inspection

M/R Date of Issue	20/7/19.
Expired M/R Serial No.	A158251
Issued M/R Serial No.	A222867.
Aircraft TTIS	186.41

L.A.M.E CERTIFICATION

I hereby certify that all maintenance in the category(s) for which I am responsible have been completed.

Categories covered during this inspection - Certifications

Airframe	s 22 [redacted]	Licence Number	594457	Date	20/7/19
Engines		Licence Number	594457	Date	20/7/19
Electrical		Licence Number	594457	Date	20/7/19
Instrument		Licence Number	594457	Date	20/7/19
Radio		Licence Number	594457	Date	20/7/19.

For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Independent Inspection Certificate Pursuant to CAR 42G. Inspection carried out on the following :

1st Inspection Signature : Licence Number

2nd Inspection Signature : Licence Number

CO-ORDINATING CERTIFICATION

I hereby certify for the completion and co-ordination of the entire inspection.

LAME Signature : s 22 [redacted] LAME Licence No : 594407 Date 20/7/19 For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

A CERTIFICATION ABOVE CONSTITUTES A CERTIFICATION PURSUANT TO CAR42ZE THAT ALL MAINTENANCE HAS BEEN PROPERLY CERTIFIED. Note: The person who certifies for the completion and co-ordination of the entire inspection or workpackage contents is to ensure that any maintenance performed during the inspection has not invalidated a certification already made in another category and has been completed and properly certified.

VH-NBY J/N: 299.

Engineering Work Package

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

JOB DETAILS

Job Number	299	Date Raised	18/07/2019	AF TTIS	186.41
Aircraft Registration	VH-NBY	Date Completed	25/7/19	Engine TTIS	
Operator	Horizontal Falls Helicopters	Approved Maintenance Data (Airframe)	RHC R44 RTR 460 Maintenance Manual Rev May 2016	Landings/Starts	
Aircraft Type	R44			Cycles	
Operator Base	Pearl Coast Heli Maintenance	Approved Maintenance Data (Engine)	Lycoming O-540 Operators Manual Rev March 2009	RINS	

Job Description : 100Hrly/Annual Inspection

SIGNATURE SIGN OFF	Name	Licence No.	Signature & Initial	Trade Type	Hours
Job Coordinator	s 22	594407	s 22	LAME	
AME/LAME	s 22			AME	

VH-NBY J/N: 299

Additional Worksheet Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : _____
Print Name : s 22
Date : / /
Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Item	Defect or Work Required	Rectification Details	A.M.E	L.A.M.E	Licence No.	Date

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No :

VH-NBY J/N: 299

Additional Worksheet Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 299

Co-ordinators Signature : _____

Print Name : s 22 _____

Date : / /

Licence No : 594407

Component	Counter	Total
Airframe	Hours	186.41
Airframe	Days	19-07-2019

Item	Defect or Work Required	Rectification Details	A.M.E	L.A.M.E	Licence No.	Date

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No :

VH- NBY J/N: 299.

2.200 GROUND AND FLIGHT CHECK FOR 100-HOUR/ANNUAL INSPECTION

Complete following checklists in conjunction with a 100-hour or annual inspection. Note and correct any discrepancies.

2.205 Ground Check (Aircraft not running)

1. Throttle Control: Check for freedom of rotation with collective full down and full up.
2. Throttle Overtravel Spring: Check by twisting throttle past idle position to override stop. Release throttle and ensure it returns to normal idle position.
3. Mixture Control: Check for smoothness of operation with no binding. Check press-to-unlock button for proper function. Verify 0.03 to 0.10 inch spring-back at full rich position.
4. Carburetor Heat Control (O-540 only): Check for smoothness of operation with no binding. Verify 0.03 to 0.10 inch spring-back at full off position.
5. Cyclic Control: With trim motors (if installed) in neutral position, verify freedom thru full travel with friction off. Verify friction knob rotates 1/8-to-1 full turn before adding friction. For hydraulic controls: Verify approximately one-half inch total longitudinal and one inch total lateral freeplay before encountering resistance. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel.
6. Collective Control: Verify freedom through full travel with friction off and on. For non-hydraulic aircraft, verify friction knob moves 0.3-0.6 inch before adding friction. For hydraulic controls: Verify approximately one-half inch total freeplay before encountering resistance. With carb heat assist (if installed) locked and friction lever fully off, verify C334 friction (between rear seats) within freeplay range is 4-5 pounds average measured at grip. With friction lever fully on, verify 18-22 pounds measured at grip. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel.
7. Carb Heat Assist (if installed): With collective down and full carb heat, raise collective full up and verify carb heat off. Lower collective full down and verify carb heat full on. With collective friction off, push carb heat off and verify collective stays down.
8. Tail Rotor Pedals: Check for smooth operation with no binding.
9. Removable Controls: Verify security of attach fasteners.

2.205 Ground Check (cont'd)

10. Lighting and Instruments: (Master Switch on)
    a. CARBON MONOXIDE warning light flashes twice (if installed).
    b. Carb Air Temp approximately same as Outside Air Temp.
    c. ALT warning light on.
    d. OIL pressure warning light on.
    e. AUX FUEL PUMP warning light on (IO-540 only).
    f. Fuel quantity gages - indication of fuel level.
    g. Navigation and panel lights - check function.
    h. Strobe light - check function.
    i. Landing lights - check function (clutch switch must be engaged to check landing lights).
    j. Map light - check function.
    k. Ammeter - shows discharge.
    l. Oil temperature gage - slight needle deflection with engine cold.
    m. Cylinder head temp gage - slight needle deflection with engine cold.
    n. MR TEMP light - on when sender shorted or test switch depressed.
    o. MR CHIP light - on when sender shorted or test switch depressed.
    p. ENGINE FIRE light – on when sender shorted or test switch depressed.
    q. TR CHIP light - on when sender shorted or test switch depressed.
    r. LOW FUEL light - on (slight delay is normal) when low fuel sender in tank is depressed with clean, non-sparking rod or when test switch depressed.
    s. FUEL FILTER light – on when test switch depressed (IO-540 only).
11. Verify aircraft checklist laminated card is current revision (refer to Section 1.002).

2.210 Run Up

1. Perform POH Section 4 "Preflight" checklist.
2. Perform "Before Starting Engine" checklist.
3. IO-540 engine: Verify AUX FUEL PUMP light extinguishes during prime and illuminates after priming. Verify fuel drains from sniffle valve.

> NOTE
> Significant prime may be required before fuel drains from sniffle valve. Wait for valve to stop draining before starting engine. Engine will be hard starting/flooded while valve is draining.

4. Perform "Starting Engine and Run-Up" checklist. If less than 15 minutes has elapsed since Step 3, use minimum or no prime.
5. Check clutch engagement time - maximum 70 seconds.
6. Ammeter indicates charge, ALT light off.
7. Both magnetos ground (off momentarily) at 60% RPM.
8. Tachometer operates with alternator and battery switches off.
9. No unusual bearing noise when varying RPM through operating range (mechanic to listen near V-belt drive). Refer to Section 2.110 and 2.501 thru 2.503.
10. Set RPM at 75%, governor on. Increase to 85%, release throttle, and verify governor increases RPM to 101 to 102%. Increase RPM to 104%, release throttle, and verify governor decreases RPM to 101 to 102%.
11. Engine and rotor tach needles within 1% of each other at 102% RPM.
12. Verify alternator voltage as follows:
    13.4 to 13.9 vdc for A942-3 alternator control unit
    27.75 to 29.25 vdc for A942-4 alternator control unit
13. Heater operates properly.
14. Tachometer needles do not jump more than 2% when transmitting on 118.00, 125.00 , and 136.975 MHz with governor on.
15. Raise collective control 0.5 inch at grip and slowly decrease RPM. Verify low-rotor-RPM warning horn and light activate at 97% to 96% RPM and remain on as RPM is decreased to idle.

2.210 Run Up (cont'd)

16. Idle RPM with engine warm, clutch engaged, throttle closed-
    O-540 engine: 53% - 57%
    IO-540 engine: 58% - 62%
17. Idle mixture with engine warm, clutch engaged, throttle closed.
    O-540 engine: 2% to 4% RPM rise as mixture is pulled slowly to idle cut-off. Adjust idle mixture screw as required. If unable to obtain rise, set idle mixture screw 1 ½ turns out from fully in then adjust as required for smooth idle.
    IO-540 engine: Adjust idle mixture per Section 6.495, Step 23.
18. Check hydraulic system (if installed) operation. Using cyclic- mounted hydraulics switch, turn hydraulics OFF. Using small longitudinal cyclic inputs, there should be approximately one-half inch of freeplay before encountering stiffness and feedback. Turn hydraulics ON. Controls should be free with no feedback or uncommanded motion ("motoring"). Complete flight check with hydraulics on.
19. Air Conditioning: Verify system blows cold air on both low and high settings. Verify no EMI/RFI with other instruments and systems. After a flight with air conditioning on, verify water drains from drain tube in ship's belly (may be little or no water in very dry conditions).

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2.220 Flight Check

1. Hover:
   a. All gages green.
   b. Controllability in left and right pedal turns.
   c. Cyclic electric trim (or hydraulics) zeros cyclic stick forces.
   d. Vibration levels satisfactory.
2. Level flight: Typical cruise altitude (if possible, deviate as required for weather and regulations), maximum continuous power, governor on.
   a. Vibration levels satisfactory.
   b. Cyclic electric trim (or hydraulics) zeros cyclic stick forces.
   c. Collective trim spring (electric trim system only) zeros collective forces. For hydraulic controls: Verify no feedback and collective is balanced.
   d. Fixed collective friction adequate to prevent "bounce" but not excessive (electric trim system only).
   e. Tail rotor pedal position when yaw string is centered: 0.25 to 0.75 inch right for adjustable pedals, within 0.25 inch of neutral for non-adjustable pedals.
   f. Tail rotor elastic trim cord zeros pedal forces (cord applies left pedal force).
   g. For hydraulic controls: Turn hydraulics OFF and verify no excessive feedback forces.
3. Autorotate at 100 KIAS with station 99 or greater CG. Verify electric trim (or hydraulics) zeros cyclic stick forces.

2.230 Shutdown

1. Verify rotor brake functions and ROTOR BRAKE light illuminates.
2. Complete shutdown per POH checklist.

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2.300 AIRFRAME PREPARATION FOR 100HR/ANNUAL INSPECTION

Thoroughly clean airframe prior to inspection. Wipe down main and tail rotor blades, hubs, and airframe exterior with a mild soap and water solution.

CAUTION

Do not spray magnetos, main rotor hub, tail rotor gearbox vent, hydraulic reservoir vent, swashplate area, or bearing seals with high-pressure water or solvent as water or solvent may enter and cause corrosion and breakdown of lubricants.

2.400 100HR/ANNUAL AIRFRAME INSPECTION

NOTE

Numbers in parentheses indicate location as illustrated in Figures 2-4 and 2-4A.

CAUTION

If pop-out floats are installed, ensure safety or pilot's rod inflation lever is in LOCKED position when working on helicopter.

WARNING

Pop-out float pressure cylinder contents are under extreme pressure. If pop-out floats are installed, install locking pin in pressure cylinder valve (see Figure 5-6) when working in forward left baggage compartment, during cylinder removal or installation, and when working on floats or inflation hoses. Remove locking pin when work is completed. Avoid excessive heat (>200 degrees F) as thermal relief valve will activate.

Perform 100 hour or Annual inspection per Section 2.410.

2.410 Inspection Procedures and Checklist

R44 Serial No.: 2544 Technician name: N BOTB
Registration No.: VH-NBY Technician
Hourmeter Indication: 186.4 Certificate number: 9144J
Aircraft Total Time: 186.4

1. Tail Rotor Pedal Bearing Blocks

NOTE

Do not remove pedal bearing block cover plates (1) unless function check of pedals indicates possible problem with pedal bearing blocks.

To remove cover plates (1) peel back carpeting and remove screws holding plates. Use an inspection light and mirror to inspect bearing blocks. Inspect for condition and looseness or play. Maximum allowable play is 0.080 inch axially and 0.030 inch radially. Inspect all weld areas in pedal controls.

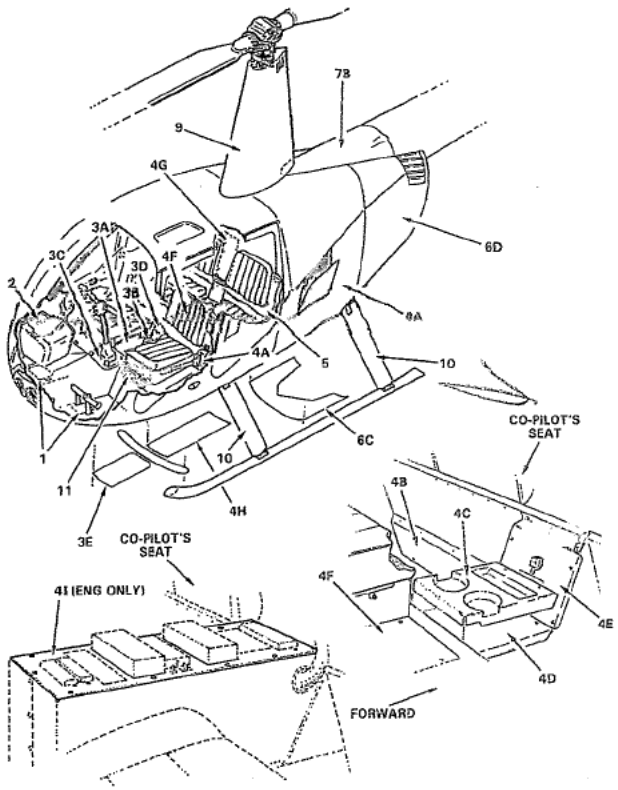

FIGURE 2-4 ACCESS AND INSPECTION PANELS

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SECTION 4
PERIODIC INSPECTIONS

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SECTION 4
PERIODIC INSPECTIONS

NOTE

Perhaps no other factor is quite so important to safety and durability of the aircraft and its components as faithful and diligent attention to regular checks for minor troubles and prompt repair when they are found.

The operator should bear in mind that the items listed in the following pages do not constitute a complete aircraft inspection, but are meant for the engine only. Consult the airframe manufacturer's handbook for additional instructions.

Pre-Starting Inspection – The daily pre-flight inspection is a check of the aircraft prior to the first flight of the day. This inspection is to determine the general condition of the aircraft and engine.

The importance of proper pre-flight inspection cannot be over emphasized. Statistics prove several hundred accidents occur yearly directly responsible to poor pre-flight.

Among the major causes of poor pre-flight inspection are lack of concentration, reluctance to acknowledge the need for a check list, carelessness bred by familiarity and haste.

1. DAILY PRE-FLIGHT (ENGINE).

a. Be sure all switches are in the "Off" position.
b. Be sure magneto ground wires are connected.
c. Check oil level.
d. Check fuel level.
e. Check fuel and oil line connections, note minor indications for repair at 50-hour inspection. Repair any leaks before aircraft is flown.
f. Open the fuel drain to remove any accumulation of water and sediment.
g. Make sure all shields and cowling are in place and secure. If any are missing or damaged, repair or replacement should be made before the aircraft is flown.
h. Check controls for general condition, travel and freedom of operation.
i. Induction system air filter should be inspected and serviced in accordance with the airframe manufacturer's recommendations.

2. 10-HOUR INSPECTION (ENGINE). After the first ten (10) hours of operating time, new, rebuilt, or newly overhauled engines replace the oil filter, and conduct an inspection of the contents of the used oil filter for traces of metal particles.

3. 25-HOUR INSPECTION (ENGINE). At twenty-five (25) hours of operating time since the first inspection, new, rebuilt, or newly overhauled engines should undergo a 50-hour inspection including draining and renewing lubricating oil, replacing the oil filter, and inspecting the contents of the used oil filter.

NOTE

If the engine does not have a full-flow oil filter, change oil every 25 hours; also, inspect oil pressure and suction screens for metal contamination, and clean thoroughly before reinstallation.

4. 50-HOUR INSPECTION (ENGINE). In addition to the items listed for daily pre-flight inspection, the following maintenance checks should be made after every 50 hours of operation.

a. *Ignition System* –

(1) If fouling of spark plugs has been apparent, clean them and check electrode gap. Rotate bottom plugs to upper position.

(2) Examine spark plug leads of cable and ceramics for corrosion and deposits. This condition is evidence of either leaking spark plugs, improper cleaning of the spark plug walls or connector ends. Where this condition is found, clean the cable ends, spark plug walls and ceramics with a dry, clean cloth or a clean cloth moistened with methyl-ethyl-ketone. All parts should be clean and dry before reassembly.

(3) Check ignition harness for security of mounting clamps and be sure connections are tight at spark plug and magneto terminals.

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b. Fuel Line and Induction System – Check the primer lines for leaks and security of the clamps. Remove and clean the fuel inlet strainers. Check the mixture control and throttle linkage for travel, freedom of movement, security of the clamps and lubricate if necessary. Check the air intake ducts for leaks, security, filter damage; evidence of dust or other solid material in the ducts is indicative of inadequate filter care or damaged filter. Check vent lines for evidence of fuel or oil seepage; if present, fuel pump may require replacement.

c. Lubrication System –

(1) Check oil lines for leaks, particularly at connections; for security of anchorage and for wear due to rubbing or vibration, for dents and cracks.

(2) Replace elements on external full-flow oil filters. Before disposing of used element check interior folds for traces of metal particles that might be evidence of internal engine damage. Drain and renew lubricating oil. (Reference latest revision of Service Instruction No. 1014 for proper oil.)

d. Exhaust System – Check attaching flanges at exhaust ports on cylinders for evidence of leakage. If they are loose, they must be removed and machined flat before they are reassembled and tightened. Examine exhaust manifolds for general condition.

e. Cooling System – Check cowling, baffles and baffle seals for damage and secure anchorage. Any damaged or missing part of the cooling system must be repaired or replaced before the aircraft resumes operation.

f. Cylinders – Check rocker box covers for evidence of oil leaks. If found, replace gasket and tighten screws to specified torque (50 in.-lbs.).

Check cylinders for evidence of excessive heat which is indicated by burned paint on the cylinder. This condition is indicative of internal damage to the cylinder and, if found, its cause must be determined and corrected before the aircraft resumes operation.

Heavy discoloration and appearance of seepage at cylinder head and barrel attachment area is usually due to emission of thread lubricant used during assembly of the barrel at the factory, or by slight gas leakage which stops after the cylinder has been in service for awhile. This condition is neither harmful nor detrimental to engine performance and operation. If it can be proven that leakage exceeds these conditions, the cylinder should be replaced.

5. 100-HOUR INSPECTION. In addition to the items listed for daily pre-flight, and 50-hour inspection, the following maintenance checks should be made after every one hundred hours of operation.

a. Electrical System –

(1) Check all wiring connected to the engine or accessories. Any shielded cables that are damaged should be replaced. Replace clamps or loose wires and check terminals for security and cleanliness.

(2) Remove spark plugs; test, clean, regap, and rotate them. Replace if necessary.

b. Lubrication System – Drain and renew lubricating oil.

c. Magnetos – Check breaker points for pitting and minimum gap. Check for excessive oil in the breaker compartment, if found, wipe dry with a clean linless cloth. The felt located at the breaker points should be lubricated in accordance with the magneto manufacturer's instructions. Check magneto to engine timing. (Timing procedures for Bendix and Slick magnetos are covered in the Maintenance Procedures Section.)

d. Engine Accessories – Engine mounted accessories such as pumps, temperature and pressure sensing units should be checked for secure mounting, tight connections.

e. Cylinders – Check cylinders visually for cracked or broken fins.

f. Engine Mounts – Check engine mounting bolts and bushings for security and excessive wear. Replace any excessive wear. Replace any bushings that are excessively worn.

g. Primer Nozzles – Disconnect primer nozzles from engine and check for equal flow.

h. Fuel Injector Nozzles and Lines – Check fuel injector nozzles for looseness. Tighten to 60 in.-lbs. torque. Check fuel line for dye stains at connections (indicating leakage) and security of lines. Repair or replacement must be accomplished before aircraft resumes operation.

i. Carburetor – Check throttle body attaching screws for tightness; the correct torque for these screws is 40-50 in.-lbs.

6. 400-HOUR INSPECTION. In addition to the items listed for daily pre-flight, 50-hour and 100-hour inspections, the following maintenance check should be made after every 400 hours of operation.

Valve Inspection – Remove rocker box covers and check for freedom of valve rockers when valves are closed. Look for evidence of abnormal wear or broken parts in the area of the valve tips, valve keeper, springs and spring seats. If any indications are found, the cylinder and all of its components should be removed (including the piston and connecting rod assembly) and inspected for further damage. Replace any parts that do not conform with limits shown in the latest revision of Special Service Publication No. SSP-1776.

7. NON-SCHEDULED INSPECTIONS. Occasionally, service bulletins or service instructions are issued by Lycoming that require inspection procedures that are not listed in this manual. Such publications, usually are limited to specified engine models and become obsolete after corrective modification has been accomplished. All such publications are available from Lycoming distributors, or from the factory by subscription. Consult the latest revision of Service Letter No. L114 for subscription information. Maintenance facilities should have an up-to-date file of these publications available at all times.

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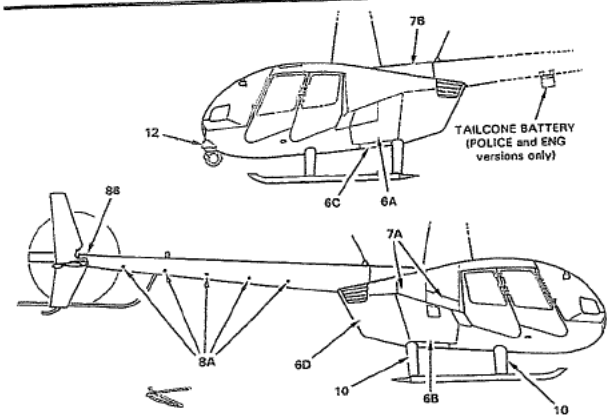

FIGURE 2-4A ACCESS AND INSPECTION PANELS

NUMBER	PART NUMBER	DESCRIPTION	NUMBER	PART NUMBER	DESCRIPTION
1	8189-4 A412-2 and 8189-2	Deflector (LH) Cover and Deflector (RH)	4I	D383-1	Face (ENG only)
			5	C003-10	Seat Back Assy (RH)
				C003-11	Seat Back Assy (LH)
2	8050	Console Assy	6A	C337-1	Cowling Assy (LH)
3A	C445-1	Cover Assy	6B	C378-1	Cowling Assy (RH)
3B	C445-3	Cover	6C	D041-1	Cowling Assy - Belly
3C	C444-1	Cover	6D	D040-1	Aft Cowling Assy
3D	C398-1	Cover Assy	7A	D042-4	Door Assy
3E	C794-1	Panel		D042-4	Door Assy
4A	C680-1	Cover Assy	7B	C706-1	Tailcone Cowling Assy
4B	C461-1	Cover	8A	A231-1	Plug Assy
4C	C464-1	Tray	8B	A558-2	Cover
4D	C463-1	Cover	9	C261-1	Mast Fairing Assy
4E	C054-1	Cover Assy	10	C082-2	Fairing Assy (FWD, RH)
4F	C474-2	Cover		C082-3	Fairing Assy (FWD, LH)
4G	C474-1	Cover		C082-4	Fairing Assy (AFT, RH)
				C082-5	Fairing Assy (AFT, RH)
4H	C794-2	Panel (without scoop)	11	C045	Circuit Breaker Panel
	C794-3	Panel Assy (with scoop)	12 (Police ships)	D412-1 or D347-1	Fairing (Inframetrics Camera) Fairing (FSI Camera)
4H	C794-2	Panel (without scoop)			
	C794-3	Panel Assy (with scoop)			

2.410 Inspection Procedures and Checklist (cont'd)

2. **Upper Console (2)**

Console (2), is opened by removing one screw on each side. With console open, inspect the following:

Pitot-Static System: Check pitot and static lines for cracking, chafing, pinching or kinking. Check all connections for security.

Flight and Engine Gages: Check all gauges for security. Inspect wiring and connections on all gages.

Radio Tray(s): Check condition and security.

Tail Rotor Controls: Check accessible portions of TR pedal assemblies for defects. Verify operating clearance.

3. **Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D), and Forward Belly Panel (3E)**

> **NOTE**
>
> If radio antennas are installed on removed panels, disconnect antenna lead and any ground wire. Pull respective radio circuit breaker and tag circuit breaker with "Antenna Removed".

Cyclic Box Assembly: Inspect cyclic box assembly for defects. Check cyclic stop sheet metal assembly for cracks and other defects (deterioration, distortion, loose rivets, corrosion).

Cyclic Stick Assembly: Inspect cyclic stick assembly for defects. Inspect welds for cracks.

> **CAUTION**
> **(manual controls)**
>
> Do not disturb clear silicone coating protecting strain gages, or attached wiring. Any damage to strain gages or wiring will disable trim system.

Cyclic Trim (manual controls): Turn master and cyclic trim switches on. Move cyclic laterally stop to stop and longitudinally stop to stop and check operation of trim motors. Check trim motors, springs and elastic cords for clearance from all wire bundles and fuselage structure during movement and at travel limits. N/A

Cyclic Lateral Trim Actuator (manual controls): Turn master and cyclic trim switches on. Push and hold cyclic stick against right stop until motor stops then turn trim off. Move cyclic stick to left stop to compress spring. Inspect exposed portion of shaft for wear and galling. Do not grease rod on Rev H and subsequent C056-1 spring assemblies, bearing is self-lubricating. Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic pivot. NA

Cyclic Longitudinal Trim Actuator (manual controls): Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic stick. N/A

2.410 Inspection Procedures and Checklist (continued)

3. **Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D) and Forward Belly Panel (3E) (continued)**

Cyclic Friction: Check for excessive play or looseness in links and rod ends connected to cyclic stick. Verify no excessive flaring at either end of C130-2 spacer.

Cyclic Push-Pull Tube and Torque Tube: Inspect C319 torque tube paying special attention to area around blocks and end of torque tube for cracks. Inspect C121-1 push-pull tube rod end palnut and jam nut for tightness. Check witness holes on push-pull tubes. Check rod ends and bearings for excessive play and looseness. Check accessible portions of cyclic push-pull tube and torque tube for defects, including scratches. Pay particular attention to top of torque tube immediately below C348-1 anchor assembly. Inspect all nuts and bolts in cyclic controls for rotation and looseness.

Tail Rotor Push-Pull Tube: Inspect accessible portions of C121-9 tail rotor push-pull tube. Look for defects such as cracks, bends, scratches, or chafing. Check rod ends for excessive play and looseness.

Collective Friction and Stop: Inspect collective stop condition; no nicks, cuts or scratches are allowed. Check collective friction lever for security and operation. Move collective up and down and verify no bending or binding of stop. Verify collective boot's lace cannot entangle stop.

Throttle Overtravel Spring: Inspect operation of overtravel spring while operating throttle. It should move freely without any binding or jerkiness. Check play in upper and lower rod ends. Check rod ends for binding.

Wiring Harness: Inspect for chafing and clearance from controls.

Pitot and Static Lines: Inspect pitot and static lines for security and any evidence of cracking, chafing, pinching or kinking from sharp bends. Open drains and check for moisture; close drains.

Elastic Trim Cord(s): With cyclic forward-right, feel forward elastic trim cord(s) for voids which may indicate broken strands.

Heater Hose: Check heater hose for collapsed areas and chafing.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

4. **Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only)**

> **NOTE**
>
> If radio antenna is installed on removed panel, disconnect antenna lead and corresponding ground wire. Pull respective radio circuit breaker and tag circuit breaker with "antenna removed".

2.410 Inspection Procedures and Checklist (continued)

4. **Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only) (continued)**

Collective Stick: Inspect condition of collective stick. Inspect all welds for cracks. Inspect C328-1 connecting rod assembly giving special attention to points of attachment. Inspect governor motor and governor motor arm for looseness or binding. Inspect collective-activated micro switch for cracks or loose wires.

Collective Stick Torque Tube: Verify no corrosion pitting. Apply a corrosion-preventative compound such as LPS 2, ACF-50, or Corrosion-X to any unpainted, phosphate-coated area while avoiding contaminating governor friction clutch (a foam-type applicator works well). Ensure interior of open-end "box" structures at inboard attach point and at A205 fork connection are also treated.

Aft End of Cyclic Torque Tube and Yoke Assembly: Inspect torque tube and yoke, paying special attention to area around blocks and end of torque tube for cracks. Check play in bellcrank bearings per Section 2.120. Inspect swaged bearing for movement in yoke.

Aft End of Cyclic Push-Pull Tube (C121-1) and Lower Ends of Vertical Push-Pull Tubes (C121-7): Inspect push-pull tubes for cracks. Check rod end jam nuts and palnuts for tightness and rod ends for play. Check rod end bearings for looseness. Inspect fork assembly areas. Check bearings for looseness. Check between bearings and swage for evidence of fretting.

Aft End of (C121-19) Tail Rotor Push-Pull Tube and Lower Bearing: Check witness hole. Check lower bellcrank bearing for play. Inspect all welds on support assembly for lower bellcrank and inspect surrounding sheet metal area for cracks.

Collective Push-Pull Tube (C121-19): Check for binding or nicks. Check witness holes. Check jam nuts and palnut for tightness and rod end for play.

Collective Friction Assembly: Check jam nuts and palnuts for tightness and rod ends for play. Inspect all welds on bellcrank support assembly and inspect surrounding sheet metal for cracks and corrosion.

Collective Spring Assembly (Manual Controls Only): Move collective up and down and verify no binding or cracking. Spring coils must not touch when collective is full down. Verify jam nut and palnut tightness. Verify rod ends play within limits. Verify guide rods are greased. If required by Section 1.101, service assembly per Section 8.221. N/A

Throttle Control Linkage: Remove throttle control arm cover if cover is not transparent (under aft left seat [O-540], or inside tunnel [IO-540], at firewall). Inspect condition. Verify throttle control clearance to installed equipment and adjacent structure. Verify proper installation and security. Install cover.

Fuel Valve and Fuel Line: Inspect fuel line for damage and valve fittings for leakage (leakage is indicated by a blue or green residue, depending on fuel used, or odor of fuel). Verify no chafing of fuel lines.

Fuel Valve-to-Knob Torque Tube: Inspect condition. Verify attaching security.

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2.410 Inspection Procedures and Checklist (continued)

5. Remove Aft Seat Back Assemblies (5)

Wiring: Check wiring for security and proper installation.

Pitot and Static Lines: Check for security, chafing, and kinks.

Air Conditioning Refrigerant Lines (if installed): Verify security & no damage. N/A

Evaporator Drain Tubes and Valve (if installed): Verify tubes are unobstructed. Place a container under sediment-tube protruding from bottom of tee-fitting into right-aft baggage compartment. Remove plug from sediment tube and allow any accumulated moisture and debris to drain. Reinstall plug. Simultaneously squeeze drain tube and sediment tube near tee-fitting and verify check-valve ball moves up momentarily. N/A

Strobe Power Supply & Alternator Control Unit: Inspect strobe power supply and alternator control unit wiring. Inspect mounting panels for cracks.

Blind Encoder & Governor Controller: Inspect blind encoder and governor controller wiring. Inspect mounting panels for cracks.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings

Vertical Firewall: Inspect vertical firewall condition, especially around structural attachment points, verify no cracks, buckling or wrinkles.

Fuse(s) and Fuse Holder(s) (if installed on vertical firewall): Verify security and no corrosion. Verify correct fuses: -66 wire requires AGC-3 fuse, -1601/-1602 wires require AGC-5 fuse. If installed, -1226 wire requires AGC-3 fuse.

Wiring: Verify security, proper installation, and no deterioration.

Electric Fuel Pump (IO-540 only): Verify security, proper installation, unobstructed drain tube, and no leakage. N/A

Fuel Line & Hose(s): Inspect condition. Verify security, proper installation, no leakage, & (IO-540 only) good condition of spirap insulation on fuel line between firewall & gascolator. If deteriorated, replace MS3367-5-9 ty-raps securing fuel hoses to clamps (reference R44 SB-67).

Lower Steel Tube Frames: Thoroughly inspect lower steel tube structure for corrosion and inspect all welds for cracks. Ensure frames are not chafed by wires, hoses, clamps, etc.

Engine Cooling Panels: Inspect cooling panels for cracks and missing fasteners.

Oil Cooler(s): Inspect oil cooler(s) and fittings for damage, leaks, cleanliness, and security. Check oil cooler mounting area(s) for cracks.

2.410 Inspection Procedures and Checklist (continued)

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings (continued)

Oil Lines: Inspect entire length of all oil lines and verify no cracks, abrasion, or broken clamps. Verify clearance; wires, ty-raps, and structure must not contact lines.

Gascolator: With fuel valve off, remove and clean gascolator bowl and filter screen. Verify no deterioration of gasket. If gascolator bowl is secured by threaded collar and ring, lightly lube threads and ring with A257-6 grease. Reassemble and turn fuel valve on. Safety wire after ensuring no leaks occur. Verify drain valve is secure and torque-striped.

Mixture Control: Verify mixture control moves mixture control arm stop to stop. Inspect condition and verify security of mixture control cable clamps on bracket; push and pull cable housing to ensure it does not slip in clamps. Inspect condition and verify security of mixture control cable inner wire attachment to mixture control arm. Ensure freedom of rotation between mixture control arm and inner wire retention fitting (bolt) when arm moves. Verify mixture control safety spring is properly installed (so spring force holds mixture control arm at full-rich position if inner wire breaks).

Throttle Correlation Rigging: Check per § 10.150 and adjust as required.

Full-Throttle Switch Rigging: Check per § 14.1020 and adjust as required.

Air Box & Alternate Air Door: Ensure carburetor heat slider valve (if applicable) moves fully from stop to stop. Replace air filter (lubricating IO-540 air filter rubber with A257-8 rubber lubricant will facilitate sealing). Check air box for condition and security. Verify spring-loaded alternate air door opens without binding and closes completely.

Engine Air Inlet Hose: Verify correct installation & security. Verify no rips, holes, or collapsed areas. Ensure hose is not chafing frame.

Carburetor Heat Scoop and Hose (O-540 engines only): Inspect for condition and security.

Heater Hose: Inspect for condition and security.

Battery and Battery Box (alternate locations under upper console or under left, front seat): Check cable terminals for cracks. Check each cell electrolyte for quantity and specific gravity if equipped with non-sealed battery. As required, perform capacity test per manufacturer's instructions or replace battery. Verify security and no obstructions in drain tube.

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9)

Cowling Door: Inspect hinges and latches for condition and security.

Tailcone cowling: Verify no cracks, air inlet obstructions, or loose rivets.

Electrical and Antenna Wires: Inspect condition. Verify security and no chafing, kinks or tight bends.

MRGB Input Yoke: Inspect condition. Verify security and operating clearance. Verify security of magnets.

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Forward Flex Plate: Inspect condition, particularly edges. Verify security. Verify bonded washers are securely bonded to both sides of each flex plate arm. Verify operating clearance.

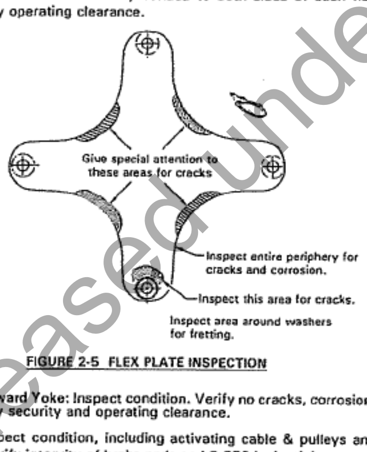

FIGURE 2-5 FLEX PLATE INSPECTION

Clutch Shaft Forward Yoke: Inspect condition. Verify no cracks, corrosion, or fretting. Verify security and operating clearance.

Rotor Brake: Inspect condition, including activating cable & pulleys and microswitch. Verify integrity of brake pads and 0.030 inch minimum pad thickness. Verify brake pad clearance to input yoke when brake is off. Verify security and operating clearance.

Jackshaft: Inspect entire welded assembly for cracks and corrosion. Inspect jackshaft supporting strut and tube weldments for security, cracks and corrosion.

Main Rotor Push-Pull Tubes: Inspect condition of viewable portions. Verify no cracks at ends. Inspect rod ends per Section 2.120. Verify no tears in sleeves (manual controls only). Verify security and operating clearances.

Main Rotor Push-Pull Tube Rollers & Bushings: (manual controls only): Inspect condition. Verify cleanliness, no wear into metal, and free movement of rollers. N/A

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Tail Rotor Push-Pull Tube and Upper Bellcrank: Inspect C121-15 push-pull tube, especially at ends, for cracks. Check jam nut for tightness and rod end for looseness. Inspect bellcrank and mounting for cracks or other defects.

Main Rotor Gearbox Cooling Hoses: Inspect both ends for security. Inspect for rips, holes, and chafing.

Main Rotor Gearbox: Inspect main rotor gearbox, especially around gearbox mounts, cap mounting lugs, and mast tube for cracks. Verify no contamination and no deterioration of rubber mounts. Verify security of Hall Effect senders. Check Telatemp for overtemp indications.

Main Rotor Gearbox Oil: With ship on level ground, verify correct oil level and cleanliness using sight gage. If required by Section 1.101, drain and flush gearbox per Section 1.120.

Main Rotor Gearbox Chip Detector: If required by Section 1.101, clean chip detector per Section 1.115.

Upper Steel Tube Frame: Use an inspection light and mirror to inspect each weld, verify no cracks or corrosion.

> **CAUTION**
>
> Upper steel tube frame is fatigue-loaded and therefore susceptible to fatigue cracks. Inspect thoroughly.

Horizontal Firewall: Inspect upper and lower surfaces of horizontal firewall, especially where bolted to steel structure, for cracks, buckling, or wrinkles. Inspect firewall under fuel tank for leakage (fuel residue).

Fuel Tanks: Inspect condition of visible portion. Verify no leaks. Verify security.

Auxiliary Fuel Tank Fuel Line: Inspect condition. Verify clearance to structure. Verify no leakage. Verify security.

Fuel Return Lines & Pressure Relief Valve (IO-540 only): Inspect condition. Verify no leakage. Verify security. N/A

Fuel Gage Senders & Wiring: Inspect condition. Verify no leaks.

Fuel Tank Vents: Check vent tube connections for security.

Fuel Tank Sump Drains: Verify both drain valves open easily, drain fuel freely, spring closed, and seal completely. Verify D663-1 shut-off clamp on aux tank drain tube seals completely, and inspect clamp and tube for damage and deterioration.

Low Fuel Warning: Turn MASTER switch on. With a clean wooden dowel, gently depress low-fuel sender float in main fuel tank and verify LOW FUEL warning light illuminates. Turn MASTER switch off.

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2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Fuel Caps: Inspect condition, to include gasket. Verify security when closed. Verify alignment marks on cap and tank align when cap is fully closed.

Nuts and Bolts: Inspect all nuts and bolts in this area for movement and looseness.

Cabin Bulkhead & Forward Hydraulic Servo Mounts: Inspect bulkhead and servo mounts (if installed) for corrosion, loose rivets, deformation and cracks.

Clutch Assembly: Inspect ends of drive shaft and seals on sheave for oil leakage. Inspect shaft for corrosion, especially at shaft-to-seal junctures. Remove any light surface corrosion at shaft-to-seal junctures, and apply a suitable corrosion-inhibitor.

Upper Sheave: Inspect sheave grooves. Replace any sheave showing corrosion pitting or flaking of metalized or anodized coatings, wear through anodized coatings, roughness, or sharp ridges.

Drive V-Belts (see Section 2.507): Inspect V-belts. Verify no breakage, deterioration of rubber, cuts, fraying, oil, grease, or foreign objects.

Actuator Fuses & Holders: Inspect condition. Verify no corrosion. Verify correct fuses (14-volt systems require AGC-3 fuses while 28-volt systems require AGC-1 ½ fuses). Verify twist-to-lock function and security.

Actuator Upper Bearing and Strut: Inspect seals on both sides of bearing for damage. Inspect strut, including both rod ends, and check witness holes. Check for fretting between bearing inner races and clutch shaft. Bearing inner races should be torque striped to clutch shaft. If stripes are broken or misaligned, shaft is unairworthy. Check bearing Telatemp. Perform bearing inspection per Section 2.503 if Telatemp indication has increased without corresponding increase in ambient temperature.

Actuator Lower Bearing: Inspect as much of bearing as can be seen. Inspect fiberglass scroll area at bearing attachment brackets for signs of cracking. Check bearing seals for evidence of deterioration. Inspect lower bearing brackets for looseness or wear. Inspect bearing per Section 2.502 if discrepancies are found

Intermediate Flex Plate and Forward End of Tail Rotor Drive Shaft (see Figure 2-5): Inspect flex plate for cracks and fretting. Inspect yoke-to-drive shaft weld for cracks (steel shafts).

Tailcone Attachment: Thoroughly inspect all welds in this area for cracks, corrosion, and security of attaching fasteners. Inspect tailcone mounting area for cracks.

2.410 Inspection Procedures and Checklist (cont'd)

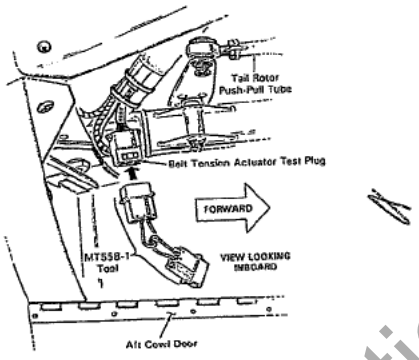

FIGURE 2-6 MT558-1 TOOL INSTALLATION

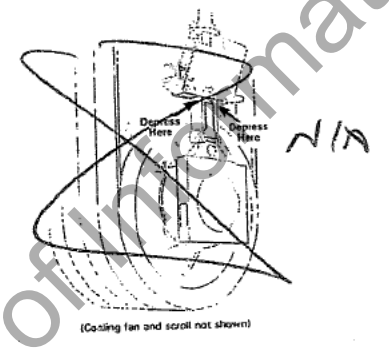

FIGURE 2-6A ACTUATOR SWITCH TEST

N/A

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Actuator (CG51): Verify clearance to structure and drive train when fully disengaged. Turn master switch on and engage clutch switch. While actuator is engaging, depress extension limit switch lever (see Figure 7-15) and verify gearmotor stops; release lever and verify gearmotor resumes running. Verify integrity of activating cable for extension limit switch. Use an inspection mirror to observe column springs at end of belt-tensioning cycle; springs should snap outward simultaneously. Verify maximum engaged extension limit per Figure 7-15 is not exceeded. Verify clearance to structure and drive train when fully engaged. Verify down-limit stop screw jam nut is tight.

Check actuator for failed-closed spring switch using either of the following two methods:

Method 1 - (actuator electrical harness must be equipped with "Test" plug per Figure 2-6)

a. With MASTER switch on and actuator fully engaged, connect one end of MT558-1 tool to actuator test plug and verify gearmotor remains off.

> **CAUTION**
>
> If gearmotor activates when installing MT558-1 tool then a spring switch has failed in closed position; immediately remove MT558-1 to prevent actuator damage.

b. Disconnect MT558-1 tool, connect opposite end to actuator test plug, and verify gearmotor remains off.

c. Disengage clutch and turn MASTER switch off.

d. MT558-1 pins 1-2 jumper tests wire 96 spring switch; pins 2-3 jumper tests wire 91 spring switch (see Figure 14-1D). Replace any malfunctioning switch per Section 7.551 before further flight.

Method 2 - (actuator electrical harness without "Test" plug)

a. Refer to Figure 2-6A. With MASTER switch on and actuator fully engaged, depress column springs on one side of actuator until springs snap inward (use large screwdriver or similar tool with several layers to tape over end to protect actuator). Hold springs inward for at least one second. Actuator motor should not run. If motor starts, allow motor to run approximately two seconds, then release pressure on column springs. Depress and hold column springs again. If motor starts again, opposite spring switch does not function properly.

b. Disengage and re-engage actuator. Repeat Step a. on opposite side column springs.

c. Replace any non-functioning switch per Section 7.551 before further flight.

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Lower Drive Sheave: Inspect lower sheave. Replace any sheave showing corrosion pitting or flaking of metalized coating, wear grooves, roughness or sharp ridges.

Sheave Alignment: Verify sheave alignment per Section 7.230. Adjust as required.

Hydraulic Reservoir: Inspect condition. Verify security and no significant leakage. If required by Section 1.101, replace filter per Section 1.170. Drain and flush hydraulic system per Section 1.180 if oil has turned dark or emits bad odor. Add fluid as required.

> **CAUTION**
>
> Cleanliness of hydraulic fluid is vital to proper system operation. Use only clean fluid from sealed containers and avoid contamination from dirty funnels, tubing, etc.

Hydraulic Reservoir Cooling Hose: Inspect condition. Verify hose is secure and is directed at center of reservoir cooling fins.

Hydraulic Pump: Inspect condition. Pump temperature indication should not exceed gearbox temperature indication. Verify security and no significant leakage.

Forward Hydraulic Servos: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Inspect condition and verify security of scissors at upper clevis of servos.

> **CAUTION**
>
> Use LPS PreSolve to clean hydraulic parts. Do not use alcohol.

Aft Hydraulic Servo: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage.. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel.

Aft Hydraulic Servo: Inspect rod ends per Section 2.120. Inspect attachment to sheet metal, verify no cracks. Verify security.

Hydraulic Lines & Fittings: Inspect condition. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Verify security and no leakage. Verify minimum 0.25 inch clearance between pump hoses and aux fuel tank.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

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Signed 25/7/2019.

2.410 Inspection Criteria (cont'd)

8. Remove Tailcone Plugs (8A) & Aft Plastic Cover (8B)

> NOTE
>
> Aft plastic cover (8B) is secured with two MS27039C0806 screws on Rev L and subsequent tailcones. On Rev K and prior tailcones ensure screws securing plastic cover are short enough to prevent interference in aft flex plate area.

Tail Rotor Drive Shaft: Inspect condition of that section of shaft that can be seen through each hole, looking for obvious defects such as cracks, bends, bows in shaft or corrosion or contact with inside of tailcone. Check runout per Section 7.340. Inspect each end of drive shaft for cracks and corrosion.

> CAUTION
>
> Bends, bowing, dents, cracks and corrosion are cause for immediate replacement of tail rotor drive shaft.

Damper: Inspect tail rotor drive shaft damper (C041-1). Inspect bearing and housing for cracks, corrosion, wear (see Figure 2-8), and bearing seal deterioration. Inspect arms and bearings for cleanliness, cracks, bends and corrosion. Inspect bearing's inner race-to-drive shaft torque stripe.

Tailcone Exterior: Inspect tailcone exterior for nicks, scratches, corrosion, fretting between skin joints, loose rivets and dents. Inspect tailcone for cracks in vicinity of antenna mounts and battery (if installed on tailcone).

Strobe Light: Inspect lens and strobe light mount for cracks, loose rivets, and security. If split red/clear lens is installed, verify clear half of lens faces aft.

Antennas: Inspect all antennas for condition and security.

Tailcone Battery (if installed): Inspect tailcone-mounted battery condition and security. Verify no debris between battery box cover and tailcone.

Tailcone Interior: Inspect tailcone interior, especially around rivets, for cracks, fretting, and corrosion.

Tailcone Attachment: Inspect condition and security of four bolts attaching tailcone to upper frame.

Empennage: Inspect entire empennage and attachment points for damage, cracks, and loose fasteners. Check tail skid for evidence of tail strike. If evidence of tail strike is found, refer to special inspection section.

Float Stabilizer (if installed): Inspect condition and security.

Aft Flex Plate (See Figure 2-5): Inspect flex plate for cracks, fretting, and distortion. If fretting is detected, contact RHC Technical Support. Inspect security of flex plate fasteners.

Tail Rotor Drive Shaft Aft Yoke: Using inspection hole, check yoke for cracks, fretting, and corrosion.

Tail Rotor Guard: Inspect for security. Check forward mount for cracks around welded area. Inspect area around aft mount for cracking and fretting.

2.410 Inspection Criteria (cont'd)

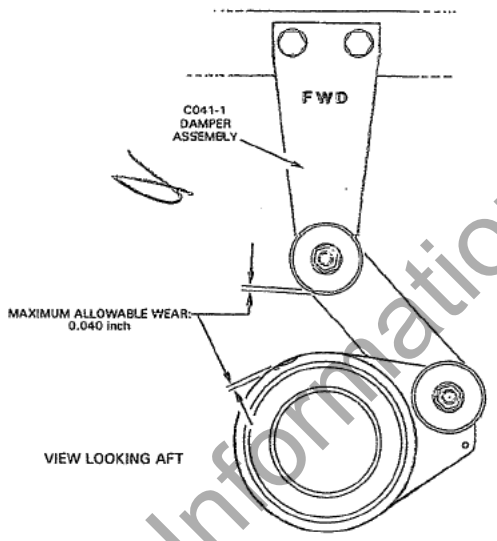

FIGURE 2-8 TAIL ROTOR DRIVE SHAFT DAMPER BEARING INSPECTION

2.410 Inspection Procedures and Checklist (continued)

9. Tail Rotor Gearbox and Tail Rotor

Input Shaft Yoke: Inspect flange and weld for cracks and corrosion.

Input Seal: Inspect for leakage.

Gearbox: Inspect general condition. Look for leakage. Check oil quantity and cleanliness through sight gage and adjust or flush as required. Check gearbox-to-tailcone mounting security. Inspect output shaft for nicks, scratches and corrosion. Check safety wire on applicable gearbox bolts. Check Telatemp.

> NOTE
>
> At 500 hours time-in-service or annually, whichever occurs first, remove chip detector and clean varnish from detector's magnetic probe and adjacent metal body (a toothbrush dampened with solvent works well). Also, drain and flush gearboxes at intervals not to exceed 500 hours time-in-service (refer to Section 1.101).

Pitch Control Assembly and C121-17 Push-Pull Tube: Check pitch control assembly for free movement throughout its entire range and for looseness on output shaft (0.25 inch maximum rotational play measured at pitch link attach bolt). Inspect bellcrank for cracks and ensure free movement. Pay special attention to spherical bearing atop stud protruding from underside of pitch control; it is permissible to have a single radial crack in the spherical bearing ball. Inspect aft end of C121-17 push-pull tube for cracks and check rod end for excessive looseness (refer to R44 SB-43A).

Pitch Links: Check rod ends for excessive looseness. If equipped with one-piece pitch links, disconnect and rotate inboard end outboard as required to obtain maximum service life.

Tail Rotor Blades: Inspect blade surfaces for excessive erosion, nicks, scratches, cracks, and corrosion. Check tail rotor blade root fitting bearings for fretting and looseness. Loose bearing outer race in root fitting is unairworthy, requiring replacement of blade. C029-1 blades only: remove tip covers, inspect for debris and corrosion, & reinstall covers. C029-1 or C029-2 blades only: Inspect tail rotor blades for fatigue cracks per R44 SB-83. Refinish blades per Section 9.460 if excessive erosion is found.

Hub Plates and Hub: Inspect for cracks and corrosion, paying special attention to areas around blade and hub mounting bolts. Ensure teeter hinge bearing outer races move with hub and bearing inner balls and retaining nut and bolt remain stationary when hub is teetered. Hub should move freely on bearings without stiffness or jerkiness. Check teeter hinge bearings for excessive play. For elastomeric bearings inspect per Section 2.125.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

2.410 Inspection Procedures and Checklist (continued)

10. Open Mast Fairing (9)

Mast Fairing: Inspect condition, especially where stiffeners intersect ribs.

Lower Swashplate Scissors: Inspect condition of scissors. Check rod end and bearing play. Check jam nut.

Vertical Push-Pull Tubes: Inspect for general condition and corrosion. For manual controls, inspect push-pull tube sleeves at rollers and guide.

Rod Ends: Check push-pull tube rod ends per Section 2.120.

Plastic Rollers and Guide (manual controls): Inspect plastic rollers and guide for cleanliness, security, and deterioration.

Pitot Tube: Inspect pitot line and tube, giving special attention to connecting area, for bending, cracking and kinking. Verify pitot tube elbow drain hole is unobstructed.

Fuel Tank Vents: Inspect condition and security of fuel tank vent tube clamps. Ensure pitot line is not chafing fuel vent tubes. Check tube connections. Verify tubes are unobstructed and are not kinked, pinched, or chafing.

Mast Fairing Ribs: Inspect for cracks especially around mast tube attachments.

11. Rotor Hub Area

Swashplate Lower Scissors: Inspect condition. Inspect rod ends per Section 2.120. Verify security.

Swashplate Upper Scissors: Inspect condition. Inspect rod ends and spherical bearings per Section 2.120. Measure scissors play per Figure 2-9. Observe scissor linkage while having someone raise and lower collective. Verify bolt, journals (or spherical bearing balls and spacers), and arm rotate together at each scissor linkage pivot. Verify operating clearance.

Swashplate Slider Tube: Inspect condition. Verify no cracks at rivet holes or corrosion on base. Verify no damage to, or wear through, anodized tube surface.

Remove Swashplate Boot Lower Ty-rap: Lift boot from swashplate. Using an inspection mirror, inspect area between main rotor drive shaft and inside of slider tube. Verify no corrosion and no debris. Verify no boot damage.

Swashplate: Inspect condition. Verify 0.020 inch maximum radial play between swashplate ball and slider tube. Rotate rotor by hand and verify operating clearance and no rough or dry bearings.

Swashplate Tilting Friction: Observe swashplate ball from below and have someone move collective stick slowly up & down. Verify swashplate ball immediately moves with swashplate when swashplate reverses direction. Movement of swashplate without attendant ball movement indicates axial play between ball and swashplate; adjust swashplate tilting friction per Section 8.413.

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2.410 Inspection Procedures and Checklist (continued)

11. Rotor Hub Area (continued)

Install Swashplate Boot Lower Ty-rap: Verify correct boot position and security and no boot damage.

Hub: Inspect condition. Verify no nicks, scratches, gouges, or corrosion. If main rotor imbalance is suspected, check teeter and coning hinge friction per Section 9.124. Verify no brown or black residue (indicates bearing wear).

Hinge Bolts: Inspect condition. Verify cotter pins are in place and secure. Verify bolt heads and nuts are torque striped to thrust washers.

Pitch Links and Rod Ends: Inspect condition. Inspect rod ends per Section 2.120, including centering. Verify security, including jamnut tightness and proper safety wiring.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

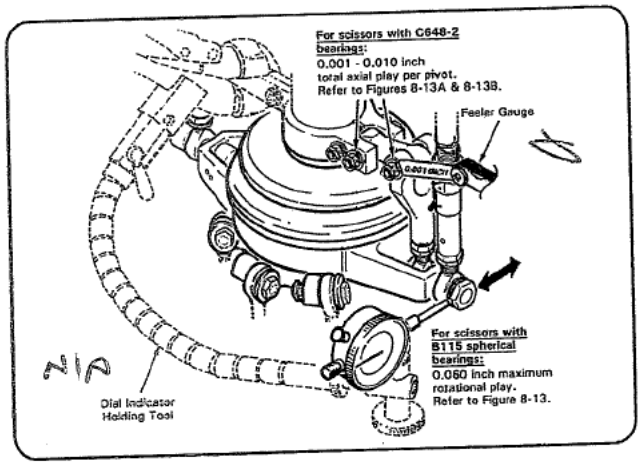

FIGURE 2-9 MEASURING UPPER SWASHPLATE ROTATIONAL PLAY
(Identify scissors bearing type and measure as shown)

2.410 Inspection Procedures and Checklist (continued)

12. Main Rotor Blades

Boots: Inspect condition. Verify no boot damage or oil leakage. Verify proper boot position and security. Verify sufficient clearance from hub assembly through full control travel.

Blade Spindles & Root Fittings: Inspect area for damage per § 9.133. Verify proper installation and security of visible fasteners. Renew deteriorated torque stripes per Figure 2-1.

C016-7 Main Rotor Blade Inspection: Remove tip covers. Remove corrosion and loose paint from tip covers, blade tips, and skin-to-spar bond lines. Epoxy prime, or prime and paint, any exposed bare metal on tip covers, blade tips, and skin-to-spar bond lines. Using an AN970-4 washer or 1965-or-later U.S. quarter-dollar coin, tap-test critical bond areas and verify no dull or hollow sounds. Visually inspect critical bond areas and verify no separation. Install tip covers, ensuring cover edges are flush with blade profile.

C016-2 or C016-5 Main Rotor Blade Bond Inspection: Perform R44 SB-72A or subsequent.

Main Rotor Blade Inspection: Inspect skins and doublers for scratches and corrosion per § 9.131. Inspect blades for dents and local deformations per § 9.132 and for voids per § 9.134. As required, wax blades with soft cleaning cloths using carnauba-type wax (such as SC Johnson® Paste Wax). Ensure tip cover and blade tip drain holes are unobstructed.

WARNING

Structural damage may occur if compressed air is applied to blade tip drain holes.

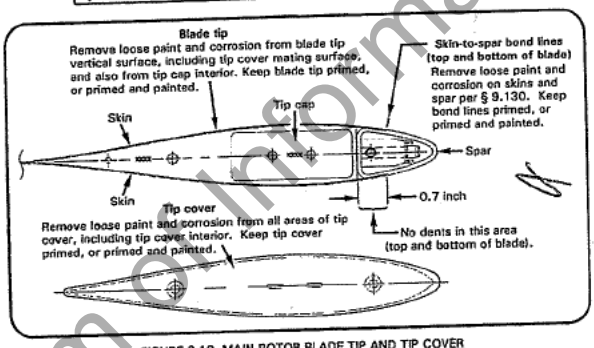

FIGURE 2-10 MAIN ROTOR BLADE TIP AND TIP COVER

2.410 Inspection Criteria (cont'd)

12. Main Rotor Blades (Refer to Section 9.130 for damage and repair limits) (cont'd)

Install tip covers: Verify security.

Fasteners & Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

13. Scroll Area

Fanwheel Assembly: Clean and inspect fanwheel assembly for cracks and corrosion. Check leading edge of vanes for damage. Verify spring pin and fanwheel alignment marks are aligned (see Figure 2-11); remove fanwheel and inspect mating surfaces for damage if misalignment is evident.

Fiberglass Scroll: Inspect fiberglass scroll for cracks and contact marks from fanwheel. Inspect flexible seal around scroll inlet for any rips or damage. Inspect vane assembly in right upper scroll for damage. Verify drain hole is unobstructed.

Scroll Metal Inlet Lips &Gap: Verify 0.030 / 0.090 inch gap between lips and fanwheel inlet (elongate lip attach holes as required to adjust gap).

14. Engine

Refer to Section 1.101. Refer to Lycoming Operator's Manual (P/N 60297-10 sections 4 and 5), Lycoming SI 1080B, and applicable engine component manufacturer's maintenance publications for 100-hour or annual inspection and service procedure.

Engine Cooling Panels: Inspect condition. Pay particular attention to panel(s) mounting oil cooler(s) and panel attached to alternator cooling hose. Verify no cracks or missing or loose fasteners. Verify security.

Alternator & Pulley: Inspect condition. Verify steel pulley (use magnet); aluminum pulley is not approved. Verify security. Verify electrical wiring security.

Alternator Belt: Inspect condition. Replace belt if there are any cracks, missing teeth, or delamination. Check tension per Lycoming Service Instruction 1129 (latest revision). Verify proper belt alignment.

Emergency Spare Alternator Belt: Remove if installed.

Alternator Cooling Hose: Inspect condition. Verify no obstructions or holes. Verify security.

Air Conditioning Refrigerant Lines (if installed): Verify security, no damage, and clearance to adjacent structure. Verify dust caps installed on servicing fittings at vertical firewall.

Air Conditioning Compressor (if installed): Verify security.

Air Conditioning Compressor Drive Belt (if installed): Inspect condition. Verify 4.5/5.5 pounds force applied at mid-span of belt causes 0.11/0.17 inch belt deflection; adjust as required.

Muffler Elbow & Tailpipe Shields: Verify no cracks in shields and shield attaching brackets. Verify clamp security.

2.410 Inspection Criteria (cont'd)

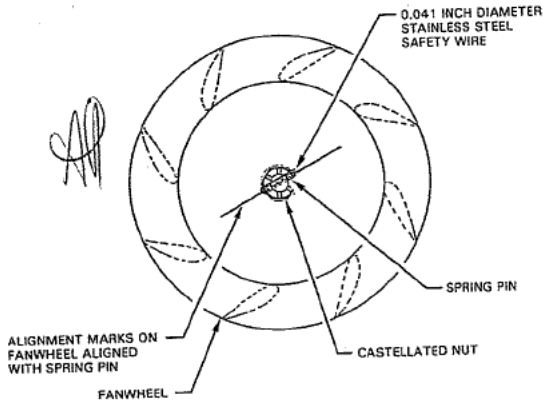

FIGURE 2-11 FANWHEEL ALIGNMENT MARKS

s 22

5/N 0144 284/205

2.410 Inspection Procedures and Checklist (cont'd)

15. Exhaust System

Remove muffler heater shroud screws, and open shroud. Inspect muffler outer wall for cracks, deformation, and ruptures. Pay particular attention to tailpipe and riser attachment areas, welds, clamps, supports, riser flanges and gaskets. Pressurize muffler with low pressure air and inspect for leakage. Close and secure heater shroud.

16. Landing Gear

Skids and Shoes: Inspect left and right landing gear skids and skid shoes; minimum allowable shoe thickness is 0.05 inch. Verify drain holes are open (not applicable to float landing gear).

Struts and Elbows (open fairings if installed): Inspect for cracks and corrosion, especially at elbow joints. Inspect weld area at bottom of strut for cracks.

Landing Gear Fairings (if installed): Inspect for cracks and loose rivets. Verify security.

Crosstubes: Inspect, especially at elbow joints, for cracks and corrosion. With helicopter on level ground, measure distance from ground to tail skid. If dimension is less than 30 inches, one or both cross tubes must be replaced (see Section 5).

Landing Gear Attach Points: Check forward attach points for loose rivets, cracks, buckling, and fretting. Check bearing mounts for loose swages and worn bearings.

Utility Floats (if installed): Inspect for damage. Refer to Pilot's Operating Handbook for proper inflation pressure.

Pop-out Floats (if installed) Pressure Cylinder & Valve: Inspect condition. Verify security. Verify pressure gage indicates correct pressure for ambient temperature; refer to placard on cylinder for limits.

Pop-out Floats (if installed) Inflation Manifold: Inspect condition. Verify no chafing or pinching of hoses, especially where hoses pass thru structure.

Pop-out Floats (if installed): Inspect condition of stowed floats. Verify no holes, cuts, tears, abrasion thru, or unraveling of, float covers. If cover damage is found, inflate and inspect floats. Verify all float cover snaps and hook-and-loop fasteners are properly secured. Verify float-to-skid attachment security.

NOTE
Annually apply A257-7 dry-film lubricant (see Section 1.470) to float cover snap mating surfaces. Annually perform Section 5.630 leak check. Every three years, perform Section 5.640 emergency inflation test.

2.410 Inspection Procedures and Checklist (cont'd)

17. Cabin

Verify no loose equipment that might foul controls.

Static Ports: Inspect static ports for obstructions. If fixed utility floats are installed, verify air dam installed aft of both static ports.

Rear Seat-Bottom Suspension Straps: Inspect condition and security.

Seat Belts and Shoulder Harnesses: Inspect for fraying and broken stitching. Check inertia reels for proper operation by pulling harness quickly to verify locking function. Check buckles for proper operation. Check belt and reel attach points for security.

NOTE
TSO tag not required on factory installed harnesses.

Trim Controller (Manual flight controls only) : Adjust trim controller per Section 14.710.

Windows: Minor damage that does not impair pilot's visibility or indicate impending structural failure is acceptable. For cracks and crazing adjacent to windshield retainer strips, refer to Section 2.580.

Acceptable damage includes:

a. One nick, not more than 0.010 inch deep and occupying an area not larger than 0.25 by 0.50 inch per square foot.

b. Scratches not more than 0.010 inch deep and 5 inches long.

c. Any surface defect such as small spots or stains that can be removed with light polishing.

d. Minor polarization faults in small areas of windshield near edges.

Skin: Inspect skin for damage. Inspect for loose rivets, indicated by cracked paint and/or black residue around heads.

Doors: Inspect for cracks around hinges and latches. Check vents for operation. Ensure hinge pins are secured with cotter pins. Check tightness of hinge mounting screws. Verify proper operation of door latching and locking mechanisms.

Chin Drains (R44 Clipper): Verify no obstructions.

18. Special Equipment (if installed)

Peak Beam Searchlight: Check for proper operation. Align beams by focusing both lights to smallest spot possible and shining against a wall at least 100 feet away. Verify both spots hit same point within one foot.

Nose Gimbal and Monitors: Turn power on and verify infrared units complete cool down sequence in manufacturer's recommended time. Verify gimbal steers smoothly in azimuth and elevation. Check focus and zoom of infrared/video. Check for clear images on monitors. Verify retractable monitor retracts without interference.

2.410 Inspection Procedures and Checklist (continued)

18. Special Equipment (if installed)

Spectrolab Searchlight: Verify light starts and cooling fan operates. Verify searchlight steers smoothly in azimuth and elevation. For slaved units, turn on slaving and verify light follows nose gimbal approximately.

FM Radios: Verify radios transmit and receive properly and control head programs radios properly.

Video Tape Recorder: Verify all video tape recorder modes operate properly and remote control correctly controls modes.

Overhead Light: Verify overhead light on/off.

Transmit and Intercom Switches: Verify proper operation of special transmit and intercom switches.

Talent Light: Verify talent light on/off, acceptable friction.

Micro Cameras: Verify all micro cameras are selectable from video switcher and produce focused, upright images on monitors.

TV Tuner: Verify TV tuner receives broadcasts (video clear on monitors, audio clear in headset).

Microwave Antenna: Verify omnidirectional microwave antenna extends/retracts properly. Verify up/down indicator lights function properly.

Electromagnetic and Radio Frequency Interference: With all special equipment turned on, check for EMI/RFI with tach, COM, intercom, compass, or other systems.

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs

Life-Limited Parts: Replace life-limited parts that have reached maximum service life per § 3.300. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations.

Component Overhaul: Replace components that have reached maximum service before overhaul per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations.

Component Retirement: Replace components that have reached maximum service life per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations.

Airworthiness Directives: Verify applicable airframe, engine, and accessory Airworthiness Directives (ADs) have been performed according to AD compliance procedures. Some aircraft may be affected by ADs that require recurring inspections at less than 100-hour or annual intervals. Recent U.S. Airworthiness Directives are available online at www.faa.gov.

2.410 Inspection Procedures and Checklist (continued)

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs (continued)

Service Bulletins: Verify applicable airframe, engine, and accessory Service Bulletins (SBs) have been complied with according to manufacturers' instructions. Some aircraft may be affected by SBs that require recurring inspections at less than 100-hour or annual intervals. RHC Service Bulletins are available online at www.robinsonheli.com, under the Publications tab.

20. Required Documents and Placards

Documents: Check that required documents (Airworthiness Certificate, Registration, applicable Radio Station License, Pilot's Operating Handbook, Equipment List/Weight & Balance Data) are on board, legible, and current.

Placards: Verify required placards are properly installed, legible, and current. Refer to Pilot's Operating Handbook Section 2 for placard requirements.

21. Inspection and Access Covers

Foreign Objects Removed: Verify all tools, loose hardware, rags, and other foreign objects are removed from helicopter.

Covers Closed and Secure: Install/close all inspection and access covers removed in preceding steps. Verify security of all access covers.

Clipper I Airbox Sealed: Ensure air box cover perimeter is sealed with aluminum tape (Clipper I models only).

22. Maintenance Records

Maintenance Records: Verify maintenance records are accurate, legible, and complete. Enter maintenance performed (such as part replacement, equipment adjustments, servicing, and lubrication) and inspection data. Data must include a description of (or reference to data acceptable to the Administrator) the work performed, date, helicopter total time in service, signature, certificate type and certificate number of person approving aircraft for return to service.

Inspection Procedures s 22 [redacted]

Mechanic's signature: [redacted] Date: 29/7/19

s 22 [redacted] 94457 29/7/19

VH-NBY J/N:299.

TABLE 1 SCHEDULED MAINTENANCE AND INSPECTIONS	First 10 hours	First 25 hours	First 100 hours	Every 50 hours	Every 100 hours	Every 300 hours	Every 500 hours	Every 2200 hours	Every 4 months	Every 12 months	Every 24 months	Every 3 years	Every 4 years	Every 12 years	Every 15 years
Perform maintenance & inspection per Lycoming Operator's Manual.*	•	•		•	•	•									
Perform **Lycoming SI 1129B** *Methods of Checking DC Alternator and Generator Belt Tension.*		•			•										
Perform **Lycoming SI 1191A** *Cylinder Compression.*					•										
Perform **Lycoming SI 1080C** *Maintenance Items for Special Attention.*				•	•										
Perform **Lycoming SB 301B*** *Maintenance Procedures and Service Limitations for Valves.*						•									
Perform **Lycoming SB 366B** *Carburetor Throttle Body Screw Inspection.*					•										
Perform **Lycoming SB 342F (IO-540 Only)** *Fuel Line (Stainless Steel Tube Assy.) and Support Clamp Inspection & Installation. Reference AD 2011-26-04.*					•										
Perform **Lycoming SB 388C** *Procedure to Determine Exhaust Valve and Guide Condition.*			•			•									
Perform **Lycoming SB 480E** *I. Oil & Filter Change & Screen Cleaning / II. Oil Filter/Screen Content Inspection.*		•		•					•						
Perform **TCM SB 643B** *Maintenance Intervals for All TCM & Bendix A/C Magnetos & Related Equipment.*					•		•						•		
Perform **TCM SB 658** *Distributor Gear Maintenance.*							•								
Perform **TCM SB 663A** *Two-Wire Magneto Tach. Breaker Contact (Points) Assy. P/N 10-400507.*							•						•		
Perform 100-hour/annual maintenance & inspection per § 2.400.					•					•					
Lubricate C181-3 bearing per § 1.140.						•						•			
Replace hydraulic filter per § 1.170.						•									
Drain and flush gearboxes per § § 1.120 & 1.130.							•								
Clean gearbox chip detectors per § 1.115.							•			•					
Perform clutch assembly lubricant inspection & servicing per § 7.210.							•								
Service collective spring (manual controls) per § 8.221.							•								
Verify magneto drive cushion pliability.							•						•		
Overhaul helicopter per § 2.700.								•							
Inspect emergency locator transmitter (ELT) per 14 CFR § 91.207.										•					
Perform pop-out float leak check per § 5.630.										•					
Test and inspect transponder per 14 CFR § 91.413.												•			
Perform pop-out float inflation check per § 5.640.													•		
Perform pop-out float pressure cylinder hydrostatic test.*													•		
Perform 12-year maintenance and inspection per § 2.600.														•	
Pop-out float pressure cylinder maximum life.															•

* Shorter interval than published on referenced document/decal.

VH-NBY J/N: 299

ROBINSON
HELICOPTER COMPANY
2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-99

DATE: 03 July 2019

TO: R44-series Owners, Operators, and Maintenance Personnel

SUBJECT: 24-volt Battery Electrolyte Leakage

EFFECTIVITY:

- R44 II Helicopter S/N 10410 thru 14327, 14331, and 14334, except 10915, 11049, 11429, 11529, 11611, 12415, 14269, 14304, 14318, and 14321;
- R44 Helicopter S/N 2421 thru 2582 and 2587, except 2577 and 2580; and
- R44 Cadet Helicopter S/N 30001 thru 30055, except 30047.

TIME OF COMPLIANCE: Within next 100 flight hours or by 30 September 2019, whichever occurs first.

BACKGROUND: RHC has received reports of B237-4 (Concorde RG24-15) batteries leaking electrolyte. Concorde recommends rubber support strips be added for batteries installed in the engine compartment and batteries installed under the left front seat be rotated to the upright position. Concorde has also revised their manufacturing procedures to reduce the likelihood of battery leakage.

COMPLIANCE PROCEDURE:

1. For each affected helicopter, determine location of battery. If battery is located in the engine compartment and oriented on its side (per R44 IPC Figure 96-13), order one KI-264-1 Battery Support Strips Installation Kit. If battery is located under the left front seat, order one KI-264-2 Battery Installation Upgrade Kit.
2. Install KI-264-1 or -2 kit per kit instructions.
3. Make appropriate maintenance record entries.

APPROXIMATE COST:

Parts: No charge for KI-264-1. $385 for KI-264-2, discounted to $190 if ordered by 30 September 2019. Reference helicopter serial number.

Labor: 0.5 man-hours to install KI-264-1 kit.
3.0 man-hours to install KI-264-2 kit.

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

KIT PARTS ORDERED VIA HELIBIZ C/W.

s 22 [redacted] 594457 20/7/2019

VH-NBY S/N 479

ROBINSON
HELICOPTER COMPANY
2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-100

DATE: 03 July 2019

TO: R44 II Owners, Operators, and Maintenance Personnel

SUBJECT: R44 II Induction Hose

EFFECTIVITY: R44 II Helicopters S/N 10001 thru 14314, except 14269, 14287, 14299, and 14304. Also spare A785-31 hoses shipped thru March 2019.

TIME OF COMPLIANCE: Within next 100 flight hours or by 31 August 2019, whichever occurs first.

BACKGROUND: RHC has received reports of A785-31 engine air induction hoses with separation between their outer and inner layers. A separated inner layer can block engine induction air flow. Service Bulletin SB-97 requires replacement of certain suspect hoses. This bulletin requires a one-time inspection of all hoses.

COMPLIANCE PROCEDURE:

1. For installed hoses, remove right side engine cowling and remove A785-31 hose.
2. Visually inspect inside of hose to verify no separation between outer and inner layers. Also, flex the hose in all directions and listen for a crinkling sound, which is an indication of separation. (An airworthy hose does not make a crinkling sound when flexed.)
3. Replace any installed hose with any indication of separation. Return to RHC or discard any spare hose with any indication of separation.
4. Make appropriate maintenance record entries (appropriately tag spares inventory in accordance with local procedures.) Notify RHC Technical Support of any hose where indications of separation were found.

APPROXIMATE COST:

Parts: None for hose inspection. $134 for replacement of A785-31 hose.

Labor: 0.2 man-hour (in conjunction with scheduled oil change).

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

N/A DUE A/C S/N

s 22 [redacted] 9144J 20/7/2019

Pearl Coast Heli Maintenance

Job # : **369**

Rego : **NBY**

AFTTIS : 291.00

Start Date : 03-07-2020

Finish Date : 3-7-2020

Customer : Ultimate Outback Experience

Job Type : Airframe Inspection

Coordinator : s 22 [redacted]

Description : Pilot Reported Tail rotor Vibe

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 369

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : 3/7/20
Licence No : 760877

Component	Counter	Total
Airframe	Hours	291
Airframe	Days	03-07-2020

Work Required : Additional Work Pilot Reported Tail Rotor Vibe

ATA Code :

Task No 001
Category Airframe
Monitor By
Interval
Due
To Run

Action Taken :

C/O T/R Balance Check Found To Be 0.05ips Within Limits No adjustments made NDF Owner Was Notified Check Flight To Be Carried Out

Labour Hours

A.M.E
L.A.M.E s 22 [redacted]
Licence No 760877
Date 3-7-20

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Co-Ordination and Final Certification

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Owner : Ultimate Outback Experience
Operator : Ultimate Outback Experience

Job No : 369
Job Description : Pilot Reported Tail rotor Vibe

M/R Date of Issue	/ /
Expired M/R Serial No.	
Issued M/R Serial No.	
Aircraft TTIS	291

L.A.M.E CERTIFICATION

I hereby certify that all maintenance in the category(s) for which I am responsible have been completed.

Categories covered during this inspection - Certifications

Airframe	s 22 [redacted]	Licence Number	760877	Date	3-7-20	For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Engines		Licence Number		Date		For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Electrical		Licence Number		Date		For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Instrument		Licence Number		Date		For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Radio		Licence Number		Date		For & on behalf of:	Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Independent Inspection Certificate Pursuant to CAR 42G. Inspection carried out on the following :

1st Inspection Signature :		Licence Number	
2nd Inspection Signature :		Licence Number	

CO-ORDINATING CERTIFICATION

I hereby certify for the completion and co-ordination of the entire inspection.

LAME Signature :	s 22 [redacted]	LAME Licence No :	760877	Date	3/7/20	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

A CERTIFICATION ABOVE CONSTITUTES A CERTIFICATION PURSUANT TO CAR42ZE THAT ALL MAINTENANCE HAS BEEN PROPERLY CERTIFIED. Note: The person who certifies for the completion and co-ordination of the entire inspection or workpackage contents is to ensure that any maintenance performed during the inspection has not invalidated a certification already made in another category and has been completed and properly certified.

Engineering Work Package Pearl Coast Heli Maintenance Pty Ltd COA - 0686

JOB DETAILS

Job Number	369	Date Raised	03/07/2020	AF TTIS	291
Aircraft Registration	VH-NBY	Date Completed	3-7-20	Engine TTIS	291
Operator	Ultimate Outback Experience	Approved Maintenance Data (Airframe)	RHC R44 RTR 460 Maintenance Manual Rev Aug 2019	Landings/Starts	
Aircraft Type	R44			Cycles	
Operator Base	Pearl Coast Heli Maintenance	Approved Maintenance Data (Engine)	Lycoming O-540 Operators Manual Rev March 2009	RINS	

Job Description : Pilot Reported Tail rotor Vibe

SIGNATURE SIGN OFF	Name	Licence No.	Signature & Initial	Trade Type	Hours
Job Coordinator	s 22	760877	s 22	131.4	
AME/LAME					

TEMPORARY LOCATION RECORD

This document records the assessment made by the Chief Engineer before carrying out maintenance at a Temporary Location. A copy of this form will be retained in the work pack for the job and a copy on file with the Chief Engineer to form the Temporary Location Register

Aircraft Type: R44 Raven I Aircraft Rego: VH-VBY Job No: 369

Job Description: Pilot Reported tail Rotor vibe

Job Location: 14 Tanami Drive Broome.

Subject **Record of Assessment**

Facility / Environment Open cement area.

Personnel s 22 [redacted]

Parts and Materials

Balance washers

Tooling and Equipment

Balancer tooling and 1/2 Dr + 3/8 Dr torque wrench.

Approved Data R44 m/m and t pc.

I certify that the assessment of the location stated in this document deems it appropriate to carry out the maintenance required and stated above.

Name: s 22 [redacted] Signature s 22 [redacted] Date: 3-7-20

Pearl Coast Heli Maintenance

Job # : **357**

Rego : **NBY**

AFTTIS : 286.90

Start Date : 01-06-2020

Finish Date : 4-6-2020

Customer : Ultimate Outback Experience

Job Type : 100Hrly/Annual Inspection

Coordinator : s 22 [redacted]

Description : 100Hrly/Annual Inspection

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 357

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 4/6/20
Licence No : 760877

Component	Counter	Total
Airframe	Hours	286.9
Airframe	Days	02-06-2020

Work Required : 100HRLY/12MONTHS 100Hrly/12Month Inspection IAW RHC R44 M/M Section 2.200

Task No 001
Category Airframe
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date 4-6-20

Work Required : 100HRLY/12MONTHS Sheave Alignment/Actuator Switch Check IAW RHC R44 M/M Section 7.230

Task No 002
Category Airframe
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O LHS 0.100 RHS 0.080 Within Limits NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date 4-6-20

Work Required : 100HRLY/12MONTHS Maintenance Flight To Be Carried Out Before Release To Service

Task No 003
Category Airframe
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date

Work Required : 300HRLY Replace Hydraulic Filter IAW RHC R44 M/M Section 1.170

Task No 004
Category Airframe
Monitor By Hours
Interval 300
Due 388.62
To Run 101.72

Action Taken : C/O NDF
P/N: AN6255-1A
CAN: PC534
P/N: MS29778-14
CAN: PC343

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date 3-6-20

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 357

Co-ordinators Signature : [redacted] s22
Print Name : [redacted] s22
Date : 4 6 20
Licence No : 760877

Component	Counter	Total
Airframe	Hours	286.9
Airframe	Days	02-06-2020

Work Required : 500HRLY/12MONTHS Clean & Test M/R & T/R Gearbox Chip Detectors Per RHC R44 M/M Section 1.115

ATA Code :

Task No 005
Category Airframe
Monitor By Days, Hours
Interval 365
Due ~~08-10-2020~~, 748.8
To Run 128 19-7-20

Action Taken :

C/O NDF ~~Entered on MR~~ ~~40 HRS~~
Entered MR.

Labour Hours

A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 4-6-20

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 357

Co-ordinators Signature : [redacted] s22
Print Name : [redacted] s22
Date : 4/6/20
Licence No : 760877

Component	Counter	Total
Airframe	Hours	286.9
Airframe	Days	02-06-2020

Work Required : 50HRLY 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 006
Category Engine
Monitor By Hours
Interval 50
Due 298.8
To Run 11.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 3-6-20

Work Required : 100HRLY 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual

Task No 007
Category Engine
Monitor By Hours
Interval 100
Due 348.8
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 3-6-20

Work Required : TCM S/B 643C 100Hrly Magneto Inspection

Task No 008
Category Engine
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 3-6-20

Work Required : LYC SI 1129B Alternator Belt Tension Check

Task No 009
Category Engine
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 3-6-20

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 357

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 4/6/20 **Licence No :** 760877

Component	Counter	Total
Airframe	Hours	286.9
Airframe	Days	02-06-2020

Work Required : LYC S/B 366C Carb Throttle Body Screw Inspection

Task No 010
Category Engine
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date 3-6-20

Work Required : LYC SI 1191A Cylinder Compression Check

Task No 011
Category Engine
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O #1 74/80 #2 /80 #3 76/80 #4 76/80 #5 76/80 #6 75/80 Within Limits NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date 3-6-20

Work Required : TCM S/B 653 Hot Magneto Test

Task No 012
Category Engine
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date 3-6-20

Work Required : LYC SI 1080C Special Attention Maintenance Items

Task No 014
Category Engine
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted]
L.A.M.E
Licence No 760877
Date 3-6-20

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 357

Co-ordinators Signature : [redacted] s22
Print Name : [redacted] s22
Date : 4/6/20
Licence No : 760877

Component	Counter	Total
Airframe	Hours	286.9
Airframe	Days	02-06-2020

Work Required : LYC S/B 595 Torque Values Ignition Harness Attach Screws

Task No 015
Category Engine
Monitor By Hours, Days
Interval 100
Due 348.8, 08-10-2020
To Run 61.9

Action Taken : C/O NDF

Labour Hours

ATA Code :
A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 3-6-20

Work Required : LYC S/B 480F 4Monthly Oil & Filter Change

Task No 016
Category Engine
Monitor By Days
Interval 120
Due 06-02-2020
To Run -117

Action Taken : ~~C/O NDF~~ Entered MK

Labour Hours

ATA Code :
A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 4-5-20

Work Required : LYC S/B 480F Oil Filter Change & Inspection

Task No 017
Category Engine
Monitor By Hours, Days
Interval 50
Due 298.8
To Run 11.9

Action Taken : ~~C/O NDF~~ Entered MK

Labour Hours

ATA Code :
A.M.E [redacted] s22
L.A.M.E
Licence No 760877
Date 4-5-20

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : PCHM004

Additional Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 357

Co-ordinators Signature : [redacted]
Print Name : [redacted]
Date : 4/6/20
Licence No : 760877

Component	Counter	Total
Airframe	Hours	286.9
Airframe	Days	02-06-2020

Item	Defect or Work Required	Rectification Details	A.M.E	L.A.M.E	Licence No.	Date
1	#2 CYL has Low compression.	Renewed #2 Kit P/N: 0542145 CRN: PC580 ARC: 15-522901 NDF	[redacted]	[redacted]	760877	4-6-20
2.	RHC R44 SB-102 CKM Hole cover	NA Due A/C SN	[redacted]		760877	4-6-20
3	RHC R44 SB-103 M/R HD Plate Removal	PCW NDF	[redacted]		760877	4-6-20
4	RHC R44 SB-104 Air oil Separator	NA Due A/C SN	[redacted]		760877	4-6-20

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No :

Co-Ordination and Final Certification

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Owner : Ultimate Outback Experience
Operator : Ultimate Outback Experience

Job No : 357
Job Description : 100Hrly/Annual Inspection

M/R Date of Issue	4 / 6 / 20
Expired M/R Serial No.	A222878
Issued M/R Serial No.	A158254
Aircraft TTIS	286.9

L.A.M.E CERTIFICATION

I hereby certify that all maintenance in the category(s) for which I am responsible have been completed.

Categories covered during this inspection - Certifications

Airframe	[redacted] s 22	Licence Number	760877	Date	4-6-20	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Engines		Licence Number	760877	Date	4-6-20	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Electrical		Licence Number	760877	Date	4-6-20	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Instrument		Licence Number	760877	Date	4-6-20	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Radio		Licence Number	760877	Date	4-6-20	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Independent Inspection Certificate Pursuant to CAR 42G. Inspection carried out on the following :

1st Inspection Signature : Licence Number

2nd Inspection Signature : Licence Number

CO-ORDINATING CERTIFICATION

I hereby certify for the completion and co-ordination of the entire inspection.

LAME Signature : [redacted] s 22 LAME Licence No : 760877 Date 4 / 6 / 20 For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

A CERTIFICATION ABOVE CONSTITUTES A CERTIFICATION PURSUANT TO CAR42ZE THAT ALL MAINTENANCE HAS BEEN PROPERLY CERTIFIED. Note: The person who certifies for the completion and co-ordination of the entire inspection or workpackage contents is to ensure that any maintenance performed during the inspection has not invalidated a certification already made in another category and has been completed and properly certified.

Engineering Work Package

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

JOB DETAILS

Job Number	357	Date Raised	01/06/2020	AF TTIS	286.9
Aircraft Registration	VH-NBY	Date Completed	4/6/20	Engine TTIS	286.9
Operator	Ultimate Outback Experience	Approved Maintenance Data (Airframe)	RHC R44 RTR 460 Maintenance Manual Rev Aug 2019	Landings/Starts	
Aircraft Type	R44			Cycles	
Operator Base	Pearl Coast Heli Maintenance	Approved Maintenance Data (Engine)	Lycoming O-540 Operators Manual Rev March 2009	RINS	

Job Description : 100Hrly/Annual Inspection

SIGNATURE SIGN OFF	Name	Licence No.	Signature & Initial	Trade Type	Hours
Job Coordinator	[redacted] s 22	760877		B1.4	
AME/LAME	[redacted] s 22		[redacted] s 22	AME	

VH-NBY JN. 357

2.200 GROUND AND FLIGHT CHECK FOR 100-HOUR/ANNUAL INSPECTION

Complete following checklists in conjunction with a 100-hour or annual inspection. Note and correct any discrepancies.

2.205 Ground Check (Aircraft not running)

1. **Throttle Control:** Check for freedom of rotation with collective full down and full up.
2. **Throttle Overtravel Spring:** Check by twisting throttle past idle position to override stop. Release throttle and ensure it returns to normal idle position.
3. **Mixture Control:** Check for smoothness of operation with no binding. Check press-to-unlock button for proper function. Verify 0.03 to 0.10 inch spring-back at full rich position.
4. **Carburetor Heat Control (O-540 only):** Check for smoothness of operation with no binding. Verify 0.03 to 0.10 inch spring-back at full off position.
5. **Cyclic Control:** With trim motors (if installed) in neutral position, verify freedom thru full travel with friction off. Verify friction knob rotates 1/8-to-1 full turn before adding friction. For hydraulic controls: Verify approximately one-half inch total longitudinal and one inch total lateral freeplay before encountering resistance. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel.
6. **Collective Control:** Verify freedom through full travel with friction off and on. For non-hydraulic aircraft, verify friction knob moves 0.3-0.6 inch before adding friction. For hydraulic controls: Verify approximately one-half inch total freeplay before encountering resistance. With carb heat assist (if installed) locked and friction lever fully off, verify C334 friction (between rear seats) within freeplay range is 4-5 pounds average measured at grip. With friction lever fully on, verify 18-22 pounds measured at grip. Verify normal hydraulic resistance with no binding or abnormal feel throughout control travel.
7. **Carb Heat Assist (if installed):** With collective down and full carb heat, raise collective full up and verify carb heat off. Lower collective full down and verify carb heat full on. With collective friction off, push carb heat off and verify collective stays down.
8. **Tail Rotor Pedals:** Check for smooth operation with no binding.
9. **Removable Controls:** Verify security of attach fasteners.

2.205 Ground Check (cont'd)

10. **Lighting and Instruments:** (Master Switch on)
    a. CARBON MONOXIDE warning light flashes twice (if installed).
    b. Carb Air Temp approximately same as Outside Air Temp.
    c. ALT warning light on.
    d. OIL pressure warning light on.
    e. AUX FUEL PUMP warning light on (IO-540 only).
    f. Fuel quantity gages - indication of fuel level.
    g. Navigation and panel lights - check function.
    h. Strobe light - check function.
    i. Landing lights - check function (clutch switch must be engaged to check landing lights).
    j. Map light - check function.
    k. Ammeter - shows discharge.
    l. Oil temperature gage - slight needle deflection with engine cold.
    m. Cylinder head temp gage - slight needle deflection with engine cold.
    n. MR TEMP light - on when sender shorted or test switch depressed.
    o. MR CHIP light - on when sender shorted or test switch depressed.
    p. ENGINE FIRE light - on when sender shorted or test switch depressed.
    q. TR CHIP light - on when sender shorted or test switch depressed.
    r. LOW FUEL light - on (slight delay is normal) when low fuel sender in tank is depressed with clean, non-sparking rod or when test switch depressed.
    s. FUEL FILTER light - on when test switch depressed (IO-540 only).
11. Verify aircraft checklist laminated card is current revision (refer to Section 1.002I).

2.210 Run Up

1. Perform POH Section 4 "Preflight" checklist.
2. Perform "Before Starting Engine" checklist.
3. IO-540 engine: Verify AUX FUEL PUMP light extinguishes during prime and illuminates after priming. Verify fuel drains from sniffle valve.

> **NOTE**
> Significant prime may be required before fuel drains from sniffle valve. Wait for valve to stop draining before starting engine. Engine will be hard starting/flooded while valve is draining.

4. Perform "Starting Engine and Run-Up" checklist. If less than 15 minutes has elapsed since Step 3, use minimum or no prime.
5. Check clutch engagement time – maximum 70 seconds.
6. Ammeter indicates charge, ALT light off.
7. Both magnetos ground (off momentarily) at 60% RPM.
8. Tachometer operates with alternator and battery switches off.
9. No unusual bearing noise when varying RPM through operating range (mechanic to listen near V-belt drive). Refer to Section 2.110 and 2.501 thru 2.503.
10. Set RPM at 75%, governor on. Increase to 85%, release throttle, and verify governor increases RPM to 101 to 102%. Increase RPM to 104%, release throttle, and verify governor decreases RPM to 101 to 102%.
11. Engine and rotor tach needles within 1% of each other at 102% RPM.
12. Verify alternator voltage as follows:
    13.4 to 13.9 vdc for A942-3 alternator control unit
    27.75 to 29.25 vdc for A942-4 alternator control unit
13. Heater operates properly.
14. Tachometer needles do not jump more than 2% when transmitting on 118.00, 125.00 , and 136.975 MHz with governor on.
15. Raise collective control 0.5 inch at grip and slowly decrease RPM. Verify low-rotor-RPM warning horn and light activate at 97% to 96% RPM and remain on as RPM is decreased to idle.

2.210 Run Up (cont'd)

16. Idle RPM with engine warm, clutch engaged, throttle closed:
    O-540 engine: 53% - 57%
    IO-540 engine: 58% - 62%
17. Idle mixture with engine warm, clutch engaged, throttle closed.
    O-540 engine: 2% to 4% RPM rise as mixture is pulled slowly to idle cut-off. Adjust idle mixture screw as required. If unable to obtain rise, set idle mixture screw 1½ turns out from fully in then adjust as required for smooth idle.
    IO-540 engine: Adjust idle mixture per Section 6.495, Step 23.
18. Check hydraulic system (if installed) operation. Using cyclic-mounted hydraulics switch, turn hydraulics OFF. Using small longitudinal cyclic inputs, there should be approximately one-half inch of freeplay before encountering stiffness and feedback. Turn hydraulics ON. Controls should be free with no feedback or uncommanded motion ("motoring"). Complete flight check with hydraulics on.
19. Air Conditioning: Verify system blows cold air on both low and high settings. Verify no EMI/RFI with other instruments and systems. After a flight with air conditioning on, verify water drains from drain tube in ship's belly (may be little or no water in very dry conditions).

s 22 [redacted]

4-6-20

2.220 Flight Check

1. Hover:
   a. All gages green.
   b. Controllability in left and right pedal turns.
   c. Cyclic electric trim (or hydraulics) zeros cyclic stick forces.
   d. Vibration levels satisfactory.
2. Level flight: Typical cruise altitude (if possible, deviate as required for weather and regulations), maximum continuous power, governor on.
   a. Vibration levels satisfactory.
   b. Cyclic electric trim (or hydraulics) zeros cyclic stick forces.
   c. Collective trim spring (electric trim system only) zeros collective forces. For hydraulic controls: Verify no feedback and collective is balanced.
   d. Fixed collective friction adequate to prevent "bounce" but not excessive (electric trim system only).
   e. Tail rotor pedal position when yaw string is centered: 0.25 to 0.75 inch right for adjustable pedals, within 0.25 inch of neutral for non-adjustable pedals.
   f. Tail rotor electric trim cord zeros pedal forces (cord applies left pedal force).
   g. For hydraulic controls: Turn hydraulics OFF and verify no excessive feedback forces.
3. Autorotate at 100 KIAS with station 99 or greater CG. Verify electric trim (or hydraulics) zeros cyclic stick forces.

2.230 Shutdown

1. Verify rotor brake functions and ROTOR BRAKE light illuminates.
2. Complete shutdown per POH checklist.

Intentionally blank

2.300 AIRFRAME PREPARATION FOR 100HR/ANNUAL INSPECTION

Thoroughly clean airframe prior to inspection. Wipe down main and tail rotor blades, hubs, and airframe exterior with a mild soap and water solution.

CAUTION

Do not spray magnetos, main rotor hub, tail rotor gearbox vent, hydraulic reservoir vent, swashplate area, or bearing seals with high-pressure water or solvent as water or solvent may enter and cause corrosion and breakdown of lubricants.

2.400 100HR/ANNUAL AIRFRAME INSPECTION

NOTE

Numbers in parentheses indicate location as illustrated in Figures 2-4 and 2-4A.

CAUTION

If pop-out floats are installed, ensure safety on pilot's red inflation lever is in LOCKED position when working on helicopter.

WARNING

Pop-out float pressure cylinder contents are under extreme pressure. If pop-out floats are installed, install locking pin in pressure cylinder valve (see Figure 5-6) when working in forward left baggage compartment, during cylinder removal or installation, and when working on floats or inflation hoses. Remove locking pin when work is completed. Avoid excessive heat (> 200 degrees F) as thermal relief valve will activate.

Perform 100 hour or Annual inspection per Section 2.410.

2.410 Inspection Procedures and Checklist

s 22

R44 Serial No.: 2544
Registration No.: VH-NBY
Hourmeter indication: 2986.9
Aircraft Total Time: 2986.9
Technician name: [redacted]
Technician Certificate number: 760879

1. Tail Rotor Pedal Bearing Blocks

NOTE

Do not remove pedal bearing block cover plates (1) unless function check of pedals indicates possible problem with pedal bearing blocks.

To remove cover plates (1) peel back carpeting and remove screws holding plates. Use an inspection light and mirror to inspect bearing blocks. Inspect for condition and looseness or play. Maximum allowable play is 0.080 inch axially and 0.030 inch radially. Inspect all weld areas in pedal controls.

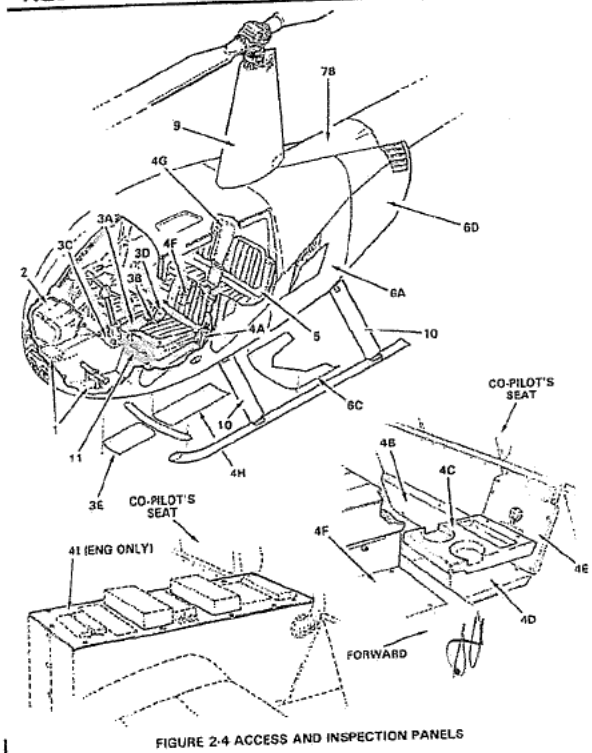

FIGURE 2-4 ACCESS AND INSPECTION PANELS

s 22 [redacted]

760879 4-6-20

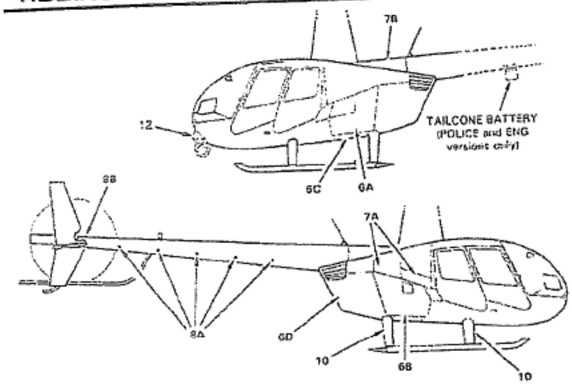

FIGURE 2-4A ACCESS AND INSPECTION PANELS

NUMBER	PART NUMBER	DESCRIPTION	NUMBER	PART NUMBER	DESCRIPTION
1	B189-4	Deflector (LH)	41	D383-1	Face (ENG only)
	A412-2 and B180-2	Cover and Deflector (RH)	5	C003-10	Seat Back Assy (RH)
				C003-11	Seat Back Assy (LH)
2	B050	Console Assy	6A	C337-1	Cowling Assy (LH)
3A	C445-1	Cover Assy	6B	C378-1	Cowling Assy (RH)
3B	C445-3	Cover	6C	D041-1	Cowling Assy - Belly
3C	C444-1	Cover	6D	D040-1	Aft Cowling Assy
3D	C398-1	Cover Assy	7A	D042-4	Door Assy
3E	C794-1	Panel		D042-4	Door Assy
4A	C690-1	Cover Assy	7B	C706-1	Tailcone Cowling Assy
4B	C461-1	Cover	8A	A231-1	Plug Assy
4C	C464-1	Tray	8B	A558-2	Cover
4D	C463-1	Cover	9	C261-1	Mast Fairing Assy
4E	C054-1	Cover Assy	10	C082-2	Fairing Assy (FWD, RH)
4F	C474-2	Cover		C087-3	Fairing Assy (FWD, LH)
4G	C474-1	Cover		C082-4	Fairing Assy (AFT, RH)
				C092-5	Fairing Assy (AFT, RH)
4H	C794-2	Panel (without scoop)	11	C045	Circuit Breaker Panel
	C794-3	Panel Assy (with scoop)	12 (Police ships)	D412-1 or D347-1	Fairing (Inframetrics Camera) / Fairing (FSI Camera)
4K	C794-2	Panel (without scoop)			
	C794-3	Panel Assy (with scoop)			

2.410 Inspection Procedures and Checklist (cont'd)

2. **Upper Console (2)**

Console (2), is opened by removing one screw on each side. With console open, inspect the following:

Pitot-Static System: Check pitot and static lines for cracking, chafing, pinching or kinking. Check all connections for security.

Flight and Engine Gages: Check all gauges for security. Inspect wiring and connections on all gages.

Radio Tray(s): Check condition and security.

Tail Rotor Controls: Check accessible portions of TR pedal assemblies for defects. Verify operating clearance.

3. **Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D), and Forward Belly Panel (3E)**

> NOTE
>
> If radio antennas are installed on removed panels, disconnect antenna lead and any ground wire. Pull respective radio circuit breaker and tag circuit breaker with "Antenna Removed".

Cyclic Box Assembly: Inspect cyclic box assembly for defects. Check cyclic stop sheet metal assembly for cracks and other defects (deterioration, distortion, loose rivets, corrosion).

Cyclic Stick Assembly: Inspect cyclic stick assembly for defects. Inspect welds for cracks.

> CAUTION
> (manual controls)
> Do not disturb clear silicone coating protecting strain gages, or attached wiring. Any damage to strain gages or wiring will disable trim system.

Cyclic Trim (manual controls): Turn master and cyclic trim switches on. Move cyclic laterally stop to stop and longitudinally stop to stop and check operation of trim motors. Check trim motors, springs and elastic cords for clearance from all wire bundles and fuselage structure during movement and at travel limits.

Cyclic Lateral Trim Actuator (manual controls): Turn master and cyclic trim switches on. Push and hold cyclic stick against right stop until motor stops then turn trim off. Move cyclic stick to left stop to compress spring. Inspect exposed portion of shaft for wear and galling. Do not grease rod on Rev H and subsequent C056-1 spring assemblies, bearing is self-lubricating. Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic pivot.

Cyclic Longitudinal Trim Actuator (manual controls): Inspect C130-13 urethane spacer (stop). Check security of attachment to cyclic stick.

2.410 Inspection Procedures and Checklist (continued)

3. **Remove Forward Tunnel Covers (3A & 3B), Cyclic Stop Cover (3C), Inboard Collective Cover (3D) and Forward Belly Panel (3E) (continued)**

Cyclic Friction: Check for excessive play or looseness in links and rod ends connected to cyclic stick. Verify no excessive flaring at either end of C130-2 spacer.

Cyclic Push-Pull Tube and Torque Tube: Inspect C319 torque tube paying special attention to area around blocks and end of torque tube for cracks. Inspect C121-1 push-pull tube rod end palnut and jam nut for tightness. Check witness holes on push-pull tubes. Check rod ends and bearings for excessive play and looseness. Check accessible portions of cyclic push-pull tube and torque tube for defects, including scratches. Pay particular attention to top of torque tube immediately below C348-1 anchor assembly. Inspect all nuts and bolts in cyclic controls for rotation and looseness.

Tail Rotor Push-Pull Tube: Inspect accessible portions of C121-9 tail rotor push-pull tube. Look for defects such as cracks, bends, scratches, or chafing. Check rod ends for excessive play and looseness.

Collective Friction and Stop: Inspect collective stop condition; no nicks, cuts or scratches are allowed. Check collective friction lever for security and operation. Move collective up and down and verify no bending or binding of stop. Verify collective boot's lace cannot entangle stop.

Throttle Overtravel Spring: Inspect operation of overtravel spring while operating throttle. It should move freely without any binding or jerkiness. Check play in upper and lower rod ends. Check rod ends for binding.

Wiring Harness: Inspect for chafing and clearance from controls.

Pitot and Static Lines: Inspect pitot and static lines for security and any evidence of cracking, chafing, pinching or kinking from sharp bends. Open drains and check for moisture; close drains.

Elastic Trim Cord(s): With cyclic forward-right, feel forward elastic trim cord(s) for voids which may indicate broken strands.

Heater Hose: Check heater hose for collapsed areas and chafing.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

4. **Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only)**

> NOTE
>
> If radio antenna is installed on removed panel, disconnect antenna lead and corresponding ground wire. Pull respective radio circuit breaker and tag circuit breaker with "antenna removed".

2.410 Inspection Procedures and Checklist (continued)

4. **Remove Outboard Collective Cover (4A), Collective Torque Tube Cover (4B), Tray (4C), Mid Tunnel Covers (4D & 4E), Aft Tunnel Covers (4F & 4G), Aft Belly Cover Panel (4H), and Rear Console (4I, ENG ships only) (continued)**

Collective Stick: Inspect condition of collective stick. Inspect all welds for cracks. Inspect C328-1 connecting rod assembly giving special attention to points of attachment. Inspect governor motor and governor motor arm for looseness or binding. Inspect collective-activated micro switch for cracks or loose wires.

Collective Stick Torque Tube: Verify no corrosion pitting. Apply a corrosion-preventative compound such as LPS 2, ACF-50, or Corrosion-X to any unpainted, phosphate-coated area while avoiding contaminating governor friction clutch (a foam-type applicator works well). Ensure interior of open-end "box" structures at inboard attach point and at A205 fork connection are also treated.

Aft End of Cyclic Torque Tube and Yoke Assembly: Inspect torque tube and yoke, paying special attention to area around blocks and end of torque tube for cracks. Check play in bellcrank bearings per Section 2.120. Inspect swaged bearing for movement in yoke.

Aft End of Cyclic Push-Pull Tube (C121-1) and Lower Ends of Vertical Push-Pull Tubes (C121-7): Inspect push-pull tubes for cracks. Check rod end jam nuts and palnuts for tightness and rod ends for play. Check rod end bearings for looseness. Inspect fork assembly areas. Check bearings for looseness. Check between bearings and swage for evidence of fretting.

Aft End of (C121-19) Tail Rotor Push-Pull Tube and Lower Bearing: Check witness hole. Check lower bellcrank bearing for play. Inspect all welds on support assembly for lower bellcrank and inspect surrounding sheet metal area for cracks.

Collective Push-Pull Tube (C121-19): Check for binding or nicks. Check witness holes. Check jam nuts and palnut for tightness and rod end for play.

Collective Friction Assembly: Check jam nuts and palnuts for tightness and rod ends for play. Inspect all welds on bellcrank support assembly and inspect surrounding sheet metal for cracks and corrosion.

Collective Spring Assembly (Manual Controls Only): Move collective up and down and verify no binding or cracking. Spring coils must not touch when collective is full down. Verify jam nut and palnut tightness. Verify rod ends play within limits. Verify guide rods are greased. If required by Section 1.101, service assembly per Section 8.221.

Throttle Control Linkage: Remove throttle control arm cover if cover is not transparent (under aft left seat [O-540], or inside tunnel [IO-540], at firewall). Inspect condition. Verify throttle control clearance to installed equipment and adjacent structure. Verify proper installation and security. Install cover.

Fuel Valve and Fuel Line: Inspect fuel line for damage and valve fittings for leakage (leakage is indicated by a blue or green residue, depending on fuel used, or odor of fuel). Verify no chafing of fuel lines.

Fuel Valve-to-Knob Torque Tube: Inspect condition. Verify attaching security.

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2.410 Inspection Procedures and Checklist (continued)

5. Remove Aft Seat Back Assemblies (5)

Wiring: Check wiring for security and proper installation.

Pitot and Static Lines: Check for security, chafing, and kinks.

Air Conditioning Refrigerant Lines (if installed): Verify security & no damage.

Evaporator Drain Tubes and Valve (if installed): Verify tubes are unobstructed. Place a container under sediment-tube protruding from bottom of tee-fitting into right-aft baggage compartment. Remove plug from sediment tube and allow any accumulated moisture and debris to drain. Reinstall plug. Simultaneously squeeze drain tube and sediment tube near tee-fitting and verify check-valve ball moves up momentarily.

Strobe Power Supply & Alternator Control Unit: Inspect strobe power supply and alternator control unit wiring. Inspect mounting panels for cracks.

Blind Encoder & Governor Controller: Inspect blind encoder and governor controller wiring. Inspect mounting panels for cracks.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings

Vertical Firewall: Inspect vertical firewall condition, especially around structural attachment points, verify no cracks, buckling or wrinkles.

Fuse(s) and Fuse Holder(s) (if installed on vertical firewall): Verify security and no corrosion. Verify correct fuses: -66 wire requires AGC-3 fuse. -1601/-1602 wires require AGC-5 fuse. If installed, -1226 wire requires AGC-3 fuse.

Wiring: Verify security, proper installation, and no deterioration.

Electric Fuel Pump (IO-540 only): Verify security, proper installation, unobstructed drain tube, and no leakage.

Fuel Line & Hose(s): Inspect condition. Verify security, proper installation, no leakage, & (IO-540 only) good condition of spirap insulation on fuel line between firewall & gascolator. If deteriorated, replace MS3367-5-9 ty-raps securing fuel hoses to clamps (reference R44 SB-67).

Lower Steel Tube Frames: Thoroughly inspect lower steel tube structure for corrosion and inspect all welds for cracks. Ensure frames are not chafed by wires, hoses, clamps, etc.

Engine Cooling Panels: Inspect cooling panels for cracks and missing fasteners.

Oil Cooler(s): Inspect oil cooler(s) and fittings for damage, leaks, cleanliness, and security. Check oil cooler mounting area(s) for cracks.

2.410 Inspection Procedures and Checklist (continued)

6. Remove Engine Aft (6D), Belly (6C), and both side (6A & 6B) Cowlings (continued)

Oil Lines: Inspect entire length of all oil lines and verify no cracks, abrasion, or broken clamps. Verify clearance: wires, ty-raps, and structure must not contact lines.

Gascolator: With fuel valve off, remove and clean gascolator bowl and filter screen. Verify no deterioration of gasket. If gascolator bowl is secured by threaded collar and ring, lightly lube threads and ring with A257-6 grease. Reassemble and turn fuel valve on. Safety wire after ensuring no leaks occur. Verify drain valve is secure and torque-striped.

Mixture Control: Verify mixture control moves mixture control arm stop to stop. Inspect condition and verify security of mixture control cable clamps on bracket; push and pull cable housing to ensure it does not slip in clamps. Inspect condition and verify security of mixture control cable inner wire attachment to mixture control arm. Ensure freedom of rotation between mixture control arm and inner wire retention fitting (bolt) when arm moves. Verify mixture control safety spring is properly installed (so spring force holds mixture control arm at full-rich position if inner wire breaks).

Throttle Correlation Rigging: Check per § 10.150 and adjust as required.

Full-Throttle Switch Rigging: Check per § 37-70 and adjust as required.

Air Box & Alternate Air Door: Ensure carburetor heat slider valve (if applicable) moves fully from stop to stop. Replace air filter (lubricating IO-540 air filter rubber with A257-8 rubber lubricant will facilitate sealing). Check air box for condition and security. Verify spring-loaded alternate air door opens without binding and closes completely.

Engine Air Inlet Hose: Verify correct installation & security. Verify no rips, holes, or collapsed areas. Ensure hose is not chafing frame. Remove hose. Visually inspect inside of hose to verify no separation between outer and inner layers. Also, flex the hose in all directions and listen for a crinkling sound, which is an indication of separation. (An airworthy hose does not make a crinkling sound when flexed.) Replace any hose with any indication of separation.

Carburetor Heat Scoop and Hose (O-540 engines only): Inspect for condition and security.

Heater Hose: Inspect for condition and security.

Battery and Battery Box (alternate locations under upper console or under left, front seat): Check cable terminals for cracks. Check each cell electrolyte for quantity and specific gravity if equipped with non-sealed battery. As required, perform capacity test per manufacturer's instructions or replace battery. Verify security and no obstructions in drain tube.

2.410 Inspection Procedures and Checklist (continued)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9)

Cowling Door: Inspect hinges and latches for condition and security.

Tailcone cowling: Verify no cracks, air inlet obstructions, or loose rivets.

Electrical and Antenna Wires: Inspect condition. Verify security and no chafing, kinks or tight bends.

MRGS Input Yoke: Inspect condition. Verify security and operating clearance. Verify security of magnets.

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2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Forward Flex Plate: Inspect condition, particularly edges. Verify security. Verify bonded washers are securely bonded to both sides of each flex plate arm. Verify operating clearance.

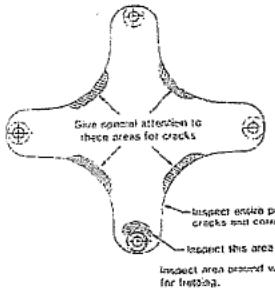

FIGURE 2-5 FLEX PLATE INSPECTION

Clutch Shaft Forward Yoke: Inspect condition. Verify no cracks, corrosion, or fretting. Verify security and operating clearance.

Rotor Brake: Inspect condition, including activating cable & pulleys and microswitch. Verify integrity of brake pads and 0.030 inch minimum pad thickness. Verify brake pad clearance to input yoke when brake is off. Verify security and operating clearance.

Jackshaft: Inspect entire welded assembly for cracks and corrosion. Inspect jackshaft supporting strut and tube weldments for security, cracks and corrosion.

Main Rotor Push-Pull Tubes: Inspect condition of viewable portions. Verify no cracks at ends. Inspect rod ends per Section 2.120. Verify no tears in sleeves (manual controls only). Verify security and operating clearances.

Main Rotor Push-Pull Tube Rollers & Bushings: (manual controls only): Inspect condition. Verify cleanliness, no wear into metal, and free movement of rollers.

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Tail Rotor Push-Pull Tube and Upper Bellcrank: Inspect C121-15 push-pull tube, especially at ends, for cracks. Check jam nut for tightness and rod end for looseness. Inspect bellcrank and mounting for cracks or other defects.

Main Rotor Gearbox Cooling Hoses: Inspect both ends for security. Inspect for rips, holes, and chafing.

Main Rotor Gearbox: Inspect main rotor gearbox, especially around gearbox mounts, cap mounting lugs, and mast tube for cracks. Verify no contamination and no deterioration of rubber mounts. Verify security of Hall Effect senders. Check Telatemp for overtemp indications.

Main Rotor Gearbox Oil: With ship on level ground, verify correct oil level and cleanliness using sight gage. If required by Section 1.101, drain and flush gearbox per Section 1.120.

Main Rotor Gearbox Chip Detector: If required by Section 1.101, clean chip detector per Section 1.115.

Upper Steel Tube Frame: Use an inspection light and mirror to inspect each weld, verify no cracks or corrosion.

CAUTION

Upper steel tube frame is fatigue-loaded and therefore susceptible to fatigue cracks. Inspect thoroughly.

Horizontal Firewall: Inspect upper and lower surfaces of horizontal firewall, especially where bolted to steel structure, for cracks, buckling, or wrinkles. Inspect firewall under fuel tank for leakage (fuel residue).

Fuel Tanks: Inspect condition of visible portion. Verify no leaks. Verify security.

Auxiliary Fuel Tank Fuel Line: Inspect condition. Verify clearance to structure. Verify no leakage. Verify security.

Fuel Return Lines & Pressure Relief Valve (IO-540 only): Inspect condition. Verify no leakage. Verify security.

Fuel Gage Senders & Wiring: Inspect condition. Verify no leaks.

Fuel Tank Vents: Check vent tube connections for security.

Fuel Tank Sump Drains: Verify both drain valves open easily, drain fuel freely, spring closed, and seal completely. Verify D663-1 shut-off clamp on aux tank drain tube seals completely, and inspect clamp and tube for damage and deterioration.

Low Fuel Warning: Turn MASTER switch on. With a clean wooden dowel, gently depress low-fuel sender float in main fuel tank and verify LOW FUEL warning light illuminates. Turn MASTER switch off.

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Fuel Caps: Inspect condition, to include gasket. Verify security when closed. Verify alignment marks on cap and tank align when cap is fully closed.

Nuts and Bolts: Inspect all nuts and bolts in this area for movement and looseness.

Cabin Bulkhead & Forward Hydraulic Servo Mounts: Inspect bulkhead and servo mounts (if installed) for corrosion, loose rivets, deformation and cracks.

Clutch Assembly: Inspect ends of drive shaft and seals on sheave for oil leakage. Inspect shaft for corrosion, especially at shaft-to-seal junctures. Remove any light surface corrosion at shaft-to-seal junctures, and apply a suitable corrosion-inhibitor.

Upper Sheave: Inspect sheave grooves. Replace any sheave showing corrosion pitting or flaking of metallized or anodized coatings, wear through anodized coatings, roughness, or sharp ridges.

Drive V-Belts (see Section 2.507): Inspect V-belts. Verify no breakage, deterioration of rubber, cuts, fraying, oil, grease, or foreign objects.

Actuator Fuses & Holders: Inspect condition. Verify no corrosion. Verify correct fuses (14-volt systems require AGC-3 fuses while 28-volt systems require AGC-1½ fuses). Verify twist-to-lock function and security.

Actuator Upper Bearing and Strut: Inspect seals on both sides of bearing for damage. Inspect strut, including both rod ends, and check witness holes. Check for fretting between bearing inner races and clutch shaft. Bearing inner races should be torque striped to clutch shaft. If stripes are broken or misaligned, shaft is unairworthy. Check bearing Telatemp. Perform bearing inspection per Section 2.503 if Telatemp indication has increased without corresponding increase in ambient temperature.

Actuator Lower Bearing: Inspect as much of bearing as can be seen. Inspect fiberglass scroll area at bearing attachment brackets for signs of cracking. Check bearing seals for evidence of deterioration. Inspect lower bearing brackets for looseness or wear. Inspect bearing per Section 2.502 if discrepancies are found.

Intermediate Flex Plate and Forward End of Tail Rotor Drive Shaft (see Figure 2-5): Inspect flex plate for cracks and fretting. Inspect yoke-to-drive shaft weld for cracks (steel shafts).

Tailcone Attachment: Thoroughly inspect all welds in this area for cracks, corrosion, and security of attaching fasteners. Inspect tailcone mounting area for cracks.

2.410 Inspection Procedures and Checklist (cont'd)

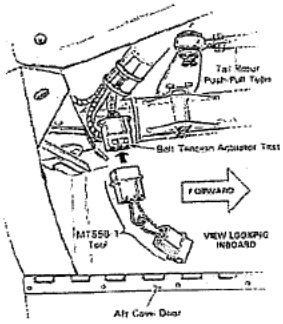

FIGURE 2-6 MT558-1 TOOL INSTALLATION

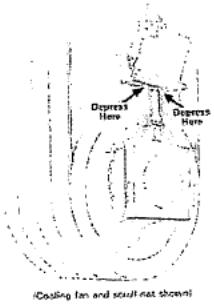

FIGURE 2-6A ACTUATOR SWITCH TEST

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Actuator (C051): Verify clearance to structure and drive train when fully disengaged. Turn master switch on and engage clutch switch. While actuator is engaging, depress extension limit switch lever (see Figure 7-15) and verify gearmotor stops; release lever and verify gearmotor resumes running. Verify integrity of activating cable for extension limit switch. Use an inspection mirror to observe column springs at end of belt-tensioning cycle; springs should snap outward simultaneously. Verify maximum engaged extension limit per Figure 7-15 is not exceeded. Verify clearance to structure and drive train when fully engaged. Verify down-limit stop screw jam nut is tight.

Check actuator for failed-closed spring switch using either of the following two methods:

Method 1 - Actuator electrical harness must be equipped with "Test" plug per Figure 2-6

a. With MASTER switch on and actuator fully engaged, connect one end of MT558-1 tool to actuator test plug and verify gearmotor remains off.

CAUTION

If gearmotor activates when installing MT558-1 tool then a spring switch has failed in closed position; immediately remove MT558-1 to prevent actuator damage.

b. Disconnect MT558-1 tool, connect opposite end to actuator test plug, and verify gearmotor remains off.

c. Disengage clutch and turn MASTER switch off.

d. MT558-1 pins 1-2 jumper tests wire 98 spring switch; pins 2-3 jumper tests wire 91 spring switch (see Figure 14-10). Replace any malfunctioning switch per Section 7.551 before further flight.

Method 2 - Actuator electrical harness without "Test" plug

a. Refer to Figure 2-6A. With MASTER switch on and actuator fully engaged, depress column springs on one side of actuator until springs snap inward (use large screwdriver or similar tool with several layers to tape over end to protect actuator). Hold springs inward for at least one second. Actuator motor should not run. If motor starts, allow motor to run approximately two seconds, then release pressure on column springs. Depress and hold column springs again. If motor starts again, opposite spring switch does not function properly.

b. Disengage and re-engage actuator. Repeat Step a. on opposite side column springs.

c. Replace any non-functioning switch per Section 7.551 before further flight.

2.410 Inspection Procedures and Checklist (cont'd)

7. Open Cowling Doors (7A), Remove Tailcone Cowling (7B) & Mast Fairing (9) (cont'd)

Lower Drive Sheave: Inspect lower sheave. Replace any sheave showing corrosion pitting or flaking of metalized coating, wear grooves, roughness, or sharp ridges.

Sheave Alignment: Verify sheave alignment per Section 7.230. Adjust as required.

Hydraulic Reservoir: Inspect condition. Verify security and no significant leakage. If required by Section 1.101, replace filter per Section 1.170. Drain and flush hydraulic system per Section 1.180 if oil has turned dark or emits bad odor. Add fluid as required.

CAUTION

Cleanliness of hydraulic fluid is vital to proper system operation. Use only clean fluid from sealed containers and avoid contamination from dirty funnels, tubing, etc.

Hydraulic Reservoir Cooling Hose: Inspect condition. Verify hose is secure and is directed at center of reservoir cooling fins.

Hydraulic Pump: Inspect condition. Pump temperature indication should not exceed gearbox temperature indication. Verify security and no significant leakage.

Forward Hydraulic Servos: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Inspect condition and verify security of scissors at upper clevis of servos.

CAUTION

Use LPS PreSolve to clean hydraulic parts. Do not use alcohol.

Aft Hydraulic Servo: Inspect condition. Inspect rod ends per Section 2.120. Verify security and no significant leakage.. Verify servo input rod end/clevis area is clean; cleanse area with no-residue, non-alcoholic solvent as required. Verify approximately 0.040 inch total freeplay at servo valve input. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel.

Aft Hydraulic Servo: Inspect rod ends per Section 2.120. Inspect attachment to sheet metal, verify no cracks. Verify security.

Hydraulic Lines & Fittings: Inspect condition. Verify valve clearance to surrounding structure while flight controls are moved through full range of travel. Verify security and no leakage. Verify minimum 0.25 inch clearance between pump hoses and aux fuel tank.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

2.410 Inspection Criteria (cont'd)

8. Remove Tailcone Plugs (8A) & Aft Plastic Cover (8B)

NOTE

Aft plastic cover (8B) is secured with two MS27039C0806 screws on Rev L and subsequent tailcones. On Rev K and prior tailcones ensure screws securing plastic cover are short enough to prevent interference in aft flex plate area.

Tail Rotor Drive Shaft: Inspect condition of that section of shaft that can be seen through each hole, looking for obvious defects such as cracks, bends, bows in shaft or corrosion or contact with inside of tailcone. Check runout per Section 7.340. Inspect each end of drive shaft for cracks and corrosion.

CAUTION

Bends, bowing, dents, cracks and corrosion are cause for immediate replacement of tail rotor drive shaft.

Damper: Inspect tail rotor drive shaft damper (C041-1). Inspect bearing and housing for cracks, corrosion, wear (see Figure 2-8), and bearing seal deterioration. Inspect arms and bearings for cleanliness, cracks, bends and corrosion. Inspect bearing's inner race-to-drive shaft torque stripe.

Tailcone Exterior: Inspect tailcone exterior for nicks, scratches, corrosion, fretting between skin joints, loose rivets and dents. Inspect tailcone for cracks in vicinity of antenna mounts and battery (if installed on tailcone).

Strobe Light: Inspect lens and strobe light mount for cracks, loose rivets, and security. If split red/clear lens is installed, verify clear half of lens faces aft.

Antennas: Inspect all antennas for condition and security.

Tailcone Battery (if installed): Inspect tailcone-mounted battery condition and security. Verify no debris between battery box cover and tailcone.

Tailcone Interior: Inspect tailcone interior, especially around rivets, for cracks, fretting, and corrosion.

Tailcone Attachment: Inspect condition and security of four bolts attaching tailcone to upper frame.

Empennage: Inspect entire empennage and attachment points for damage, cracks, and loose fasteners. Check tail skid for evidence of tail strike. If evidence of tail strike is found, refer to special inspection section.

Float Stabilizer (if installed): Inspect condition and security.

Aft Flex Plate (See Figure 2-5): Inspect flex plate for cracks, fretting, and distortion. If fretting is detected, contact RHC Technical Support. Inspect security of flex plate fasteners.

Tail Rotor Drive Shaft Aft Yoke: Using inspection hole, check yoke for cracks, fretting, and corrosion.

Tail Rotor Guard: Inspect for security. Check forward mount for cracks around welded area. Inspect area around aft mount for cracking and fretting.

2.410 Inspection Criteria (cont'd)

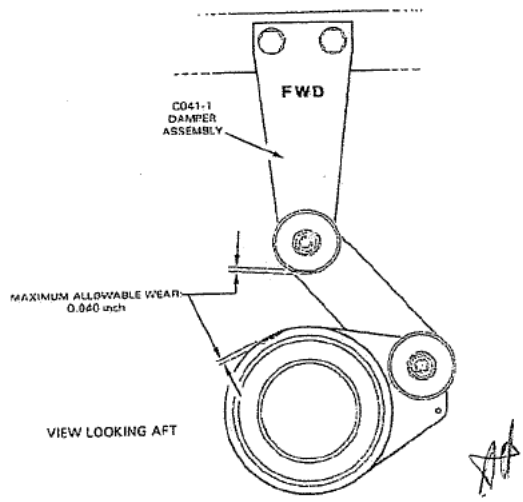

FIGURE 2-8 TAIL ROTOR DRIVE SHAFT DAMPER BEARING INSPECTION

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2.410 Inspection Procedures and Checklist (continued)

9. Tail Rotor Gearbox and Tail Rotor

Input Shaft Yoke: Inspect flange and weld for cracks and corrosion.

Input Seal: Inspect for leakage.

Gearbox: Inspect general condition. Look for leakage. Check oil quantity and cleanliness through sight gage and adjust or flush as required. Check gearbox-to-tailcone mounting security. Inspect output shaft for nicks, scratches and corrosion. Check safety wire on applicable gearbox bolts. Check Teletemp.

NOTE

At 500 hours time-in-service or annually, whichever occurs first, remove chip detector and clean varnish from detector's magnetic probe and adjacent metal body (a toothbrush dampened with solvent works well). Also, drain and flush gearboxes at intervals not to exceed 500 hours time-in-service (refer to Section 1.101).

Pitch Control Assembly and C121-17 Push-Pull Tube: Check pitch control assembly for free movement throughout its entire range and for looseness on output shaft (0.25 inch maximum rotational play measured at pitch link attach bolt). Inspect bellcrank for cracks and ensure free movement. Pay special attention to spherical bearing atop stud protruding from underside of pitch control; it is permissible to have a single radial crack in the spherical bearing ball. Inspect aft end of C121-17 push-pull tube for cracks and check rod end for excessive looseness (refer to R44 SB-43A).

Pitch Links: Check rod ends for excessive looseness. If equipped with one-piece pitch links, disconnect and rotate inboard end outboard as required to obtain maximum service life.

Tail Rotor Blades: Inspect blade surfaces for excessive erosion, nicks, scratches, cracks, and corrosion. Check tail rotor blade root fitting bearings for fretting and looseness. Loose bearing outer race in root fitting is unairworthy, requiring replacement of blade. C029-1 blades only: remove tip covers, inspect for debris and corrosion, & reinstall covers. C029-1 or C029-2 blades only: inspect tail rotor blades for fatigue cracks per R44 SB-83. Refinish blades per Section 9.480 if excessive erosion is found.

Hub Plates and Hub: Inspect for cracks and corrosion, paying special attention to areas around blade and hub mounting bolts. Ensure teeter hinge bearing outer races move with hub and bearing inner balls and retaining nut and bolt remain stationary when hub is teetered. Hub should move freely on bearings without stiffness or jerkiness. Check teeter hinge bearings for excessive play. For elastomeric bearings inspect per Section 2.125.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

2.410 Inspection Procedures and Checklist (continued)

10. Open Mast Fairing (9)

Mast Fairing: Inspect condition, especially where stiffeners intersect ribs.

Lower Swashplate Scissors: Inspect condition of scissors. Check rod end and bearing play. Check jam nut.

Vertical Push-Pull Tubes: Inspect for general condition and corrosion. For manual controls, inspect push-pull tube sleeves at rollers and guide.

Rod Ends: Check push-pull tube rod ends per Section 2.120.

Plastic Rollers and Guide (manual controls): Inspect plastic rollers and guide for cleanliness, security, and deterioration.

Pitot Tube: Inspect pitot line and tube, giving special attention to connecting area, for bending, cracking and kinking. Verify pitot tube elbow drain hole is unobstructed.

Fuel Tank Vents: Inspect condition and security of fuel tank vent tube clamps. Ensure pitot line is not chafing fuel vent tubes. Check tube connections. Verify tubes are unobstructed and are not kinked, pinched, or chafing.

Mast Fairing Ribs: Inspect for cracks especially around mast tube attachments.

11. Rotor Hub Area

Swashplate Lower Scissors: Inspect condition. Inspect rod ends per Section 2.120. Verify security.

Swashplate Upper Scissors: Inspect condition. Inspect rod ends and spherical bearings per Section 2.120. Measure scissors play per Figure 2-9. Observe scissor linkage while having someone raise and lower collective. Verify bolt, journals for spherical bearing balls and spacers), and arm rotate together at each scissor linkage pivot. Verify operating clearance.

Swashplate Slider Tube: Inspect condition. Verify no cracks at rivet holes or corrosion on base. Verify no damage to, or wear through, anodized tube surface.

Remove Swashplate Boot Lower Ty-rap: Lift boot from swashplate. Using an inspection mirror, inspect area between main rotor drive shaft and inside of slider tube. Verify no corrosion and no debris. Verify no boot damage.

Swashplate: Inspect condition. Verify 0.020 inch maximum radial play between swashplate ball and slider tube. Rotate rotor by hand and verify operating clearance and no rough or dry bearings.

Swashplate Tilting Friction: Observe swashplate ball from below and have someone move collective stick slowly up & down. Verify swashplate ball immediately moves with swashplate when swashplate reverses direction. Movement of swashplate without attendant ball movement indicates axial play between ball and swashplate; adjust swashplate tilting friction per Section 8.413.

2.410 Inspection Procedures and Checklist (continued)

11. Rotor Hub Area (continued)

Install Swashplate Boot Lower Ty-rap: Verify correct boot position and security and no boot damage.

Hub: Inspect condition. Verify no nicks, scratches, gouges, or corrosion. If main rotor imbalance is suspected, check teeter and coning hinge friction per Section 9.124. Verify no brown or black residue (indicates bearing wear).

Hinge Bolts: Inspect condition. Verify cotter pins are in place and secure. Verify bolt heads and nuts are torque striped to thrust washers.

Pitch Links and Rod Ends: Inspect condition. Inspect rod ends per Section 2.120, including centering. Verify security, including jamnut tightness and proper safety wiring.

Fasteners and Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

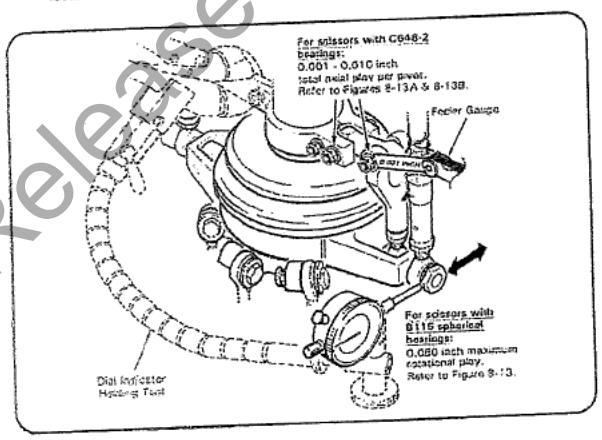

FIGURE 2-9 MEASURING UPPER SWASHPLATE ROTATIONAL PLAY
Assembly numbers bearing type and magnitude as shown)

2.410 Inspection Procedures and Checklist (continued)

12. Main Rotor Blades

Boots: Inspect condition. Verify no boot damage or oil leakage. Verify proper boot position and security. Verify sufficient clearance from hub assembly through full control travel.

Blade Spindles & Root Fittings: Inspect area for damage per § 9.133. Verify proper installation and security of visible fasteners. Renew deteriorated torque stripes per Figure 2-1.

C016-7 Main Rotor Blade Inspection: Remove tip covers. Remove corrosion and loose paint from tip covers, blade tips, and skin-to-spar bond lines. Epoxy prime, or prime and paint, any exposed bare metal on tip covers, blade tips, and skin-to-spar bond lines. Using an AN970-4 washer or 1965-or-later U.S. quarter-dollar coin, tap-test critical bond areas and verify no dull or hollow sounds. Visually inspect critical bond areas and verify no separation. Install tip covers, ensuring cover edges are flush with blade profile.

C016-2 or C016-5 Main Rotor Blade Bond Inspection: Perform R44 SB-72A or subsequent.

Main Rotor Blade Inspection: Inspect skins and doublers for scratches and corrosion per § 9.131. Inspect blades for dents and local deformations per § 9.132 and for voids per § 9.134. As required, wax blades with soft cleaning cloths using carnauba-type wax (such as SC Johnson® Paste Wax). Ensure tip cover and blade tip drain holes are unobstructed.

WARNING

Structural damage may occur if compressed air is applied to blade tip drain holes.

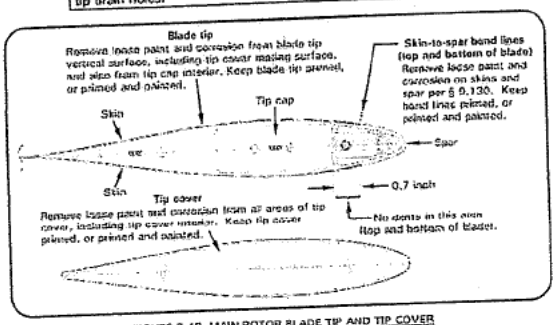

FIGURE 2-10 MAIN ROTOR BLADE TIP AND TIP COVER

2.410 Inspection Criteria (cont'd)

12. Main Rotor Blades (Refer to Section 9.130 for damage and repair limits) (cont'd)

Install tip covers: Verify security.

Fasteners & Torque Stripes: Inspect condition and verify security of all fasteners. Renew deteriorated torque stripes per Figure 2-1.

13. Scroll Area

Fanwheel Assembly: Clean and inspect fanwheel assembly for cracks and corrosion. Check leading edge of vanes for damage. Verify spring pin and fanwheel alignment marks are aligned (see Figure 2-11); remove fanwheel and inspect mating surfaces for damage if misalignment is evident.

Fiberglass Scroll: Inspect fiberglass scroll for cracks and contact marks from fanwheel. Inspect flexible seal around scroll inlet for any rips or damage. Inspect vane assembly in right upper scroll for damage. Verify drain hole is unobstructed.

Scroll Metal Inlet Lips &Gap: Verify 0.030 / 0.090 inch gap between lips and fanwheel inlet (elongate lip attach holes as required to adjust gap).

14. Engine

Refer to Section 1.101. Refer to Lycoming Operator's Manual (P/N 60297-10 sections 4 and 5), Lycoming SI 10308, and applicable engine component manufacturer's maintenance publications for 100-hour or annual inspection and service procedure.

Engine Cooling Panels: Inspect condition. Pay particular attention to panel(s) mounting oil cooler(s) and panel attached to alternator cooling hose. Verify no cracks or missing or loose fasteners. Verify security.

Alternator & Pulley: Inspect condition. Verify steel pulley (use magnet); aluminum pulley is not approved. Verify security. Verify electrical wiring security.

Alternator Belt: Inspect condition. Replace belt if there are any cracks, missing teeth, or delamination. Check tension per Lycoming Service Instruction 1129 (latest revision). Verify proper belt alignment.

Emergency Spare Alternator Belt: Remove if installed.

Alternator Cooling Hose: Inspect condition. Verify no obstructions or holes. Verify security.

Air Conditioning Refrigerant Lines (if installed): Verify security, no damage, and clearance to adjacent structure. Verify dust caps installed on servicing fittings at vertical firewall.

Air Conditioning Compressor (if installed): Verify security.

Air Conditioning Compressor Drive Belt (if installed): Inspect condition. Verify 4.5/5.5 pounds force applied at mid-span of belt causes 0.11/0.17 inch belt deflection; adjust as required.

Muffler Elbow & Tailpipe Shields: Verify no cracks in shields and shield attaching brackets. Verify clamp security.

2.410 Inspection Criteria (cont'd)

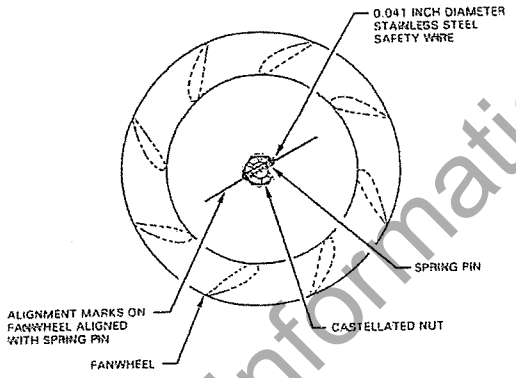

FIGURE 2-11 FANWHEEL ALIGNMENT MARKS

2.410 Inspection Procedures and Checklist (cont'd)

16. Exhaust System

Remove muffler heater shroud screws, and open shroud. Inspect muffler outer wall for cracks, deformation, and ruptures. Pay particular attention to tailpipe and riser attachment areas, welds, clamps, supports, riser flanges and gaskets. Pressurize muffler with low pressure air and inspect for leakage. Close and secure heater shroud.

16. Landing Gear

Skids and Shoes: Inspect left and right landing gear skids and skid shoes; minimum allowable shoe thickness is 0.05 inch. Verify drain holes are open (not applicable to float landing gear).

Struts and Elbows (open fairings if installed): Inspect for cracks and corrosion, especially at elbow joints. Inspect weld area at bottom of strut for cracks.

Landing Gear Fairings (if installed): Inspect for cracks and loose rivets. Verify security.

Crosstubes: Inspect, especially at elbow joints, for cracks and corrosion. With helicopter on level ground, measure distance from ground to tail skid. If dimension is less than 30 inches, one or both cross tubes must be replaced (see Section 5).

Landing Gear Attach Points: Check forward attach points for loose rivets, cracks, buckling, and fretting. Check bearing mounts for loose swages and worn bearings.

Utility Floats (if installed): Inspect for damage. Refer to Pilot's Operating Handbook for proper inflation pressure.

Pop-out Floats (if installed) Pressure Cylinder & Valve: Inspect condition. Verify security. Verify pressure gage indicates correct pressure for ambient temperature; refer to placard on cylinder for limits.

Pop-out Floats (if installed) Inflation Manifold: Inspect condition. Verify no chafing or pinching of hoses, especially where hoses pass thru structure.

Pop-out Floats (if installed): Inspect condition of stowed floats. Verify no holes, cuts, tears, abrasion thru, or unraveling of, float covers. If cover damage is found, inflate and inspect floats. Verify all float cover snaps and hook-and-loop fasteners are properly secured. Verify float-to-skid attachment security.

NOTE
Annually apply A257-7 dry-film lubricant (see Section 1.470) to float cover snap mating surfaces. Annually perform Section 5.630 leak check. Every three years, perform Section 5.640 emergency inflation test.

2.410 Inspection Procedures and Checklist (cont'd)

17. Cabin

Verify no loose equipment that might foul controls.

Static Ports: Inspect static ports for obstructions. If fixed utility floats are installed, verify air dam installed aft of both static ports.

Rear Seat-Bottom Suspension Straps: Inspect condition and security.

Seat Belts and Shoulder Harnesses: Inspect for fraying and broken stitching. Check inertia reels for proper operation by pulling harness quickly to verify locking function. Check buckles for proper operation. Check belt and reel attach points for security.

NOTE
TSO tag not required on factory installed harnesses.

Trim Controller (Manual flight controls only) : Adjust trim controller per Section 14.710.

Windows: Minor damage that does not impair pilot's visibility or indicate impending structural failure is acceptable. For cracks and crazing adjacent to windshield retainer strips, refer to Section 2.500.

Acceptable damage includes:

a. One nick, not more than 0.010 inch deep and occupying an area not larger than 0.25 by 0.50 inch per square foot.

b. Scratches not more than 0.010 inch deep and 5 inches long.

c. Any surface defect such as small spots or stains that can be removed with light polishing.

d. Minor polarization faults in small areas of windshield near edges.

Skin: Inspect skin for damage. Inspect for loose rivets, indicated by cracked paint and/or black residue around heads.

Doors: Inspect for cracks around hinges and latches. Check vents for operation. Ensure hinge pins are secured with cotter pins. Check tightness of hinge mounting screws. Verify proper operation of door latching and locking mechanisms.

Chin Drains (R44 Clipper): Verify no obstructions.

18. Special Equipment (if installed)

Peak Beam Searchlight: Check for proper operation. Align beams by focusing both lights to smallest spot possible and shining against a wall at least 100 feet away. Verify both spots hit same point within one foot.

Nose Gimbal and Monitors: Turn power on and verify infrared units complete cool down sequence in manufacturer's recommended time. Verify gimbal steers smoothly in azimuth and elevation. Check focus and zoom of infrared/video. Check for clear images on monitors. Verify retractable monitor retracts without interference.

2.410 Inspection Procedures and Checklist (continued)

18. Special Equipment (if installed)

Spectrolab Searchlight: Verify light starts and cooling fan operates. Verify searchlight steers smoothly in azimuth and elevation. For slaved units, turn on slaving and verify light follows nose gimbal approximately. NA

FM Radios: Verify radios transmit and receive properly and control head programs radios properly. NA

Video Tape Recorder: Verify all video tape recorder modes operate properly and remote control correctly controls modes. NA

Overhead Light: Verify overhead light on/off. NA

Transmit and Intercom Switches: Verify proper operation of special transmit and intercom switches. NA

Talent Light: Verify talent light on/off, acceptable friction. NA

Micro Cameras: Verify all micro cameras are selectable from video switcher and produce focused, upright images on monitors. NA

TV Tuner: Verify TV tuner receives broadcasts (video clear on monitors, audio clear in headset). NA

Microwave Antenna: Verify omnidirectional microwave antenna extends/retracts properly. Verify up/down indicator lights function properly. NA

Electromagnetic and Radio Frequency Interference: With all special equipment turned on, check for EMI/RFI with tach, COM, intercom, compass, or other systems. NA

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs

Life-Limited Parts: Replace life-limited parts that have reached maximum service life per § 3.300. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations.

Component Overhaul: Replace components that have reached maximum service before overhaul per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations.

Component Retirement: Replace components that have reached maximum service life per § 3.100. Verify components installed correspond with helicopter maintenance record and have sufficient time remaining for projected operations.

Airworthiness Directives: Verify applicable airframe, engine, and accessory Airworthiness Directives (ADs) have been performed according to AD compliance procedures. Some aircraft may be affected by ADs that require recurring inspections at less than 100-hour or annual intervals. Recent U.S. Airworthiness Directives are available online at www.faa.gov.

2.410 Inspection Procedures and Checklist (continued)

19. Life-limited Parts, Component Overhaul and Retirement, ADs, & SBs (continued)

Service Bulletins: Verify applicable airframe, engine, and accessory Service Bulletins (SBs) have been complied with according to manufacturers' instructions. Some aircraft may be affected by SBs that require recurring inspections at less than 100-hour or annual intervals. RHC Service Bulletins are available online at www.robinsonheli.com, under the Publications tab.

20. Required Documents and Placards

Documents: Check that required documents (Airworthiness Certificate, Registration, applicable Radio Station License, Pilot's Operating Handbook, Equipment List/Weight & Balance Data) are on board, legible, and current.

Placards: Verify required placards are properly installed, legible, and current. Refer to Pilot's Operating Handbook Section 2 for placard requirements.

21. Inspection and Access Covers

Foreign Objects Removed: Verify all tools, loose hardware, rags, and other foreign objects are removed from helicopter.

Covers Closed and Secure: Install/close all inspection and access covers removed in preceding steps. Verify security of all access covers.

Clipper I Airbox Sealed: Ensure air box cover perimeter is sealed with aluminum tape (Clipper I models only). N/A

22. Maintenance Records

Maintenance Records: Verify maintenance records are accurate, legible, and complete. Enter maintenance performed (such as part replacement, equipment adjustments, servicing, and lubrication) and inspection data. Data must include a description of (or reference to data acceptable to the Administrator) the work performed, date, helicopter total time in service, signature, certificate type and certificate number of person approving aircraft for return to service.

Inspection Procedures as [redacted]

Mechanic's signature: [redacted] Date: 4-6-20

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VH-NBY JN. 357

SECTION 4

PERIODIC INSPECTIONS

NOTE

Perhaps no other factor is quite so important to safety and durability of the aircraft and its components as faithful and diligent attention to regular checks for minor troubles and prompt repair when they are found.

The operator should bear in mind that the items listed in the following pages do not constitute a complete aircraft inspection, but are meant for the engine only. Consult the airframe manufacturer's handbook for additional instructions.

Pre-Starting Inspection – The daily pre-flight inspection is a check of the aircraft prior to the first flight of the day. This inspection is to determine the general condition of the aircraft and engine.

The importance of proper pre-flight inspection cannot be over emphasized. Statistics prove several hundred accidents occur yearly directly responsible to poor pre-flight.

Among the major causes of poor pre-flight inspection are lack of concentration, reluctance to acknowledge the need for a check list, carelessness bred by familiarity and haste.

1. DAILY PRE-FLIGHT (ENGINE).

a. Be sure all switches are in the "Off" position.

b. Be sure magneto ground wires are connected.

c. Check oil level.

d. Check fuel level.

e. Check fuel and oil line connections, note minor indications for repair at 50-hour inspection. Repair any leaks before aircraft is flown.

f. Open the fuel drain to remove any accumulation of water and sediment.

g. Make sure all shields and cowling are in place and secure. If any are missing or damaged, repair or replacement should be made before the aircraft is flown.

h. Check controls for general condition, travel and freedom of operation.

i. Induction system air filter should be inspected and serviced in accordance with the airframe manufacturer's recommendations.

2. 10-HOUR INSPECTION (ENGINE). After the first ten (10) hours of operating time, new, rebuilt, or newly overhauled engines replace the oil filter, and conduct an inspection of the contents of the used oil filter for traces of metal particles.

3. 25-HOUR INSPECTION (ENGINE). At twenty-five (25) hours of operating time since the first inspection, new, rebuilt, or newly overhauled engines should undergo a 50-hour inspection including draining and renewing lubricating oil, replacing the oil filter, and inspecting the contents of the used oil filter.

NOTE

If the engine does not have a full-flow oil filter, change oil every 25 hours; also, inspect oil pressure and suction screens for metal contamination, and clean thoroughly before reinstallation.

4. 50-HOUR INSPECTION (ENGINE). In addition to the items listed for daily pre-flight inspection, the following maintenance checks should be made after every 50 hours of operation.

a. *Ignition System* –

(1) If fouling of spark plugs has been apparent, clean them and check electrode gap. Rotate bottom plugs to upper position.

(2) Examine spark plug leads of cable and ceramics for corrosion and deposits. This condition is evidence of either leaking spark plugs, improper cleaning of the spark plug wells or connector ends. Where this condition is found, clean the cable ends, spark plug wells and ceramics with a dry, clean cloth or a clean cloth moistened with methyl-ethyl-ketone. All parts should be clean and dry before reassembly.

(3) Check ignition harness for security of mounting clamps and be sure connections are tight at spark plug and magneto terminals.

b. *Fuel Line and Induction System* – Check the primer lines for leaks and security of the clamps. Remove and clean the fuel inlet strainers. Check the mixture control and throttle linkage for travel, freedom of movement, security of the clamps and lubricate if necessary. Check the air intake ducts for leaks, security, filter damage; evidence of dust or other solid material in the ducts is indicative of inadequate filter care or damaged filter. Check vent lines for evidence of fuel or oil seepage; if present, fuel pump may require replacement.

c. *Lubrication System* –

(1) Check oil lines for leaks, particularly at connections; for security of anchorage and for wear due to rubbing or vibration, for dents and cracks.

(2) Replace elements on external full-flow oil filters. Before disposing of used element check interior folds for traces of metal particles that might be evidence of internal engine damage. Drain and renew lubricating oil. (Reference latest revision of Service Instruction No. 1014 for proper oil.)

d. *Exhaust System* – Check attaching flanges at exhaust ports on cylinders for evidence of leakage. If they are loose, they must be removed and machined flat before they are reassembled and tightened. Examine exhaust manifolds for general condition.

e. *Cooling System* – Check cowling, baffles and baffle seals for damage and secure anchorage. Any damaged or missing part of the cooling system must be repaired or replaced before the aircraft resumes operation.

f. *Cylinders* – Check rocker box covers for evidence of oil leaks. If found, replace gasket and tighten screws to specified torque (50 in.-lbs.).

Check cylinders for evidence of excessive heat which is indicated by burned paint on the cylinder. This condition is indicative of internal damage to the cylinder and, if found, its cause must be determined and corrected before the aircraft resumes operation.

Heavy discoloration and appearance of seepage at cylinder head and barrel attachment area is usually due to emission of thread lubricant used during assembly of the barrel at the factory, or by slight gas leakage which stops after the cylinder has been in service for awhile. This condition is neither harmful nor detrimental to engine performance and operation. If it can be proven that leakage exceeds these conditions, the cylinder should be replaced.

5. 100-HOUR INSPECTION. In addition to the items listed for daily pre-flight, and 50-hour inspection, the following maintenance checks should be made after every one hundred hours of operation.

a. *Electrical System* –

(1) Check all wiring connected to the engine or accessories. Any shielded cables that are damaged should be replaced. Replace clamps or loose wires and check terminals for security and cleanliness.

(2) Remove spark plugs; test, clean, regap, and rotate them. Replace if necessary.

h. *Lubrication System* – Drain and renew lubricating oil.

c. *Magnetos* – Check breaker points for pitting and minimum gap. Check for excessive oil in the breaker compartment, if found, wipe dry with a clean lintless cloth. The felt located at the breaker points should be lubricated in accordance with the magneto manufacturer's instructions. Check magneto to engine timing. (Timing procedures for Bendix and Slick magnetos are covered in the Maintenance Procedures Section.)

d. *Engine Accessories* – Engine mounted accessories such as pumps, temperature and pressure sensing units should be checked for secure mounting, tight connections.

e. *Cylinders* – Check cylinders visually for cracked or broken fins.

f. *Engine Mounts* – Check engine mounting bolts and bushings for security and excessive wear. Replace any excessive wear. Replace any bushings that are excessively worn.

g. *Primer Nozzles* – Disconnect primer nozzles from engine and check for equal flow.

h. *Fuel Injector Nozzles and Lines* – Check fuel injector nozzles for looseness. Tighten to 60 in.-lbs. torque. Check fuel line for dye stains at connections (indicating leakage) and security of lines. Repair or replacement must be accomplished before aircraft resumes operation.

i. *Carburetor* – Check throttle body attaching screws for tightness; the correct torque for these screws is 40-50 in.-lbs.

6. 400-HOUR INSPECTION. In addition to the items listed for daily pre-flight, 50-hour and 100-hour inspections, the following maintenance check should be made after every 400 hours of operation.

Valve Inspection – Remove rocker box covers and check for freedom of valve rockers when valves are closed. Look for evidence of abnormal wear or broken parts in the area of the valve tips, valve keeper, springs and spring seats. If any indications are found, the cylinder and all of its components should be removed (including the piston and connecting rod assembly) and inspected for further damage. Replace any parts that do not conform with limits shown in the latest revision of Special Service Publication No. SSP-1776.

7. NON-SCHEDULED INSPECTIONS. Occasionally, service bulletins or service instructions are issued by Lycoming that require inspection procedures that are not listed in this manual. Such publications, usually are limited to specified engine models and become obsolete after corrective modification has been accomplished. All such publications are available from Lycoming distributors, or from the factory by subscription. Consult the latest revision of Service Letter No. L114 for subscription information. Maintenance facilities should have an up-to-date file of these publications available at all times.

s 22 [redacted]

4-6-20

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ROBINSON
HELICOPTER COMPANY
2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-102

DATE: 29 October 2019

TO: R44-series Owners, Operators, and Maintenance Personnel

SUBJECT: Chin Inspection Hole and Access Cover

ROTORCRAFT AFFECTED: R44 Helicopters S/N 0004 thru 2261 & R44 II Helicopters S/N 10001 thru 13420, except Police & E.N.G. configurations. (R44 Cadets are not affected.)

TIME OF COMPLIANCE: Within next 500 flight hours or by 30 November 2020, whichever occurs first.

BACKGROUND: This bulletin requires cutting a hole and installing an access cover in the chin to facilitate inspection of tail rotor flight controls.

COMPLIANCE PROCEDURE:

1. For each affected helicopter, order one KI-233-1 Chin Access Cover Installation Kit.
2. Install KI-233-1 kit per kit instructions.
3. Make appropriate maintenance record entries.

APPROXIMATE COST:

Parts: $35 for KI-233-1 Kit if ordered by 30 November 2020.

Labor: Approximately 2.5 man-hours.

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

s 22 [redacted] 4-6-20

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2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R22 SERVICE BULLETIN SB-116
(supersedes R22 SL-82B)

R44 SERVICE BULLETIN SB-103
(supersedes R44 SL-68B)

R66 SERVICE BULLETIN SB-36
(supersedes R66 SL-26B)

DATE: 02 December 2019

TO: R22-series, R44-series, & R66 Owners, Operators, & Maintenance Personnel

SUBJECT: Main Rotor Blade Tip Plate Permanent Removal & Sealant Application

EFFECTIVITY:

- A016-6 Revision AT, AU, & AV main rotor blade assemblies (R22)
- C016-7 Revision AH & AI main rotor blade assemblies (R44)
- F016-2 Revision H & I main rotor blade assemblies (R66)

Main rotor blade part number and Revision letter are on data plate on inboard lower skin.

TIME OF COMPLIANCE: At next 100-hour inspection or annual inspection, or by 01 March 2020, whichever occurs first.

BACKGROUND: This bulletin requires permanent removal of C155 tip plates from specified main rotor blades and application of polysulfide sealant for improved corrosion resistance.

COMPLIANCE PROCEDURE:

For each affected main rotor blade:

1. Refer to Figure 1. Position main rotor blade to allow tip access and apply rotor brake. Support blade in level (spanwise) position with cushioned stand.
2. Remove tip cover from blade. If tip plate has previously been removed, proceed to step 4.
3. Initiate separation of tip plate from spar using mallet and a razor blade; hold razor parallel to plate. Peel off plate by pulling with pliers. If tip plate is removed from only one of an installed pair of blades, weigh removed tip plate and add equal amount balance weight to tip.

(OVER)

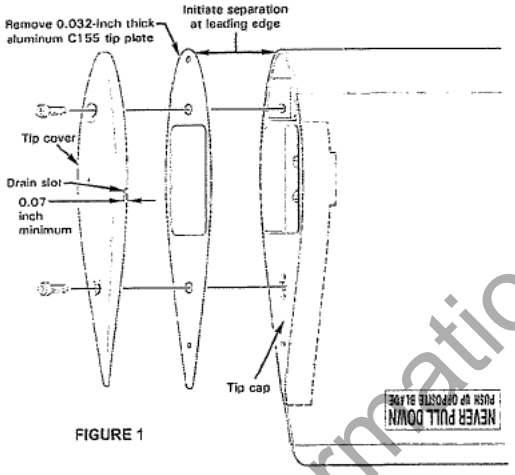

FIGURE 1

CAUTION
Do NOT use power tools or chemical paint strippers to remove blade paint.

4. Using a hard, flat block with 220-grit aluminum-oxide abrasive paper, hand-sand blade tip vertical surface in a chordwise direction to expose bare metal of tip cap and outboard edges of skins. Clean up debris.
5. Using 10X magnification, visually inspect blade tip for corrosion.
6. Remove any corrosion from tip cap and outboard edges of blade skins by hand-sanding vertical surface in a chordwise direction; use a hard, flat block with 220-grit aluminum-oxide abrasive paper. Remove only material necessary to eliminate corrosion.
7. Remove any corrosion from upper and lower surface of blade skins per current revision R22 SL-83 / R44 SL-70 / R66 SL-30.

WARNING
Review appropriate Safety Data Sheet (SDS) when working in proximity to hazardous materials. Specific recommendations for use of personal protective equipment are located in the SDS.

8. Clean bare metal area with lint-free cloth dampened with acetone.
9. Refer to Figure 2. Apply thin, even layer of B270-1 sealant (polysulfide, ref MM approved sealants) as shown. Allow to cure.

FIGURE 2

10. Refer to Figure 1. Visually inspect tip cover for corrosion. Remove any corrosion from tip cover clamping surface, and maintain surface flatness, by hand-sanding tip cover on 220-grit aluminum-oxide abrasive paper on a flat plate. Minimum allowable height of cover's drain slot after rework is 0.07 inch. Clean bare metal area with acetone, prime with two coats of epoxy primer (chromated epoxy preferred), and allow to cure.
11. On blade tip, prime bare metal with two coats of epoxy primer (chromated epoxy preferred), and allow to cure.
12. Install tip cover and special torque screws to 40 inch-pounds wet with A257-9 anti-seize.
13. Apply topcoat to blade tip and tip cover within 2–48 hours of primer application. For best performance, allow topcoat to cure 48 hours before flight.
14. Make appropriate maintenance record entries.

APPROXIMATE COST:

Parts: None.

Labor: 3.0 man-hours per installed pair of main rotor blades.

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

s 22 [redacted] 4-6-20
160814

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2901 Airport Drive, Torrance, California 90505 Phone (310) 539-0508 Fax (310) 539-5198

R44 SERVICE BULLETIN SB-104
(supersedes R44 SB-98B)

DATE: 11 March 2020

TO: R44-series Owners, Operators, and Maintenance Personnel

SUBJECT: Air/Oil Separator Hose

EFFECTIVITY: R44 Helicopters S/N 2566 thru 2607 except 2600. R44 II Helicopters S/N 14284 thru 14384 except 14381 and 14382. R44 Cadet Helicopters S/N 30044 thru 30065 except 30047 and 30061. Also helicopters retrofitted with air/oil separators.

TIME OF COMPLIANCE: Within next 150 flight hours or by 31 May 2020, whichever occurs first.

BACKGROUND: RHC received a report of a kinked A729-75 hose, installed between the engine and C728-2 air/oil separator assembly. The kinked hose caused the crankcase to vent through the separator drain back tube resulting in loss of engine oil. R44 SB-98B required a spring to be inserted inside the hose to prevent kinking. However, RHC has found that the hose is still susceptible to kinking. This bulletin requires replacing the A729-75 hose & spring with an A785-43 wire-reinforced hose.

COMPLIANCE PROCEDURE:

1. Refer to Figure 1. For each affected helicopter, obtain one A785-43 crankcase breather hose, available from RHC Customer Service.
2. Remove engine RH cowling. R44 IIs only: Remove air box assembly per R44 Maintenance Manual (MM) § 6.470.
3. Loosen B277-4 clamp and disconnect black oil drain tube from air/oil separator's can.
4. Loosen screw securing separator's breather tube.
5. Remove screw securing air/oil separator's can-to-frame clamp.
6. Loosen B277-12 clamps and remove A729-75 hose and D774-20 spring; retain clamps and discard hose and spring.

(OVER)

[redacted]

160819 4-6-20

7. Install new A785-43 hose with soft cuff (portion without wire) over engine fitting; secure hose with retained clamps.

> NOTE
>
> Applying A257-8 rubber lubricant to hose bore at ends facilitates installation.

8. Install screw securing air/oil separator's can-to-frame clamp. Verify security.
9. Tighten screw securing separator's breather tube.
10. Connect black oil drain tube to separator's can & tighten B277-4 clamp. Verify security.
11. Install air box assembly per MM § 6.480, if removed. Install engine RH cowling.
12. Make appropriate maintenance record entries.

APPROXIMATE COST:

Parts: No charge for one A785-43 if ordered by 31 May 2020. Reference helicopter serial number when ordering.

Labor: 0.5 man-hour for R44 and R44 Cadet Helicopters.
1.0 man-hour for R44 II Helicopters.

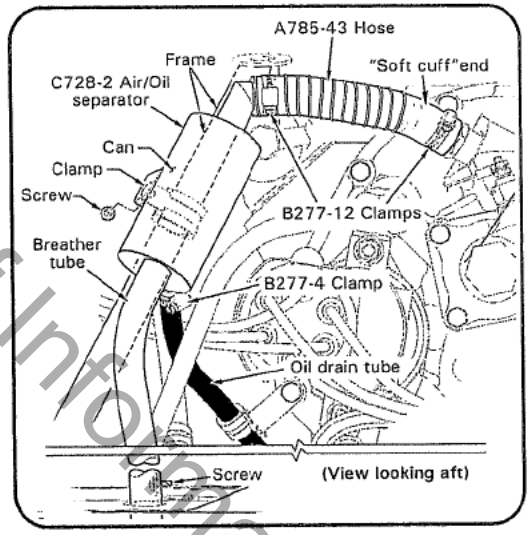

FIGURE 1

THE DESIGN ENGINEERING ASPECTS OF THIS BULLETIN HAVE BEEN SHOWN TO COMPLY WITH APPLICABLE FEDERAL AVIATION REGULATIONS AND ARE FAA APPROVED.

UNSERVICEABLE ITEM

DESCRIPTION: CYL KIT

PART No.: 05K21745 A/F HRS.: 286.9

SERIAL No.: — TSN: 286.9

REMOVED FROM: VH-NJY TSOH: —

SIGNED: s 22 [redacted] DATE: 4-6-20

LIC No.: 760519 REPAIRABLE/NON REPAIRABLE

low compression

SEE OVER FOR REMARKS / REASON FOR REMOVAL.

JM357

2507

Part # **05K21745**

Description **O-360/O-540 Cylinder Kit**

GRN **PC579**

Bin

Purchase # **579**

Expiry

QTY **1**

Serial #

Job

Condition **NEW**

1. Approving Civil Aviation Authority/Country: FAA/UNITED STATES	2. **AUTHORIZED RELEASE CERTIFICATE** FAA FORM 8130-3, AIRWORTHINESS APPROVAL TAG	3. Form Tracking Number: **MS-522807**
4. Organization Name and Address: LYCOMING ENGINES 652 OLIVER STREET WILLIAMSPORT, PA 17701	PRODUCTION CERTIFICATE #3	5. Work Order/Contract/ Invoice Number: 166826/5060229

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/ Work:
2.1	KIT-CYL PISTON/RING ASSY	05K21745	6	N/A	NEW

12. Remarks:

AIRFLITE PTY LTD

13a. Certifies the items identified above were manufactured in conformity to: X Approved Design data and are in a condition for safe operation. _ Non-approved design data specified in Block 12.		14a. _ 14 CFR 43.9 Return to Service _ Other regulation specified in Block 12 Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.	
13b. Authorized Signature:	13c. Approval/Authorization No: ODA830878NE	14b. Authorized Signature:	14c. Approval/Certificate No.:
13d. Name (Typed or Printed): T. STROUD	13e. Date (dd/mmm/yyyy): 09-OCT-2019	14d. Name (Typed or Printed):	14e. Date (dd/mmm/yyyy):

User/Installer Responsibilities

It is important to understand the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block 1.

Statements in Blocks 13a and 14a do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with national regulations by the user/installer before the aircraft may be flown.

FAA Form 8130-3 (02-14) [illegible]

2507

Part # **05K21745**

Description **O-360/O-540 Cylinder Kit**

GRN **PC579**

Bin

Purchase # **579**

Expiry

QTY **1**

Serial #

Job

Condition **NEW**

1. Approving Civil Aviation Authority/Country: **FAA/UNITED STATES**	2. **AUTHORIZED RELEASE CERTIFICATE** **FAA FORM 8130-3, AIRWORTHINESS APPROVAL TAG**	3. Form Tracking Number: **MS-522807**
4. Organization Name and Address: PRODUCTION CERTIFICATE #3 LYCOMING ENGINES 652 OLIVER STREET WILLIAMSPORT, PA 17701		5. Work Order/Contract/ Invoice Number: 166826/5060229

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11.Status/ Work:
2.1	KIT-CYL PISTON/RING ASSY	05K21745	6	N/A	NEW

12. Remarks:

AIRFLITE PTY LTD

13a. Certifies the items identified above were manufactured in conformity to: X Approved Design data and are in a condition for safe operation. _ Non-approved design data specified in Block 12.		14a. 14 CFR 43.9 Return to Service _ Other regulation specified in Block 12 Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.	
13b. Authorized Signature:	13c. Approval/Authorization No: ODA830878NE	14b. Authorized Signature:	14c. Approval/Certificate No.:
13d. Name (Typed or Printed): [redacted] s 22	13e. Date (dd/mmm/yyyy): 09-OCT-2019	14d. Name (Typed or Printed):	14e. Date (dd/mmm/yyyy):

User/Installer Responsibilities

It is important to understand the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block 1.

Statements in Blocks 13a and 14a do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with national regulations by the organization before the aircraft may be flown.

FAA Form 8130-3 (10-04)

Pearl Coast HeliMaintenance Pty Ltd – Parts Control Form J/N 357 Page No:

~~VH-XXX~~ VH-NBY

Date	Part No.	Serial No.	Description	Qty.	GRN/Batch No:	ARC/Form 1 No:	Removed By	Aerotrack Updated
✓	AA45108R		oil filter	1	PC578			
✓	05K21745		cyl kit warranty	1	PC579			
✓	62224		Gasket	1	PC541			
✓	STD475		washer	2	PC195			
✓	71993		gasket	1	PC195			
✓	AN6235-1A		HYD fitter	1	PC534			
✓	MS28774-14		O-Ring	1	PC383			
✓	MS28775-014		O-Ring	2	PC136 PC538			
✓	B3304-13		pal nut	4	PC510			
✓	B330-19		pal nut	2	PC068			
✓	B527-084		washer	5	PC265			
✓	XPD 100		Engine oil	12	PC608			
			~~AD Angas~~ 157					

Pearl Coast Helicopters

ENGINEER TIME SHEET

CLIENT. U.O.E..... VH- NBY..... JOB NO 357... PG NO... 1.....

DATE	ENGINEER	TIME ON / OFF	TOTAL	WORK PERFORMED
2/6	A.Q		0.5	JOB Pack
2/6	A.Q		6.5	100 HV A/F
2/6	M.W		~~8~~ 7	100 Hr CYL Change #2
3/6	A.Q		7	100 Hr A/F Engine
3/6	M.W		8.5	100 Hr / CYL CHANGE #2
4/6	M.W		1	100 HR / CYL CHANGE
4/6	A.Q		2	Log Book

Pearl Coast Heli Maintenance

Job # : **304**

Rego : **NBY**

AFTTIS : 195.03

Start Date : 26-07-2019

Finish Date : 29-07-2019

Customer : Ultimate Outback Experience

Job Type : Component Install/Replace

Coordinator : s 22 [redacted]

Description : Onboard Systems Hook Install

Worksheet

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Job No : 304

Co-ordinators Signature : s 22 [redacted]
Print Name : s 22 [redacted]
Date : / /
Licence No : 594407

Component	Counter	Total
Airframe	Hours	195.03
Airframe	Days	26-07-2019

Airframe

Work Required : ADDITIONAL WORK Install Onbord Cargo Hook System IAW Onboard Systems STC # SR01808SE

Task No 001
Category Airframe
Monitor By
Interval
Due
To Run

Action Taken :
C/O Installed 1 x New 28v Onboard Systems Cargo Hook System P/N 200-327-00 B/N PC508 NDF

Labour Hours

ATA Code :
A.M.E s 22 [redacted]
L.A.M.E
Licence No 594407
Date 29/07/2019

A certification for L.A.M.E constitutes a certification pursuant to CAR42ZE that all maintenance has been properly performed as detailed in the above mentioned job number for and on behalf of Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Form No : null

Engineering Work Package Pearl Coast Heli Maintenance Pty Ltd COA - 0686

JOB DETAILS

Job Number	304	Date Raised	26/07/2019	AF TTIS	195.03
Aircraft Registration	VH-NBY	Date Completed	29/4/19.	Engine TTIS	
Operator	Horizontal Falls Helicopters	Approved Maintenance Data (Airframe)	RHC R44 RTR 460 Maintenance Manual Rev May 2016	Landings/Starts	
Aircraft Type	R44			Cycles	
Operator Base	Pearl Coast Heli Maintenance	Approved Maintenance Data (Engine)	Lycoming O-540 Operators Manual Rev March 2009	RINS	

Job Description : Onboard Systems Hook Install

SIGNATURE SIGN OFF	Name	Licence No.	Signature & Initial	Trade Type	Hours
Job Coordinator	s 22	594407	s 22	LAM3	
AME/LAME					

Co-Ordination and Final Certification

Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Aircraft : R44
Rego : VH-NBY
Serial # : 2544
Owner : Horizontal Falls Helicopters
Operator : Horizontal Falls

Job No : 304
Job Description : Onboard Systems Hook Install

M/R Date of Issue / /

Expired M/R Serial No.

Issued M/R Serial No.

Aircraft TTIS 195.03

L.A.M.E CERTIFICATION

I hereby certify that all maintenance in the category(s) for which I am responsible have been completed.

Categories covered during this inspection - Certifications

Airframe	s 22 [redacted]	Licence Number	594457	Date 29/7/19	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Engines		Licence Number		Date	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Electrical		Licence Number	594457	Date 29/7/19.	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Instrument		Licence Number		Date	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686
Radio		Licence Number		Date	For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

Independent Inspection Certificate Pursuant to CAR 42G. Inspection carried out on the following :

1st Inspection Signature : Licence Number

2nd Inspection Signature : Licence Number

CO-ORDINATING CERTIFICATION

I hereby certify for the completion and co-ordination of the entire inspection.

LAME Signature : s 22 [redacted] LAME Licence No : 594407 Date 29 / 7 / 19 For & on behalf of: Pearl Coast Heli Maintenance Pty Ltd COA - 0686

A CERTIFICATION ABOVE CONSTITUTES A CERTIFICATION PURSUANT TO CAR42ZE THAT ALL MAINTENANCE HAS BEEN PROPERLY CERTIFIED. Note: The person who certifies for the completion and co-ordination of the entire inspection or workpackage contents is to ensure that any maintenance performed during the inspection has not invalidated a certification already made in another category and has been completed and properly certified.

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

RECORD OF WEIGHT ALTERATIONS

NAME OF ORGANISATION	AIRCRAFT	TYPE	DATUM
For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686	VH-NBY	R44 Raven I	100 INCHES FORWARD OF THE MAIN ROTOR CENTRE LINE

DATE	DESCRIPTION OF ALTERATION	MOMENT ARM FROM DATUM mm	WEIGHT AND BALANCE CHANGE				RUNNING TOTAL EMPTY AIRCRAFT		
			Added (+)		Removed (-)				
			Weight kg	Index	Weight kg	Index	Weight kg	Arm mm	Index
10/09/18	***Longitudinal C of G***						**663.9**	**2730.5**	**1812860.7**
29/7/19	Install Cargo Hook Kit	2385.06	2.4	5724					
	Total						**666.3**	**2729.4**	**1818584.7**
10/9/18	***Lateral C of G***						**663.9**	**5.1**	**3372.8**
29/7/19	Install Cargo Hook Kit	-104	2.4	-250					
	Total						**666.3**	**4.69**	**3122.8**

s 22 [redacted] 594457 29/7/2019

For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686

Owner's Manual
For the
Cargo Hook
Suspension System
on the
Robinson R44 and R44 II
Helicopter

Kit Part Numbers
200-326-00, 200-327-00, 200-327-01, 200-327-10, 200-327-11 200-396-00

STC SR01808SE

Owner's Manual Number 120-132-00
Revision 17
March 1, 2019

ONBOARD SYSTEMS INTERNATIONAL

13915 NW 3rd Court Vancouver, Washington 98685 USA
Phone: 360-546-3072 Fax: 360-546-3073 Toll Free: 800-275-0883
www.OnboardSystems.com

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Record of Revisions

Rev.	Date	Page(s)	Reason for Revision
9	11/11/13	2-10 to 2-25	Updated pin load cell installation instructions.
10	02/10/14	2-4, 2-6, 2-7	Loosened tolerances on relay location, moved manual release cable T-handle location .80 inches inboard to provide clearance with a/c structure. Updated Notice for locating T-handle.
11	02/13/14	1-3, 1-4, 2-1, 2-2, & 3-2	Replaced bolt P/N 200-505-00 with 511-076-00.
12	08/24/15	1-4, 2-9, 3-3, 3-4	Added load cell P/N 210-301-01. Updated cargo hook rigging section.
13	10/09/15	Section 1, 2-24 thru 2-32	Added remote hook electrical release kit P/N 200-396-00.
14	07/29/16	1-1, 1-4, 2-13, 2-16, 2-17, 2-25	Clarified applicability of kits by aircraft voltage rather than aircraft model. Replaced remote hook release kit's external connector assembly P/N 270-230-00 with P/N 270-230-01. Clarified switch installation instructions and added plug P/N 506-016-00. Removed load weigh operation instructions and replaced with reference to manual no. 120-039-00.
15	03/30/17	2-4	Updated instructions for locating relay.
16	03/31/17	1-1, 1-3 thru 1-7, 2-32, 2-33, 3-1	Added kit P/N 200-327-10 and P/N 200-327-11 which include cargo hook P/N 525-029-02 with Surefire release. Added instructions associated with this cargo hook P/N.
17	01/01/19	2-1, 2-2	Added information on installation location of cargo hook suspension.

Register Your Products for Automatic Notifications
Onboard Systems offers a free notification service via fax or email for product alerts and documentation updates. By registering your Onboard Systems products at our website, we will be able to contact you if a service bulletin is issued, or if the documentation is updated.

You can choose to receive notices on an immediate, weekly, or monthly schedule via fax, email or both methods. There is no charge for this service. Please visit our website at www.onboardsystems.com/notify.php to get started.

CONTENTS

Section 1
General Information
Introduction

The P/N 200-326-00, 200-327-00, 200-327-01, 200-327-10, and 200-327-11 Cargo Hook Suspension System Kits are approved for use on the Robinson R44 and R44 II helicopters. These kits include the cargo hook, suspension assembly, internal electrical wiring including release switches, and manual release cable. Kit P/N 200-327-01 includes a load weigh system. The P/N 200-326-00 kit is intended for use on R44 aircraft which have a 14V electrical system while the P/N 200-327-00 and 200-327-01 kits are intended for use on R44 and R44 II aircraft which have a 28V electrical system. Kit P/N's 200-327-00 and 200-327-01 also include a different cyclic switch housing assembly than the P/N 200-326-00 kit to accommodate the R44 II cyclic configuration.

The P/N 200-326-00 cargo hook suspension kit includes the P/N 528-029-01 14V keeperless cargo hook. This cargo hook is directly interchangeable with earlier model Onboard Systems P/N 528-023-03 and P/N 528-010-06 cargo hooks.

The P/N 200-327-00 and 200-327-01 cargo hook suspension kits include the P/N 528-029-00 28V keeperless cargo hook. This cargo hook is directly interchangeable with earlier model Onboard Systems P/N 528-023-01 and P/N 528-010-04 cargo hooks. The earlier models may be used with the respective cargo hook suspension kits.

Kit P/Ns 200-327-10 and 200-327-11 are identical to P/Ns 200-327-00 and 200-327-01 respectively except they include a cargo hook with Surefire release as part of its electrical release system. Surefire release is a safety enhancement to protect against inadvertent load release due to accidental contact with the release switch or mistaken actuation of the release switch when another is intended. See Theory of Operation section for complete description of Surefire release.

A Remote Hook Electrical Release Kit (P/N 200-396-00) for 28 volt R44 II models is available as a complement to the kits listed above. This kit provides the fixed electrical provisions for the operation of a remote cargo hook such as the Onboard Systems P/N 210-242-00 cargo hook or the 528-018 series of cargo hooks. It includes a cyclic mounted switch, circuit breaker, relay, wiring, and connector bracket. Refer to section 2.9 for installation instructions for this kit.

NOTICE

The P/N 200-396-00 kit is limited to use with intermittent electrical loads only (such as for the electrical release of a remote cargo hook).

Safety Labels

The following definitions apply to safety labels used in this manual.

⚠ DANGER — Indicates a hazardous situation which, if not avoided, <u>will</u> result in death or serious injury.

⚠ WARNING — Indicates a hazardous situation which, if not avoided, <u>could</u> result in death or serious injury.

⚠ CAUTION — Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE — Draws the reader's attention to important or unusual information not directly related to safety.

CAUTION — Used to address practices not related to personal injury.

Bill of Materials

The following items are included with the Cargo Hook Suspension System Kits. If shortages are found contact the company from whom the system was purchased.

Table 1.1 Suspension System Bill of Materials

Part No.	Description	200-326-00	200-327-00	200-327-01	200-327-10	200-327-11
120-039-00	Owner's Manual, C-39	-	-	1	-	1
120-132-00	Owner's Manual	1	1	1	1	1
121-048-00	RFM Supplement	1	1	1	1	1
122-017-00	CMM, Cargo Hook	1	1	1	1	1
123-030-00	ICA	1	1	1	1	1
528-029-01	Cargo Hook, 14V	1	-	-	-	-
528-029-00	Cargo Hook, 28V	-	1	1	-	-
528-029-02	Cargo Hook, 28V, Surefire	-	-	-	1	1
232-292-01[2]	Suspension Assembly	1	1	1	1	1
311-076-00[1]	Drilled Head Cap Screw	2	2	2	2	2
270-089-00	Wire Assembly	1	1	1	1	1
215-118-00	Multiple Decal Sheet	1	1	1	1	1
215-119-00	External Load Limit Decal	1	1	1	1	1
215-343-00	Cockpit Decal, Surefire	-	-	-	1	1
270-090-00	Wire Harness	1	1	1	1	1
232-114-01	Switch Housing Assembly	1	-	-	-	-
232-152-01	Switch Housing Assembly	-	1	1	1	1
290-178-01	Switch Guard, Co-pilots	1	1	1	1	1
268-014-01	Manual Release Cable	1	1	1	1	1
506-016-00	Hole Plug	-	1	1	1	1
510-297-00	Screw	1	1	1	1	1
510-286-00	Nut	1	1	1	1	1
510-209-00	Washer	1	1	1	1	1
512-010-00	Loop Clamp	1	1	1	1	1
512-027-00	Loop Clamp	3	3	3	3	3
500-066-00	Spacer	1	1	1	1	1
500-065-00	Grommet Edging	1	1	1	1	1
512-018-00	Clamp	2	2	2	2	2
440-006-00	Circuit Breaker	1	1	1	1	1
415-002-00	Relay	1	-	-	-	-
415-003-00	Relay	-	1	1	1	1
410-162-00	Ring Terminal	2	2	2	2	2
510-277-00	Screw	2	2	2	2	2
510-278-00	Washer	2	2	2	2	2
510-279-00	Nut	2	2	2	2	2
505-011-00	Grommet	2	2	2	2	2
400-059-00	Switch	1	1	1	1	1
450-001-00	Heat Shrink, ½" Lg.	4	4	4	4	4
290-332-00	Attach Bolt	1	1	-	1	-
510-183-00	Washer	2	2	1	2	1
510-174-00	Washer	1	1	1	1	1
510-178-00	Cotter Pin	1	1	1	1	1

continued

Bill of Materials continued

Table 1.1 Suspension System Bill of Materials continued

Part No.	Description	200-326-00	200-327-00	200-327-01	200-327-10	200-327-11
510-170-00	Nut	1	1	1	1	1
210-301-01[3]	Pin Load Cell Assembly	-	-	1	-	1
270-048-04	Load Weigh Internal Harness	-	-	1	-	1
210-095-00	C-39 Indicator	-	-	1	-	1
400-048-00	Power Switch	-	-	1	-	1
215-010-00	Placard	-	-	2	-	2
215-012-00	Placard	-	-	1	-	1
510-028-00	Screw	-	-	4	-	4
510-029-00	Nut	-	-	4	-	4

[1] *Bolt P/N 311-076-00 replaces P/N 290-505-00. These parts are interchangeable.*

[2] *Suspension Assembly P/N 232-292-01 supersedes P/N 232-292-00 Suspension Assembly, P/N 291-108-00 Pivot Block, and P/N 291-107-00 Pin.*

[3] *P/N 210-301-01 supersedes P/N 210-226-01. These P/Ns are interchangeable in this installation.*

The following items are included with the optional Load Weigh Upgrade Kit (P/N 200-340-00). This kit is intended for operators using the 200-327-00 or 200-327-10 kit and who would like to add a load weigh system. It converts the P/N 200-327-00 and 200-327-10 kit configuration to a P/N 200-327-01 and 200-327-11 kit configuration respectively.

Table 1.2 Load Weigh Upgrade Kit (P/N 200-340-00) Bill of Materials

Part No.	Description	Qty
210-301-01	Pin Load Cell Assembly	1
270-048-04	Load Weigh Internal Harness	1
210-095-00	C-39 Indicator	1
400-048-00	Power Switch	1
215-010-00	Placard	2
215-012-00	Placard	1
510-028-00	Screw	4
510-029-00	Nut	4
510-178-00	Cotter Pin	1
510-170-00	Nut	1
510-174-00	Washer	1
510-183-00	Washer	1

Bill of Materials continued

The following items are included with the optional 28V Remote Hook Electrical Release Kit (Kit P/N 200-396-00). If shortages are found contact the company from whom the system was purchased.

Table 1.3 Remote Hook Electrical Release Kit Bill of Materials

Part No.	Description	Qty.
215-284-00	Placard	1
232-513-00	Switch Housing Assembly	1
270-198-00	Wire Assembly, Circuit Breaker	1
270-205-00	External Electrical Harness	1
270-230-01[1]	R44 External Connector Assembly	1
410-295-00	Ring Terminal	1
410-309-00	Ring Terminal	2
420-084-00	22 Ga. Wire	6 ft
440-012-00	Circuit Breaker	1
450-001-00	Heat Shrink, ½" Lg	2

[1] Supersedes P/N 270-230-00 and provides compatibility with Robinson panel P/N C794-3 with air inlet.

Specifications

Table 1.4 Specifications - Kit P/N 200-326-00, 200-327 series

Suspension design load	800 lb. (363 kg.)
Design ultimate strength	3,000 lb. (1,361 kg.)
Cargo hook electrical and mechanical release capacity	9,000 lb. (4,081 kg.)
Force required for mechanical release at 3,600 lb.	8 lb. Max (.600" travel)
Cargo hook P/N 528-029-00, 528-029-02 electrical requirements	22-32 VDC, 6.9 - 10 amps
Cargo hook P/N 528-029-01 electrical requirements (kit P/N 200-326-00)	10-15 VDC, 7.7-11.5 amps
Cargo hook minimum release load	0 pounds
Cargo hook mating electrical connector	PC06P8-2S

Table 1.5 Specifications - Kit P/N 200-396-00

Kit Weight	1.1 lbs (0.5 kg)
Voltage Rating	28 volts
Current Rating	15 amps**
Compatible electrical connector (from long line side)	Leviton 5239-VY*

* Or equivalent 3 prong, 15 amp plug.

** The 200-396-00 remote hook release kit is limited to use with intermittent electrical loads that do not exceed 1 second in duration (such as a remote cargo hook electrical release).

Theory of Operation

The primary elements of the Cargo Hook are the load beam, the internal mechanism, and a DC solenoid. The load beam supports the load and is latched through the internal mechanism. The DC solenoid, an external manual release cable and a manual release lever provide the means for unlatching the load beam.

The load is attached to the load beam by passing the cargo sling ring into the throat of the load beam and pushing the ring against the upper portion of the load beam throat, which will initiate the hook to close. In the closed position, a latch engages the load beam and latches it in this position.

To release the load, the latch is disengaged from the load beam. With the latch disengaged, the weight of the load causes the load beam to swing to its open position, and the cargo sling slides off the load beam. The load beam then remains in the open position awaiting the next load.

A load release can be initiated by three different methods. Normal release is achieved by pilot actuation of the push-button switch in the cockpit. When the push-button switch is pressed, it energizes the DC solenoid in the Cargo Hook, and the solenoid opens the latch in the internal mechanism. A secondary release button is also provided on the left seat lower outboard support. In an emergency, release can be achieved by operating a mechanical release cable. The release cable operates the internal mechanism of the Cargo Hook to unlatch the load beam. The load can also be released by the actuation of a lever located on the side of the Cargo Hook.

The optional cargo hook with Surefire includes a short time delay circuit built into the cargo hook's electrical release system (cargo hook P/N 528-029-02). This feature is a safety enhancement to protect against inadvertent load release due to accidental contact with the release switch or mistaken actuation of the cargo hook switch when another is intended. The time delay feature requires that the release switch be depressed and <u>held</u> for more than a 1/2 second to open the cargo hook. Surefire makes the electrical release a more deliberate pilot command. If the cargo hook must be released immediately, use the mechanical backup release.

In addition to its P/N, a cargo hook with Surefire can be identified by a gold color solenoid housing (see Figure 1.1). Also a placard on the underside of the solenoid housing indicates that the electrical release is delayed by ½ second.

NOTICE

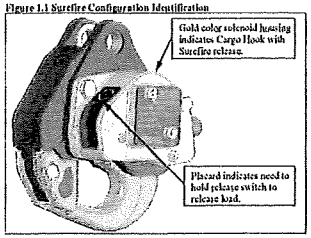
The 538-029-02 cargo hook includes an electronic delay of approximately ½ second. It is necessary to press and hold the cargo hook release button.

⚠ CAUTION

If a Surefire-equipped cargo hook must be released immediately without any delay (such as the case of engine failure or snagged load), use the mechanical backup release.

In addition to the delay feature the circuit includes on-off cycling to limit the duty-cycle on the cargo hook solenoid. If the release switch is held down, the solenoid will cycle on and off repeatedly in a "machine gun" fashion.

Figure 1.1 Surefire Configuration Identification



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Section 2
Installation Instructions

These procedures are provided for the benefit of experienced aircraft maintenance facilities capable of carrying out the procedures. They must not be attempted by those lacking the necessary expertise.

The R44 maintenance and parts manuals should be available throughout the installation as various R44 components will be referred to by name and part number. The part numbers for Robinson components are provided for reference and are subject to change by Robinson.

All equipment removed and replaced shall be done in accordance with the R44 maintenance manual. All installed hardware shall be torqued in accordance with standard torques of AC43.13 unless noted otherwise. Apply torque stripe where applicable.

2.1 Cargo Hook Suspension Assembly Installation

The Cargo Hook Suspension Assembly is attached to the aircraft at the existing Robinson hardpoint block P/N D124-1 at STA 93.9, Bl. -4.1. Plugs may need to be removed (if present) from the two threaded holes in the hardpoint block.

- Insert the cap screws (P/N 290-505-06 or 511-076-00) into the two threaded holes in the hardpoint block and screw in to ensure thread integrity. Some re-work of access holes in trim may be required to allow bolt installation.
- Remove the two cap screws.
- Apply sealant to the side of the Suspension Assembly (P/N 232-292-01) Pillow Block which is to be installed against the belly skin.
- Orient the Suspension Assembly as shown in Figure 2.1.1 and secure it to the helicopter with the two P/N 290-505-06 or 511-076-00 cap screws (refer to Figure 2.1.1). **

NOTICE

Install the Suspension Assembly so that the engraved "F" is forward and the engraved "A" is aft as shown in Figure 2.1.1.

- Torque the P/N 290-505-06 or 511-076-00 cap screws to 26 ft-lbs
- Safety-wire the cap screws to the ears of the pillow block.

** If installing Suspension Assembly P/N 232-292-00, Pillow Block P/N 291-108-00, and Pin P/N 291-107-00 perform the following steps (the Suspension Assembly P/N can be determined by checking the underside of the Pillow Block. P/N 232-292-01 Suspension Assembly has a "-01" on the underside of the Pillow Block).

2.1 Cargo Hook Suspension Assembly Installation continued

- Grease the Pin (P/N 291-107-00) with Mobilgrease 28 or equivalent before assembly.
- Partially insert the Pin into the Pillow Block. Hold the Suspension Assembly (P/N 232-292-00) in the orientation as shown in Figure 2.1.2, position it within the slot of the Pillow Block, and slide the Pin through the Suspension Assembly and into the other side of the pillow block.

Figure 2.1.1 Suspension Assembly Installation – (P/N 232-292-01)

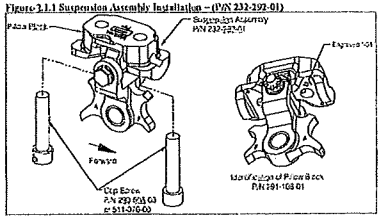
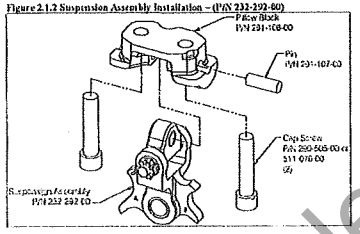


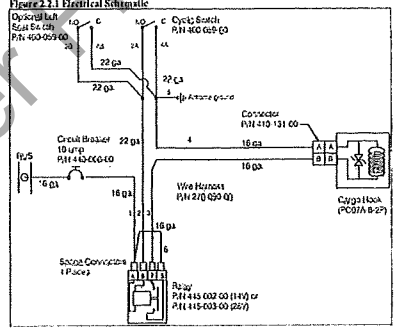
Figure 2.1.2 Suspension Assembly Installation – (P/N 232-292-00)



2.2 Electrical Release Wiring Installation

The electrical release system is powered from the bus through a 10 amp circuit breaker to a relay in the center tunnel. Switches on the cyclic and co-pilot seat support control the relay and energize the DC solenoid in the Cargo Hook, opening the hook and releasing the cargo. A schematic for the electrical system is shown below in Figure 2.2.1.

Figure 2.2.1 Electrical Schematic



- Install the relay (P/N 445-002-00 if installing kit P/N 200-326-00 or P/N 445-003-00 if installing kit P/N 200-327-00) on the keel panel below the existing relay installation (see Figure 2.2.2) using the hardware as shown.

NOTICE

Due to differences in aircraft and changes by Robinson this location may not be possible. Install as near as possible and before drilling the holes position the relay and ensure adequate clearance for the wire harness connections and ensure the holes are a minimum of 4D edge distance from surrounding holes.

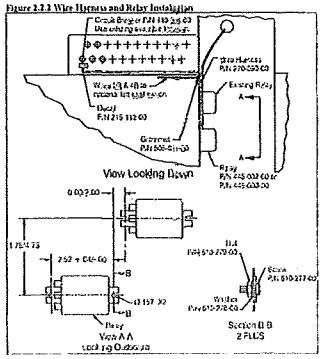
2.2 Electrical Release Wiring Installation continued

- Place the electrical release wiring harness (P/N 270-050-00) into the tunnel on top of the existing wire bundle.

NOTICE

If installing the load weigh system, it may be desirable to install the electrical harness at the same time as the release wiring harness. Refer to Section 2.7 for load weigh installation.

Figure 2.2.2 Wire Harness and Relay Installation



2.2 Electrical Release Wiring Installation continued

- Connect wire numbers 1, 2 and 3 from the main wire harness to the relay terminals A, B and 7 as shown in the electrical system schematic. Connect jumper wire 6 to relay terminal 5.
- Connect the ground lead of wire number 5 to any convenient existing ground location in the tunnel.
- Secure the wire harness with wire ties as required.
- Remove the circuit breaker cover panel and install the 10 amp circuit breaker (P/N 410-006-00) in an available location. On some early models, it may be necessary to remove the panel and make a hole for the additional circuit breaker.
- Open the circuit breaker to disarm the cargo hook release circuit.
- Use the wire assembly (P/N 270-059-03) and a ring terminal (P/N 410-162-00) as a jumper to power the input side of the circuit breaker in compliance with AC 43.13.
- Feed the #1 wire of the main wire bundle from the tunnel into the circuit breaker bay using the existing wire harness access hole. Connect the wire to the output side of the circuit breaker using the other ring terminal (P/N 410-162-00) provided. Secure the power wire to the existing wire harnesses with tie wraps.
- The 2A and 4A wires are routed to the cyclic switch, which is installed per Section 2.5.
- If the optional co-pilot's seat switch is to be installed, the 2B and 4B wires are routed to the outboard side of the co-pilot's seat, otherwise cap and stow these two wires. The co-pilot's seat switch is installed per section 2.6.
- The #3 and #4 electrical wires are to be routed out the same hole in the forward belly panel as the manual release cable. This hole is created during the manual release cable installation (reference section 2.3).

2.3 Manual Release Cable and Cargo Hook Installation

NOTICE

Install the manual release T-handle on the cyclic control cover in the location shown in Figure 2.3.1. If, due to configuration changes by Robinson Helicopters, this location is not available, locate it as near as possible. IMPORTANT: Before proceeding with drilling hole for T-handle, verify there is clearance beneath the cyclic control cover for the release cable to extend down.

- Drill a .38 inch diameter hole through the left aft corner of the cyclic control cover (Robinson P/N C414-3 or C444-5) and cyclic box (Robinson P/N C338-4) shown in Figure 2.3.1.
- Locate and drill the hole for the cable clamp in the tunnel keel panel as shown.
- Make a cutout in the forward belly panel as shown in Figure 2.3.2 and install the P/N 500-065-00 edge grommet.
- Remove the T-handle and first nut from the P/N 268-014-01 manual release cable.
- Place the 268-014-01 manual release cable inside the tunnel and route the output end of the cable through the cutout in the forward belly panel. Insert the forward end of the cable into the cyclic control cover plate and install the face nut and T-handle as shown in Figure 2.3.1. Install the loop clamp as shown (install on same side as T-handle) and secure the release cable to it.

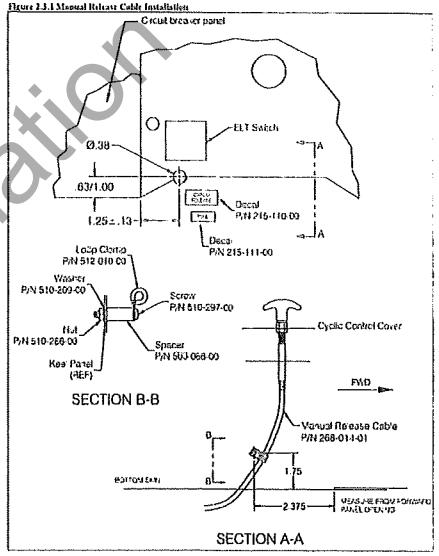
CAUTION

Verify that the manual release cable does not interfere with push/pull control rods and electrical components in the tunnel and that there is sufficient clearance between these items to allow for motion and account for any slack.

- Route the #3 and #4 electrical release wires through the cutout and route aft as shown in Figure 2.3.2 and secure them and the manual release cable with loop clamps.

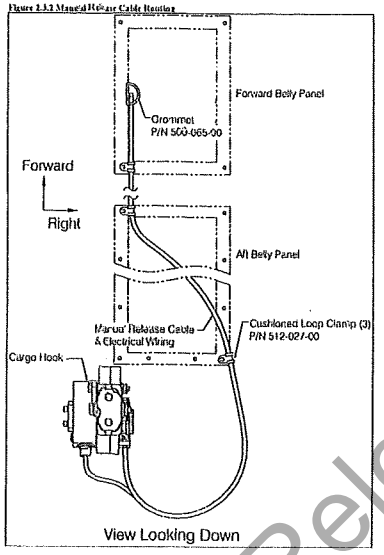
2.3 Manual Release Cable and Cargo Hook Installation continued

Figure 2.3.1 Manual Release Cable Installation



2.3 Manual Release Cable and Cargo Hook Installation continued

Figure 2.3.2 Manual Release Cable Routing



2.3 Manual Release Cable and Cargo Hook Installation continued

- Remove the manual release cover from the cargo hook.
- Screw the manual release cable into the cargo hook (see Figure 2.3.3) by holding the cable and turning the cargo hook.
- Temporarily install the cargo hook to the suspension assembly in order to set the release cable rigging. Temporarily install the cargo hook, (P/N 528-029-00, P/N 528-029-01 or P/N 528-029-02) to the suspension assembly using the hardware as shown in Figure 2.3.3.

If installing the load weigh system, temporarily install the cargo hook with the Pin Load Cell Assembly and hardware as shown in Figure 2.3.4. The cargo hook load beam must point forward.

NOTICE

Do not tighten nut and install cotter pin until after the manual release cable rigging is completed.

Figure 2.3.3 Cargo Hook Installation

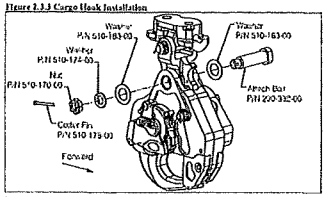
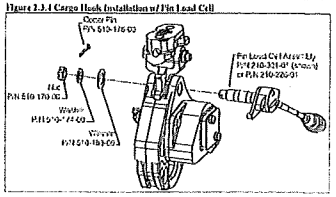


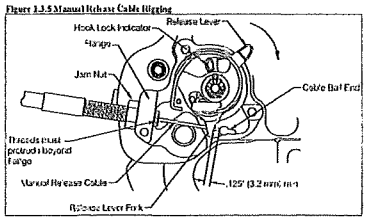
Figure 2.3.4 Cargo Hook Installation w/ Pin Load Cell



2.3 Manual Release Cable and Cargo Hook Installation continued

- Place the inner cable of the manual release cable through the slot of the release lever fork as shown in Figure 2.3.5.
- Rotate the release lever in the clockwise direction to remove free play and hold (the free play is removed when the hook lock indicator begins to move). This is also readily felt as the lever rotates relatively easily for several degrees as the free play is removed.
- Measure the gap between the release lever fork and the cable ball end with the manual release handle in the cockpit in the non-release position. The gap should measure a minimum of .125" (see below). The maximum amount of free play is limited by the manual release cover, i.e. – the ball end must fit inside the manual release cover when it is installed.
- If the gap does not measure at least .125", make adjustments at the cargo hook. This is done by removing the cargo hook from the suspension and rotating the cargo hook in the required direction.
- When correct setting is achieved, tighten the jam nut securely against the cargo hook.
- Re-install the manual release cover on the cargo hook with the two screws removed.

Figure 2.3.5 Manual Release Cable Rigging



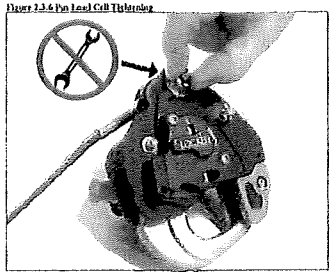
2.3 Manual Release Cable and Cargo Hook Installation continued

- Re-install the washers and nut onto the cargo hook attach bolt or if installing the load weigh system install the washers and nut onto the pin load cell.
- Tighten nut on cargo hook attach bolt or pin load cell until fully seated, finger tight only. Back off nut to previous castellation, if needed, when aligning cotter pin for installation. Install and secure cotter pin.

CAUTION

Do not tighten nut on pin load cell more than finger tight. Over-tightening will damage load cell.

Figure 2.3.6 Pin Load Cell Tightening



2.4 Electrical Wiring to Cargo Hook

- Route the electrical release wiring (#3 and #4 wires) with the manual release cable to the cargo hook.
- Secure the wiring to the manual release cable with ty-wraps at approximately 12" intervals.
- Route (as far as possible) the load cell assembly harness with the manual release cable and electrical release wiring.
- Connect the cargo hook electrical release harness connector to the cargo hook. Listed below is the pin out for the cargo hook connector. Safety-wire the connector.

Table 2.4.1 Cargo Hook Connector

Pin	Function
A	Ground
B	Power

CAUTION

Early versions of the Cargo Hook were equipped with a suppression diode that will be damaged if the Cargo Hook electrical connections are reversed.

2.5 Electrical Release Switches Installation

The column to the left in the table below shows three R44 configurations, refer to the column on the right for installation instructions for the electrical release switch.

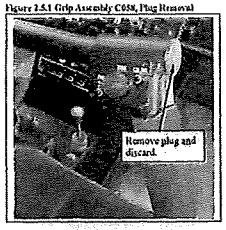
Aircraft and Cycle Configuration	Installation Instructions
R44 with 14 volt electrical system and with C058 Grip Assembly without Start switch (Robinson P/N D227-2) installed in end of cyclic grip. 	Install Switch Housing P/N 232-114-01 (included with Kit P/N 200-326-00) per Section 2.5.1.
R44 and R44 II with 28 volt electrical systems and with C058 Grip Assembly (with and without Start switch installed in end of cyclic grip). 	Install Switch Housing P/N 232-152-01 (included with Kit P/N 200-327 series) per Section 2.5.2. Plug is provided which is to be installed in Switch Housing if Start switch is not present (R44 model).
Early R44s 	The Switch Housing for this configuration is not supplied with these kits. Contact Onboard Systems to obtain Switch Housing P/N 232-163-01, switch P/N 400-059-00, and screw P/N 510-301-00 (qty 2) and install per Section 2.5.3.

2.5 Electrical Release Switches Installation continued

2.5.1 Release Switch Installation - Robinson Grip Assembly C058 – R44

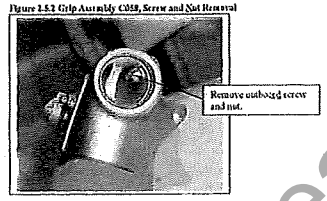
1. Remove Plug (Robinson P/N 2703) shown in Figure 2.5.1 and discard.

Figure 2.5.1 Grip Assembly C058, Plug Removal



2. Remove outboard screw (MS27039C0806) and nut (MS21042L08) shown in Figure 2.5.2.

Figure 2.5.2 Grip Assembly C058, Screw and Nut Removal

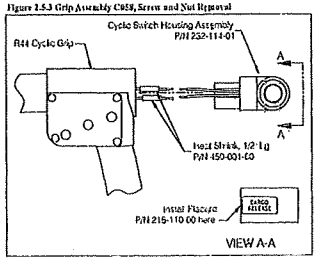


2.5 Electrical Release Switches Installation continued

2.5.1 Release Switch Installation - Robinson Grip Assembly C058 – R44 continued

3. Using a lead wire, pull the number 2A and 4A wires from wire harness P/N 270-095-00 up through the horizontal tube and out the end of the grip assembly.
4. Slide a piece of heat shrink (P/N 450-001-00) over the 2A and 4A wires (ref. Figure 2.5.3).
5. Prep and solder, using a lap splice, the 2A wire from up through the cyclic to one of the wires from the switch and the 4A wire from the cyclic to the other wire from the switch.
6. Slide the heat shrink over the respective solder joints and shrink in place using a heat gun.

Figure 2.5.3 Grip Assembly C058, Screw and Nut Removal



7. Install the Switch Housing Assembly into the end of the grip assembly and secure with the Screw (P/N MS27039C0806) removed earlier. The Nut (P/N MS21042L08) removed earlier will not be re-used for this installation and can be discarded.
8. Check the cyclic for freedom of motion throughout its complete travel range and ensure the wires are not chafing on any components.

2.5 Electrical Release Switches Installation continued

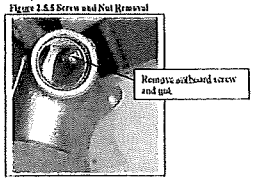
2.5.2 Release Switch Installation - Robinson Grip C058 – R44

1. Remove nut (P/N D227-4) from start switch (P/N D227-2) and remove switch Mount (P/N D343-2) from end of grip assembly. The Start switch is present on the R44 II, on the R44 a hole plug is installed in lieu of the Start switch, remove this plug (ref Figure 2.5.1).

Figure 2.5.4 Start Switch Removal

2. Remove outboard screw (MS27039C0806) and nut (MS21042L08) as shown in Figure 2.5.5. The nut will not be re-used for this installation and can be discarded.

Figure 2.5.5 Screw and Nut Removal

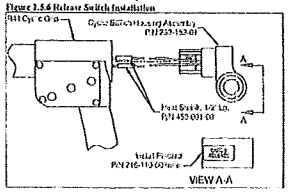


3. Using a lead wire, pull the number 2A and 4A wires up through the horizontal tube and out the end of the grip assembly.
4. Slide a piece of heat shrink (P/N 450-001-00) over the 2A and 4A wires.
5. Prep and solder, using a lap splice, the 2A wire from up through the cyclic to one of the wires from the switch and the 4A wire from the cyclic to the other wire from the switch.
6. Slide the heat shrink over the respective solder joints and shrink in place using a heat gun.

2.5 Electrical Release Switches Installation continued

2.5.2 Release Switch Installation – Robinson Grip C058 – 28V R44 continued

Figure 2.5.6 Release Switch Installation

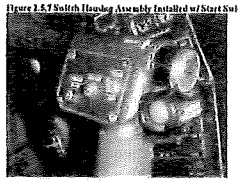


7. Invert the Switch Housing Assembly into the end of the C058 cyclic grip while pulling the Robinson Start switch (if present) through it. Re-install the Robinson start switch into the Switch Mount (P/N D443-2) with the nut and secure the Switch Mount by tightening the pre-installed set screw in the Switch Housing Assembly.

   If the Start switch is not present, insert the provided plug (P/N 505-016-00) into the end of the switch housing assembly.

8. If necessary, while inserting the Switch Housing Assembly into the cyclic grip, pull excess wire back down the cyclic grip. Secure the Switch Housing Assembly into the end of the grip assembly with the MS27039C0806 screw removed earlier.

Figure 2.5.7 Switch Housing Assembly Installed w/Start Switch



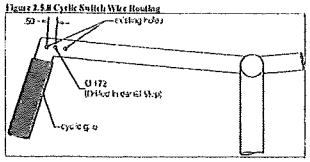
9. Install placard P/N 215-110-00 as shown in Figure 2.5.6.
10. Check the cyclic for freedom of motion throughout its complete travel range and ensure the wires are not chafing on any components.

2.5 Electrical Release Switches Installation continued

2.5.3 Release Switch Installation – Early R44 with A756-6 Grip Assembly

1. Remove the cover to the cyclic switch housing and ensure its wires are clear of the areas to be drilled on the horizontal cyclic control handle.
2. Drill a .172 inch (4.4 mm) diameter hole on the forward side of the cyclic grip as shown in Figure 2.5.8.
3. Use a lead wire and route the number 2A and 4A wires up through the cyclic stick and out the existing wire routing hole. Place a length of heat shrink over the wires that will cover the exposed portion similar to the existing com wires.
4. Using a lead wire again, pull the number 2A and 4A wires up through the cyclic grip and out the .250 hole on the front of the cyclic grip.
5. Place a 1 inch (25.4 mm) length of heat shrink over each wire to the cyclic switch. Prepare each wire end and solder them to the normally open and closed switch terminals as shown in the Figure 2.2.1 wiring schematic. Using a heat gun, shrink the covering material to final size.

Figure 2.5.8 Cyclic Switch Wire Routing



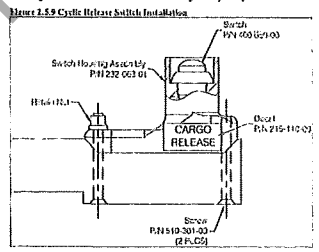
6. Install the P/N 400-059-00 switch in the 232-063-01 cyclic switch housing assembly using needle nose pliers to hold the switch. Install the completed switch housing assembly with the hardware as shown in Figure 2.5.9. Remove the existing switch holding screws and replace them with the longer 510-301-00 screws and retain one of the removed nuts as shown in Figure 2.5.9.

2.5 Electrical Release Switches Installation continued

2.5.3 Cyclic Release Switch Installation continued

7. Re-install the cam switch housing and wires.
8. Check the cyclic for freedom of motion throughout its complete travel range and ensure the wires are not chafing on any components.

Figure 2.5.9 Cyclic Release Switch Installation

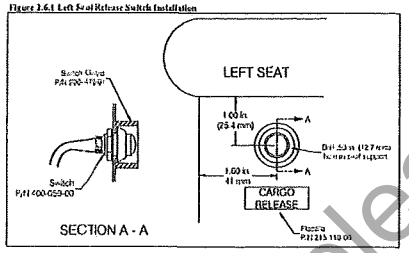


2.6 Optional Left Seat Release Switch Installation

If the left seat release switch installation is not desired, cap and trim wires 2B and 4B per AC 43.13 and skip this section.

1. Drill a .250 inch hole in the left side of the tunnel wall above the main wire bundle in a convenient location or use an existing unused hole in the tunnel wall. Install Grommet (P/N 505-011-00).
2. Drill a .50 inch hole in the outboard side of the left seat support as shown in Figure 2.6.1.
3. Route the number 2B and 4B wires through the grommeted hole and through the left baggage area to the .50 inch hole on the outboard seat support. Secure the wires to the forward seat hinge fasteners with two clamps (P/N 512-018-00).
4. Slide the nut (provided with the switch P/N 400-059-00) over the wires from inside the seat support and feed the wires through the .50 inch hole and through the switch guard (P/N 290-478-01).
5. Place a .50 inch length of heat shrink over each wire to the switch. Solder the wires to the switch as shown in the Figure 2.2.1 wiring schematic. Use a heat gun and shrink the covering material to final size. Place the switch (P/N 400-059-00) into the switch guard and through the seat as shown in Figure 2.6.1 and secure with nut.

Figure 2.6.1 Left Seat Release Switch Installation



2.7 Load Weigh System Installation

Kit P/N 200-327-01 and 200-327-11 feature a load weigh system, which includes the load cell, an electrical wiring internal harness and a C-39 load weigh indicator. KR P/N 200-340-00 is a load weigh system "upgrade" kit for an operator with kit P/N 200-327-00 or 200-327-10 installed.

Install the internal harness and C-39 indicator per this section; refer to section 2.3 for pin load cell installation. If this system is not being installed, skip to section 2.8.

Load Weigh Internal Harness Installation

The Load Weigh Harness is made up of four cables terminated to one connector. The connector is plugged into the back of the indicator. One of the cables is marked "LOAD CELL" and is fitted with a bulkhead fitting. This cable is connected to the load cell. Another cable is marked "POWER" and is connected to the aircraft electrical power. Another cable is marked "LIGHT", refer to the *Jackscrew Internal Back Light* section for installation instructions. The last cable is marked "DATA" and is connected to an optional Data Recorder and C-23 printer.

The load cell cable can be routed with the hook electrical release harness to the cargo hook area. The load cell connector should be mounted in a location close enough to the load cell to ensure the load cell cable is not strained when the cargo hook is moved to its furthermost point, but far enough away to minimize excess cable which may be snagged. Secure the connector with the screws (P/N 510-028-00) and nuts (P/N 510-020-00) provided.

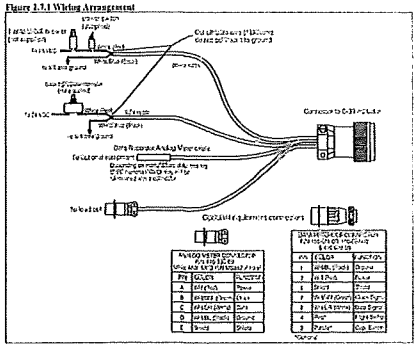
Route the harness to the electrical bus and to the indicator mounting location. Secure the cables to the existing wiring bundles with the ty-wraps. Secure the cables clear of flight control rods.

Electrical Connections

Install the supplied power switch, P/N 400-018-00. The "POWER" cable on the Internal Harness is supplied extra long, cut off the excess cable and use as needed to connect the switch and circuit breaker. Connect the "POWER" white wire (red if wire harness P/N 270-018-00 is installed) to one side of the power switch, connect another piece of suitable wire to the other side of the switch and then to an available 1 or 2 amp circuit breaker as illustrated in Figure 2.7.1. Connect the circuit breaker to the 28 VDC bus. Connect the white/blue wire (black if wire harness P/N 270-018-00 is installed) to the ground bus. The cable shield wire is not grounded at this end of the cable and may be cut off. Use a minimum of 22 gauge wire to make all connections. Secure the connections and protect from corrosion.

2.7 Load Weigh System Installation continued

Figure 2.7.1 Wiring Arrangement



NOTICE

If a C-23 Printer is being utilized with a C-39 Data Recorder, a 3 amp circuit breaker should be used.

2.7 Load Weigh System Installation continued

C-39 Indicator Installation

The indicator should be mounted in a position that is convenient, accessible and visible to the pilot. It can be mounted in a standard 2¼" instrument hole. Connect the indicator to its Internal Harness, refer to *Internal Harness Installation*.

Indicator Internal Back Light

The 210-035-00 Indicator is equipped with an Internal Back Lighting System that can be connected to the aircraft 28 VDC light dimming circuit. Use a 22 gauge, twisted pair, shielded cable to connect the aircraft dimming circuit to the Internal Harness. The cable shield wire is not grounded at this end of the cable and may be cut off.

Indicator Hook-Open Warning

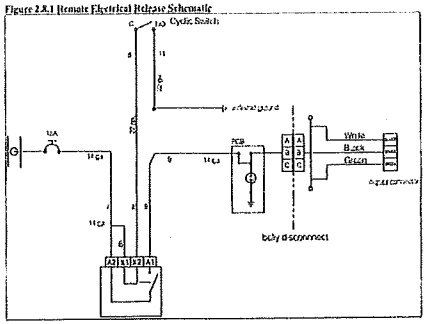
The 210-035-00 Indicator is equipped with a Hook-Open Warning feature that can be connected to a cargo hook equipped with a hook open switch. Depending on the capabilities of the cargo hook switch, the Indicator will flash "HOOK OPEN" when the cargo hook load beam is open. The cargo hook switch must be normally open when the cargo hook load beam is in the closed position. When the load beam is open, one side of the switch must be grounded and the other side of the switch is to be connected to the Indicator. Use a 22 gauge, shielded wire to connect the cargo hook switch to the Indicator. Disassemble the Indicator mating connector and carefully solder the wire, from the cargo hook switch, to pin H. Connect the cable shield wire to airframe ground as close to the cargo hook as possible, at the cargo hook end of the cable ONLY.

2.8 Remote Hook Electrical Release Kit Installation

This section provides instructions for the optional Remote Hook Electrical Release Kit (P/N 200-396-00). Skip to section 2.9 if not installing this kit.

The Remote Hook Electrical Release Kit includes the fixed electrical provisions (switch, circuit breaker, relay, wiring, and connector bracket) and an external harness for operating a remote cargo hook. The schematic for this system is shown below.

Figure 2.8.1 Remote Electrical Release Schematic



Circuit Breaker Installation

- Remove the circuit breaker cover panel and install the 15 amp circuit breaker (P/N 440-013-00) in an available location. On some early models, it may be necessary to remove the panel and make a hole for the additional circuit breaker.
- Use the wire assembly (P/N 270-198-00) and a ring terminal (P/N 410-309-00) as a jumper to power the input side of the circuit breaker in compliance with AC 43.13.

2.8 Remote Hook Electrical Release Kit Installation continued

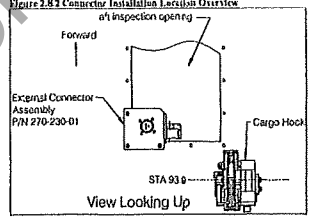
External Connector Assembly Installation

The External Connector Assembly (P/N 270-230-00* or 270-230-01) includes the connector, relay, PCB with surge arrestor for lightning protection, and the wires to route to the cyclic mounted switch and circuit breaker. It is mounted at the aft right (when looking forward) corner of the aft belly inspection panel (see below for overview of location).

**P/N 270-230-00 is not compatible with Robinson panel P/N C794-3 which has the air inlet. P/N 270-230-01 is current production version.*

The external side of the bracket is primed and ready to paint if desired. Mask the connector and top side of bracket before painting.

Figure 2.8.2 Connector Installation Location Overview



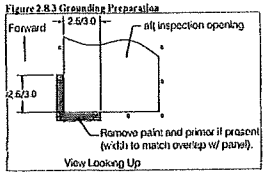
- If the cargo hook is already installed, remove the loop clamps at the inspection panel fasteners along the belly that secure the cargo hook's manual release cable and electrical wiring.
- Remove the forward and aft belly inspection panels, retain all screws as they will be re-used for the External Connector Assembly attachment as well

2.8 Remote Hook Electrical Release Kit Installation continued

External Connector Assembly Installation continued

- If present remove paint/primer on the belly of the aircraft (at overlap of inspection panel and belly) at the faying surfaces of the External Connector Assembly's bracket and the aircraft belly (see below) to provide a ground path for the remote release electrical circuit.

Figure 2.8.3 Grounding Preparation



- Install the "OSRR1-15" label from the P/N 215-284-00 placard sheet on or adjacent to the relay and the "OSCR1-4" label adjacent to the connector.
- Attach the External Connector Assembly using a screw at the corner location and secure in place for wire routing by temporarily installing screws at the other two locations.
- Route the wires (wire nos. 7 and 8) from the External Connector Assembly across the tunnel and then up to the existing main wire bundle with the DME antenna wires and route them forward with the main wire bundle.

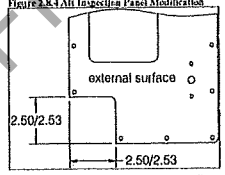
  Route the wires using the following general guidance.
  - Pick up existing wire runs by opening existing cable clamps, nylon ties alone may not be used for primary support.
  - New wire runs should be supported with MS21919 type loop clamps.
  - The distance between supports should not exceed 21".
  - The minimum radius of bends in wire groups or bundles must not be less than 10 times the outside diameter of the largest wire or cable.
  - Inspect and verify that the wire harness may not be manually deflected into a structure with a bend radius less than .125".
- Route the no. 7 wire (14 ga. wire) from the tunnel into the circuit breaker bay using the existing wire harness access hole. Connect the wire to the output side of the circuit breaker using the other ring terminal (P/N 410-309-00) provided.
- Route wire no. 8 to the base of the cyclic. This wire is routed to the release switch per the following section.

2.8 Remote Hook Electrical Release Kit Installation continued

External Connector Assembly Installation continued

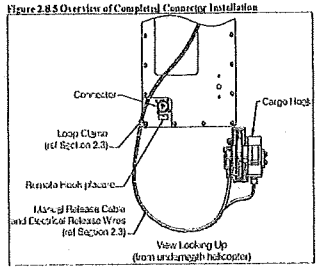
- In preparation for closing out the aft inspection opening cut out the corner of the aft inspection panel per the figure below.

Figure 2.8.4 Aft Inspection Panel Modification



- Remove the two screws temporarily installed to secure the External Connector Assembly and re-install the modified aft inspection panel and the loop clamps for routing of the manual release cable and electrical wires.
- Adhere the "REMOTE HOOK" placard from the placard sheet adjacent to the connector.

Figure 2.8.5 Overview of Completed Connector Installation



- Connect the external harness (P/N 270-203-00) connector to the fixed connector.

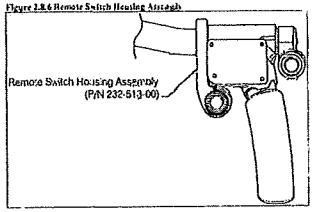
2.8 Remote Hook Electrical Release Kit Installation continued

Switch Housing Assembly Installation

The remote cargo hook release switch is provided pre-assembled into a housing (P/N 232-513-00) which is designed to mount on the cyclic tube (as shown below).

- Remove the two screws and clamp provided pre-assembled onto the switch housing.
- Position the switch housing assembly to the left of the console housing on the end of the cyclic. The exact position of the switch housing assembly can be placed according to pilot preference by rotating it about and/or sliding it inboard on the cyclic shaft. In preparation for wire routing, temporarily secure it in the desired position with the clamp and two screws.

Figure 2.8.6 Remote Switch Housing Assembly



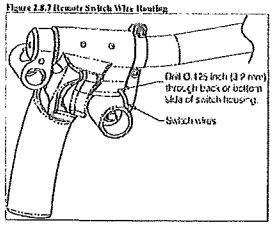
2.8 Remote Hook Electrical Release Kit Installation continued

Switch Housing Assembly Installation continued

Routing of the switch wires requires that a small hole be drilled in the cyclic control housing. The location of this hole can be through the back of the housing or through the bottom depending on the preferred position of the switch housing and/or possible interference with components internal to the housing.

- Remove the cover of the cyclic control housing and any internal components as necessary to provide clearance for drilling.
- Loosen the clamp screws and slide the switch housing assembly out of the way and drill a .125 inch (3.2 mm) hole in the cyclic controls housing in order to feed the wire leads from the switch through.

Figure 2.8.7 Remote Switch Wire Routing



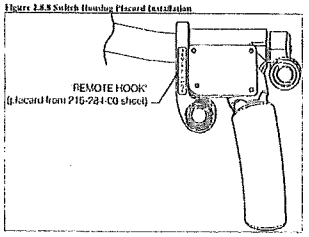
- Using a lead wire, pull wire no. 8 from the wire harness and the 6' length of 22 gauge wire (M22759/34-22-9) up through the cyclic tube and into the cyclic controls housing.
- Slide a piece of the supplied heat shrink (P/N 450-001-00) over the end of each wire (the no. 8 wire and the 22 gauge wire).
- Re-position the switch housing assembly and secure in place by tightening the two screws. Feed the wires through the drilled hole into the housing and cut them to length if necessary. If possible it may be desirable to leave a small service loop in the housing to accommodate future switch position adjustment later.
- Prep and solder (using a lap splice) the no. 8 wire from up through the cyclic to one of the wires from the switch and the 22 gauge wire from up through the cyclic to the other wire from the switch.
- Slide the heat shrink over the respective solder joints and shrink in place using a heat gun.
- Re-assemble and re-install the cyclic control cover.
- Re-install the forward inspection panel.

2.8 Remote Hook Electrical Release Kit Installation continued

Switch Housing Assembly Installation continued

- Install the narrow "REMOTE HOOK" placard from the P/N 215-284-00 placard sheet on the front of the switch housing assembly (as shown below).
- Install the remaining "REMOTE HOOK" placard from the placard sheet adjacent to the circuit breaker.

Figure 2.8.8 Switch Housing Placard Installation



2.9 Placards

Install the following placards.

Table 2.9.1 Placards

DECAL NUMBER (DECAL DESCRIPTION)	LOCATION
P/N 215-110-00 (CARGO RELEASE)	Mount adjacent to the cyclic release switch in clear view of the pilot (see Figure 2.5.3, Figure 2.5.6, or Figure 2.5.9).
P/N 215-110-00 (CARGO RELEASE)	Mount adjacent to the left seat release switch in clear view of the pilot (See Figure 2.6.1).
P/N 215-110-00 (CARGO RELEASE)	Mount adjacent to the mechanical release in clear view of the pilot. (See Figure 2.3.1)
P/N 215-111-00 (PULL)	Mount adjacent to the mechanical release in clear view of the pilot. (See Figure 2.3.1)
P/N 215-112-00 (CARGO)	Mount adjacent to the cargo hook circuit breaker in clear view of the pilot.
P/N 215-343-00 (CARGO RELEASE HOLD FOR 2-1 SECOND)	Mount adjacent to the cyclic release switch in clear view of the pilot (if cargo hook w/ Surefire release (P/N 528-029-02) is installed)
P/N 215-115-00 (FAR PART 133.35(A) OPERATIONS ...)	Mount on the instrument panel in clear view of the pilot.
P/N 215-119-00 (EXTERNAL LOAD LIMIT ... 300 LBS (363 KGS))	Mount on the belly of the aircraft adjacent to the cargo hook attachment point in clear view of the ground support personnel.
P/N 215-284-00 (REMOTE HOOK)	If Remote Hook Release Kit is installed, install on the remote switch housing assembly in clear view of the pilot (See Figure 2.8.5).
P/N 215-284-00 (REMOTE HOOK)	If Remote Hook Release Kit is installed, mount adjacent to the cargo hook circuit breaker in clear view of the pilot.
P/N 215-284-00 (OSRR(1-15)	If Remote Hook Release Kit is installed, mount on or adjacent to the cargo hook relay in the tunnel.
P/N 215-284-00 (REMOTE HOOK)	If Remote Release Kit is installed, mount adjacent to the remote accessory connector on the belly of the helicopter.
P/N 215-284-00 (OSCR1-4)	If Remote Release Kit is installed, mount adjacent to the remote accessory connector on the belly of the helicopter.

2.10 Installation Check-out

After installation of the Cargo Hook Suspension System, perform the following functional checks.

1. Swing the installed Cargo Hook to ensure that the manual release cable assembly and the electrical release cable have enough slack to allow full swing of the suspension assembly without sticking or damaging the cables. The cables must not be the stops that prevent the Cargo Hook from swinging freely in all directions.
2. With no load on the cargo hook load beam, pull the cargo hook mechanical release T-handle, the Cargo Hook should release. Reset the cargo hook load beam.
3. Provide power to the electrical release system. Electrical release system operation depends on the cargo hook P/N installed. The following instructions are applicable to cargo hook P/N 528-029-02 which is equipped with Surefire electrical release. With no load on the cargo hook perform the following, repeat with the switch on the co-pilot's seat (if installed).
   - Very briefly press the Cargo Release switch, the cargo hook should not actuate and the load beam should remain closed.
   - Press and hold the Cargo Release switch for a few seconds, the load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
   - Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the cover.

   The following instructions are applicable to cargo hook P/N 528-029-00.
   - Press and release the Cargo Release switch on the cyclic, the load beam should immediately fall to the open position.
   - Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the cover.
4. If the remote hook release kit (P/N 200-396-00) was installed connect a remote hook to its connector and press the REMOTE HOOK release switch on cyclic. The remote hook should release.

2.11 Component Weights

The weight of the system is listed in Table 2.11.1.

Table 2.11.1 Component Weights

Kit P/N	Weight lbs (kgs)
200-326-00	5.3 (2.4)
200-327-00, 200-327-10	5.3 (2.4)
200-327-01, 200-327-11	6.8 (3.1)
200-396-00	1.1 (0.5)

2.12 Cargo Hook Location

Table 2.12.1 Cargo Hook Location

Fuselage Station	93.9

2.13 Paper Work

In the US, fill in FAA form 337 for the initial installation. This procedure may vary in different countries. Make the appropriate aircraft log book entry. Insert the Rotorcraft Flight Manual Supplement 121-048-00 in the Rotorcraft Flight Manual.

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Section 3

Operation Instructions

Operating Procedures

If the load weigh system is installed, refer to Owner's Manual 120-039-00 for operating instructions for the C-39 indicator

Prior to a flight involving external load operations perform the following:

1. Move the Cargo Hook throughout its complete range of motion and ensure that the manual release cable and the electrical release harness do not limit its movement.
2. Provide power to the electrical release system. Electrical release system operation depends on the cargo hook P/N installed. The following instructions are applicable to cargo hook P/N 528-029-02 which is equipped with Sterling electrical release. With no load on the cargo hook perform the following.
   - Very briefly press the Cargo Release switch, the cargo hook should not actuate and the load beam should remain closed.
   - Press and hold the Cargo Release switch for a few seconds, the load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
   - Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the manual release cover.

   The following instructions are applicable to cargo hook P/N 528-029-00.
   - Press and release the Cargo Release switch on the cyclic, the load beam should fall to the open position.
   - Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the manual release cover.

CAUTION

The release solenoid is intended to be energized only intermittently. Depressing the electrical release button continuously in excess of 20 seconds will cause the release solenoid to overheat, possibly causing permanent damage.

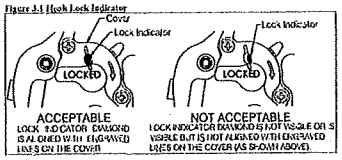
Operating Procedures continued

3. Pull up on the manual release tee handle in the cockpit to test the cargo hook manual release mechanism. The mechanism should operate smoothly and the Cargo Hook must release. Reset the load beam by hand after release. Verify that the hook lock indicator on the side of the hook returns to the fully locked position. In the fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 3.1).

WARNING

In the fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 3.1).

Figure 3.1 Hook Lock Indicator



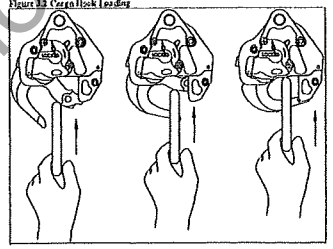
Optional Flight Configuration

The aircraft can be operated with the Cargo Hook and Gimbal Assembly removed. This may be accomplished by removing the Cargo Hook from the Suspension Assembly if no load weigh system is installed. Then remove the Suspension Assembly and Pillow Block together by removing the two Pillow Block mounting fasteners (see Figure 2.1.1). Secure the manual release cable and electrical wire bundle to any convenient location on the frame structure using tie wraps.

Cargo Hook Loading

The cargo hook can easily be loaded with one hand. A load is attached to the hook by pushing the ring upward against the upper portion of the load beam thrust, as illustrated in Figure 3.2, until an internal latch engages the load beam and latches it in the closed position.

Figure 3.2 Cargo Hook Loading



Cargo Hook Rigging

Extreme care must be exercised when rigging a load to the Cargo Hook. Steel load rings are recommended to provide consistent release performance and resistance to fouling. The following illustration shows the recommended rigging and rigging to avoid but is not intended to represent all rigging possibilities.

WARNING

It is the responsibility of the operator to ensure the cargo hook will function properly with each rigging.

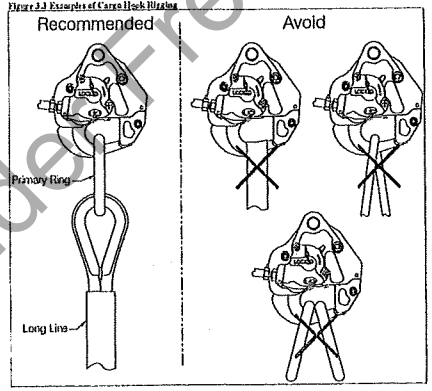
Nylon Type Straps and Rope

WARNING

Nylon type straps (or similar material) or rope must not be used directly on the cargo hook load beam. If nylon straps or rope must be used they should be first attached to a steel primary ring. Verify that the ring will freely slide off the load beam when it is opened. Only the primary ring should be in contact with the cargo hook load beam.

Cargo Hook Rigging continued

Figure 3.3 Examples of Cargo Hook Rigging



Section 4

Maintenance

Refer to the Instructions for Continued Airworthiness (ICA) manual 123-030-00 for maintenance of the cargo hook suspension system. For maintenance of cargo hook P/N 528-029-00, P/N 528-029-01, and P/N 528-029-02 refer to Cargo Hook Component Maintenance Manual 122-017-00.

Instructions for Returning Equipment to the Factory

If an Onboard Systems product must be returned to the factory for any reason (including returns, service, repairs, overhaul, etc.) obtain an RMA number before shipping your return.

NOTICE

An RMA number is required for all equipment returns.

To obtain an RMA, please use one of the listed methods.

- Contact Technical Support by phone or e-mail (Technology@obsystems.com)
- Generate an RMA number at our website: http://www.obsystems.com/rma.php

After you have obtained the RMA number, please be sure to:

- Package the component carefully to ensure safe transit.
- Write the RMA number on the outside of the box or on the mailing label.
- Include the RMA number and reason for the return on your purchase or work order.
- Include your name, address, phone and fax number and email (as applicable).
- Return the components freight, postage, insurance and customs prepaid to:

  Onboard Systems
  13915 NW 3rd Court
  Vancouver, Washington 98685
  USA
  Phone: 360-546-3072

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Section 5

Certification

FAA STC

Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number SR01808SE

Onboard Systems International
13915 NW 3rd Court
Vancouver, WA 98685

27 Federal Aviation

FAA STC continued

Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

(Continuation Sheet)

Number SR01808SE

Onboard Systems International

Canadian Approval

Transport Canada / Transports Canada

Civil Aviation / Aviation Civile

NAPA# P-03-0357
RDIMS 1132295

October 09, 2003

Mr. Mark Hansen
Onboard Systems International
13915 NW, 3rd court
Vancouver, WA 98685
USA

Subject: Acceptance of Foreign STC SR01808SE

Dear Mr. Hansen,

This is in response to FAA letter requesting Transport Canada approval of the subject STC.

In accordance with our current policy associated with the review of foreign STCs, some STCs applicable to certain categories of aircraft may be accepted solely on the basis of their foreign certification, and do not require the issue of a corresponding certificate by Transport Canada. The subject STC fully meets these criteria.

This STC will be entered in the national index of STCs that have been reviewed and accepted by Transport Canada for installation on Canadian-registered aeronautical products.

This letter confirms formal acceptance of the referenced STC by Transport Canada.

Yours truly,

Paul Arnell
For Regional Manager
Aircraft Certification

Cc. Seattle Aircraft Certification Office

Canada

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EASA Approval

EASA

SUPPLEMENTAL TYPE CERTIFICATE

10017020 REV. 3

ONBOARD SYSTEMS INTERNATIONAL

USA

EASA Certification Basis:

For the European Aviation Safety Agency

EASA Approval continued

EASA

ANAC Approval

ANAC
AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

CERTIFICADO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2010S12-07

Este certificado emitido com base na Lei nº 7565, "Código Brasileiro de Aeronáutica", de 19 de dezembro de 1986

é concedido a(o): Onboard Systems International
13915 NW 3rd Court
Vancouver, WA 98685
USA

Por ter a modificação no projeto de tipo do produto abaixo citado, observadas as limitações e condições especificadas, satisfeita aos requisitos de aeronavegabilidade aplicáveis.

Produto Original - Número do Certificado de Tipo: B102 (ANAC).

Fabricante: Robinson.

Modelo(s): R44 and R44 II.

DESCRIÇÃO DA MODIFICAÇÃO AO PROJETO DE TIPO:

Fabrication of Onboard System International Model 200-324-00 and 200-326-00 12V cargo hook kits, Model 200-325-00 and 200-327-00 28V cargo hook kits, Model 200-325-01 and 200-327-01 28V cargo hook kit with load weight, and Model 200-340-00 load weight Kit in accordance with Onboard Systems Master Drawing List (MDL) No. 155-124-00, Rev. 7, dated April 9, 2010, or later approved revision.

This CST validates in Brazil the STC # SR01608SE, issued by FAA (USA).

LIMITAÇÕES E CONDIÇÕES:

See continuation sheet for applicable data.

DATAS:

Do Requerimento 17 Sep. 2010 Da emissão 20 Dec. 2010 Da reemissão

HELIO TARGINO JUNIOR
Gerente Geral Certificação de Tipo de Asas Fixas

DAIO ISHIKURA
Superintendente da Aeronavegabilidade

ANAC Approval continued

ANAC
AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

Folha de Continuação

CERTIFICADO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2010S12-07

LIMITAÇÕES E CONDIÇÕES

I. The approval of this type design change should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications, including changes in Type Design, will introduce no adverse effect upon the airworthiness of that aircraft.

II. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

III. Operation must be performed in accordance with the applicable FAA approved Rotorcraft Flight Manual Supplement (AFMS) specified below:

- Document No. 121-051-00, Rev. 1, dated 25 Feb. 2010, or later approved revision, for the Onboard Systems 200-324-00, 200-325-00 and 200-326-01 Cargo Hook kits; or,
- Document No. 121-018-00, Rev. 2, dated 01 July 2009, or later approved revision, for the Onboard Systems 200-326-00, 200-327-00 and 200-327-01 Cargo Hook kits.

IV. Installation of the Cargo Hook Kit in accordance with the following approved documents:

- Owner' Manual document No. 120-137-00, Rev. 4, dated 27 July 2010, or later approved revision, for the Onboard Systems 200-324-00, 200-325-00, or 200-325-01 Cargo Hook kit;
- Owner's Manual document No. 120-132-00, Rev. 5, dated 27 July 2010, or later approved revision, for the Onboard Systems 200-326-00, 200-327-00 or 200-327-01 Cargo Hook kit.

V. Installation of the 200-340-00 Load Weight Kit in accordance with above identified Onboard System International Owner's Manual for either the model 200-325-01 or 200-327-01 cargo hook kit, as applicable

ANAC Approval continued

ANAC
AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL - BRASIL

Folha de Continuação

CERTIFICADO SUPLEMENTAR DE TIPO
(Supplemental Type Certificate)

NÚMERO 2010S12-07

LIMITAÇÕES E CONDIÇÕES

VI. This modification must be inspected and Maintained in accordance with:

- Onboard Systems International Instruction for Continued Airworthiness, Section ATA 5 document No. 123-030-00, Rev. 04, dated 23 July 2010 or later FAA approved revision;
- Onboard Systems International Cargo Hook Component Maintenance Manual document No. 122-001-00, Rev. 13 dated 13 Sep. 2010, or later FAA approved revision for cargo hook kit P/N 200-324-00, P/N 200-325-00 and P/N 200-325-01;
- Onboard Systems International Cargo Hook Service Manual document No. 122-018-00, Rev. 7, dated 17 Sep. 2010, or later FAA approved revision for cargo hook kit P/N 200-326-00, and
- Onboard Systems International Cargo Hook Service Manual document No. 122-017-00, Rev. 10 dated 17 Sep. 2010, or later FAA approved revision for cargo hook kit P/N 200-327-00 and 200-327-01.

VII. Approval of this change in type design applies only to those Robinson rotorcraft models listed above which are equipped with Robinson hard points down lock part number (P/N) D134-1.

VIII. Cargo hook kit models 200-324-00 and 200-326-00 are eligible for installation on R44 only. Cargo Hook Kit models 200-325-00, 200-325-01, 200-327-00 and 200-327-01 are eligible for installation on R44 II only.

IX. A copy of this Certificate and the Supplement referred on item III, as applicable, above shall be maintained as part of the permanent records of the modified aircraft

---------- END ----------

PLEASE CHECK WEB SITE AT WWW.ONBOARDSYSTEMS.COM FOR THE LATEST REVISION OF THIS MANUAL

Instructions for Continued Airworthiness Cargo Hook Suspension Systems

For the

Robinson R44 Series

STC SR01808SE

Part Numbers
200-324-00, 200-325-00, 200-325-01, 200-326-00, 200-327-00, 200-327-01, 200-327-10, 200-327-11 and 200-396-00

ONBOARD SYSTEMS INTERNATIONAL

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Record of Revisions

Revision	*Date*	*Page(s)*	*Reason for Revision*
4	07/23/10	00-00-00 Page 2, 05-00-00 Pages 1, 6 thru 8 25-00-00 Pages 3, 7, 13 thru 18	Updated format of safety labels (see section 0.12). Corrected weight and cg data in table 25.2. Added new suspension assembly configuration to Section 5 and Section 25.
5	11/12/13	00-00-00 Page 2, Section 5, 25-00-00 Page 15	Updated Distribution of Instructions for Continued Airworthiness section. Updated installation of pin load cell. Updated external load operation definition. Moved items from daily check to annual inspection and removed daily check section.
6	02/13/14	25-00-00 Page 7, 13 & 14	Added bolt P/N 511-076-00 as an alternate to P/N 290-505-00.
7	06/16/15	Section 5 pages 5, 6, 8, 9, Section 25 pages 3, 7, 15	Added load cell P/N 210-301-01, listed load cell in parts requiring NDT, updated storage instructions section to refer to cargo hook CMM for cargo hook storage.
8	10/09/15	Section 5 page 1, 4, 7 Section 11, Section 25 pages 2-4, 6, 11, 12, 17-20	Added remote hook electrical release kit P/N 200-396-00 and associated maintenance instructions. Updated trouble shooting table, clarified suspension disassembly.
9	07/29/16	Section 25 page 4, 6, 10, 17, 18, 19	Added external connector assembly P/N 270-230-01, clarified release switch removal and re-installation instructions, added references to CMM 122-017-00 in troubleshooting table.
10	03/28/17	Section 1 page 1 Section 5 page 1, 2 Section 11 Section 25 pages 1, 2, 2 – 5, 20	Added kit P/N's 200-327-10 and 200-327-11 which include cargo hook P/N 528-029-02 with Surefire release. Added associated instructions.
11	03/08/18	Section 5 Page 8	Removed magnetic particle inspection requirement.

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Section 5 Inspection and Overhaul Schedule	1, 2	10	03/28/17
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Figures

Tables

Section 5
Inspection and Overhaul Schedule

5.1 Cargo Hook Suspension System Inspection

The scheduled inspection intervals noted below are maximums and are not to be exceeded. If the cargo hook suspension system is subjected to unusual circumstances, extreme environmental conditions, etc., it is the responsibility of the operator to perform the inspections more frequently to ensure proper operation.

Annually or 100 hours of external load operations (see section 5.2 for definition), whichever comes first, inspect the cargo hook and suspension per the following. Refer also to Component Maintenance Manual 122-001-00 or 122-017-00 for additional criteria.

1. Activate the electrical system and press the Cargo Release button to *ensure the cargo hook electrical release system is operating correctly.* For the keepered cargo hook (P/N 528-010-04 or 528-010-06) approximately 10 lbs of downward force is required to open the cargo hook load beam and the load beam should automatically re-latch after release.

   The keeperless cargo hook (P/N 528-029-00, 528-029-01, or 528-029-02) should open with no load on it and should be closed by hand after release. If the hook does not release or re-latch, do not use the unit until the problem is resolved.

CAUTION

Depressing the electrical release button continuously in excess of 20 seconds will cause the cargo hook solenoid to overheat, possibly causing permanent damage.

   The following instructions are applicable to cargo hook P/N 528-029-02 which is equipped with Surefire electrical release. With no load on the cargo hook perform the following.

   - *Very* briefly press the Cargo Release switch, the cargo hook should not actuate and the load beam should remain closed.
   - Press and hold the Cargo Release switch for a few seconds, the load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
   - Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the manual release cover (see Figure 5.1.1).

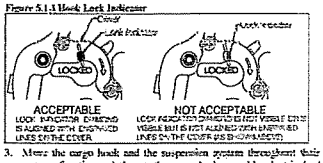
5.1 Cargo Hook Suspension System Inspection continued

2. Activate the manual release system by pulling the T-handle in the cockpit. The cargo hook must release. For the keepered cargo hook the load beam must automatically re-latch. For the keeperless cargo hook reset the load beam by hand after release and verify that the lock indicator returns to the fully locked position (see Figure 5.1.1).

CAUTION

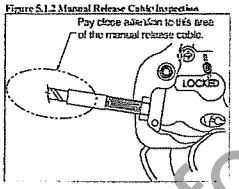
In the fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 5.1.1).

Figure 5.1.1 Hook Lock Indicator



3. Move the cargo hook and the suspension system throughout their full ranges of motion and observe the manual release cable, electrical release harness and load cell harness (if installed) to ensure that they have enough slack. The cable and harnesses must not be the stops that prevent the cargo hook or suspension from moving freely in all directions.
4. Visually inspect the manual release cable for damage, paying close attention to the flexible conduit at the area of transition to the cargo hook end fitting (refer to Figure 5.1.2). Inspect for splitting of the outer conduit and separation of the conduit from the steel end fitting.

Figure 5.1.2 Manual Release Cable Inspection



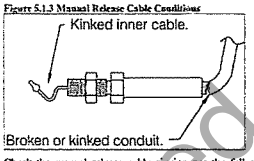
5.1 Cargo Hook Suspension System Inspection continued

5. Remove the manual release cover from the cargo hook and inspect the visible section of the inner cable for kinks or frays.

CAUTION

Manual release cables are inspectable items and must be replaced as condition requires. Broken or kinked conduit, inner cable kinks (ref Figure 5.1.3), frays, or sticky operation are each cause for immediate replacement.

Figure 5.1.3 Manual Release Cable Conditions

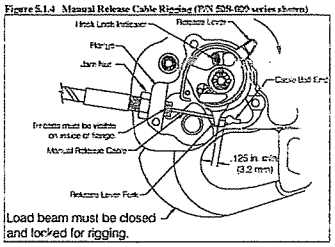


6. Check the manual release cable rigging per the following. With the cargo hook in the closed and locked position, rotate the release lever in the clockwise direction to remove free play (the free play is taken up when the hook lock indicator begins to move) and measure the gap between the cable ball end and the release lever fork with the manual release handle in the cockpit in the non-release position. There must be a minimum of .125 inches (3.2 mm) between the cable ball end and fork fitting as shown in Figure 5.1.4. The maximum amount of free play is limited by the manual release cover, i.e. – the ball end must fit inside the manual release cover when it is installed.

5.1 Cargo Hook Suspension System Inspection continued

7. If necessary adjust the manual release cable system to obtain a minimum of .125 inches (3.2 mm). Some adjustment can be made at the cargo hook by loosening the jam nut and turning the manual release cable or cargo hook in the required direction and re-tightening the jam nut. Ensure the manual release cable fitting threads maintain full thread engagement with the cargo hook side plate boss (i.e.- the end of the threads should not be recessed within the boss). Tighten jam nut. Re-install the manual release cover with the two screws.

Figure 5.1.4 Manual Release Cable Rigging (P/N 528-029 series shown)



8. Visually inspect for presence and security of fasteners and electrical connections.
9. Visually inspect the external electrical wire harness for damage and security.
10. Visually inspect the manual release cable for damage and security, paying close attention to the area of transition from the steel fitting at the cargo hook to the flexible cable housing.
11. Visually inspect the suspension structural components for cracks and damage, paying close attention to the load link (item 7 in Figure 5.1.7).
12. Visually inspect the pin load cell strain relief and harness for damage and security (if load weigh system is installed).
13. In the cockpit visually inspect for security of the electrical release switches on the cyclic including the remote hook release switch if kit P/N 200-306-00 is installed.

Section 0
Introduction

0.4 Scope

The following information is necessary to carry out the service, maintenance, and inspection of Cargo Hook Suspension System P/N's 200-324-00, 200-325-00, 200-325-01, 200-326-00, 200-327-00, 200-327-01, 200-327-10, and 200-327-11 and Remote Hook Electrical Release Kit P/N 200-396-00.

0.5 Purpose

The purpose of this Instructions for Continued Airworthiness (ICA) manual is to provide the information necessary to service, inspect and maintain the Cargo Hook Suspension Systems in an airworthy condition.

0.6 Arrangement

This manual contains instructions for the installation, maintenance inspection and operation of the Cargo Hook Suspension Systems on Robinson R44 and R44 II helicopters. The manual is arranged in the general order that maintenance personnel would use to maintain and operate the Cargo Hook Suspension System in service. The arrangement is:

Section 0 Introduction.
Section 4 Airworthiness Limitations (None apply to this System.)
Section 5 Inspection and Overhaul Schedule
Section 11 Placards and Markings
Section 25 Equipment and Furnishings

0.7 Applicability

These Instructions for Continued Airworthiness are applicable to Cargo Hook Suspension System P/N's 200-324-00, 200-325-00, 200-325-01, 200-326-00, 200-327-00, 200-327-01, 200-327-10, and 200-327-11 and Remote Hook Electrical Release Kit P/N 200-396-00 on the Robinson R44 and R44 II helicopters.

0.9 Abbreviations

FAA Federal Aviation Administration
FAR Federal Aviation Regulation
ICA Instructions for Continued Airworthiness

0.12 Precautions

The following definitions apply to safety labels used in this manual.

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Draws the reader's attention to important or unusual information not directly related to safety.

Used to address practices not related to personal injury.

0.19 Distribution of Instructions for Continued Airworthiness

Before performing maintenance ensure that the Instructions for Continued Airworthiness (ICA) in your possession is the most recent revision. Current revision levels of all manuals are posted on Onboard Systems Int'l web site at www.robinsonsystems.com.

Onboard Systems offers a free notification service via fax or e-mail for product alerts and documentation updates. By registering Onboard Systems products on the web site, we will be able to contact you if a service bulletin is issued, or if the documentation is updated.

Notices can be chosen to be received on an immediate, weekly, or monthly schedule via fax, email or both methods. There is no charge for this service. Please visit the Onboard Systems web site at www.robinsonsystems.com/notify.php to get started.

Section 4
Airworthiness Limitations

The Airworthiness Limitations section is FAA approved and specifies inspections and other maintenance required under Sect. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No airworthiness limitations are associated with this type design change.

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5.1 Cargo Hook Suspension System Inspection continued

Every 1000 hours of external load operations or 5 years, whichever comes first, remove the suspension assembly from the helicopter, and disassemble per the following instructions and inspect. Refer to figures for part identification. Refer to section 5.2 for the overhaul schedule for the cargo hook.

1. Remove the cargo hook from the suspension assembly by removing cotter pin (item 5), nut (item 4), washers (items 2 and 3), and attach bolt (item 1). If the load weigh system is installed, the attach bolt (item 1) and one washer (item 2) are replaced by the pin load cell (item 6).

Figure 5.1.5 Cargo Hook Attachment Hardware

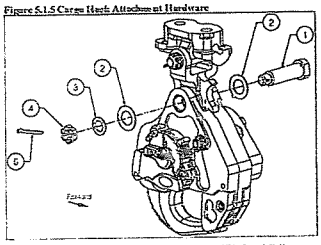
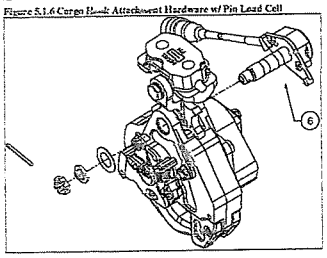


Figure 5.1.6 Cargo Hook Attachment Hardware w/ Pin Load Cell



5.1 Cargo Hook Suspension System Inspection continued

Table 5.1.1 Cargo Hook Attachment Hardware Parts

ITEM	PART NO.	DESCRIPTION	QTY
1*	290-332-00	Attach Bolt	1
2*	510-183-00	Washer	2
3	510-174-00	Washer	1
4	510-170-00	Nut	1
5	510-178-00	Cotter Pin	1
6	210-301-01**	Pin Load Cell	1

* If the load weigh system is installed, the Attach Bolt and (1) item 2 washer are replaced by the Pin Load Cell as shown.

** Supersedes P/N 210-226-01. these P/Ns are interchangeable in this installation.

5.1 Cargo Hook Suspension System Inspection continued

Disassemble the Suspension Assembly per the following (refer to Figure 5.1.7 for item nos.). Press out Bushings and Pin using an arbor press or similar.

1. Remove Link Assembly (items 6, 7, and 8) from the Gimbal Assembly (3 and 4) by removing cotter pin, nut and bolt (9, 10, and 11).
2. Remove the Gimbal Assembly from the Pillow Block (1) by removing the Pin (2). If P/N 291-108-01 Pillow Block (see Figure 5.1.8 for identification) is installed, the Pin must be pressed out. Press out in the opposite direction of the INSTALL PIN engraved arrow (see Figure 5.1.8).

Figure 5.1.7 Suspension Assembly Parts

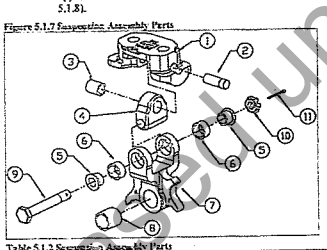


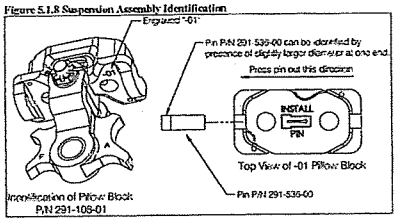
Table 5.1.2 Suspension Assembly Parts

ITEM	PART NO.	DESCRIPTION	QTY
1	291-108-01	Pillow Block	1
	291-108-00	Pillow Block	1*
2	291-536-00	Pin	1
	291-107-00	Pin	1*
3	291-109-00	Bushing	1
4	291-110-00	Gimbal	1
5	291-112-00	Bushing	2
6	291-111-00	Bushing	2
7	291-113-00	Load Link	1
8	290-364-00	Bushing	1
9	510-631-00	Bolt	1
10	510-634-00	Nut	1
11	510-681-00	Cotter Pin	1

* P/Ns 291-108-00 and 291-107-00 are superseded by P/Ns 291-108-01 and 291-536-00 respectively. P/N 291-108-01 Pillow Block must be used with P/N 291-536-00 Pin and P/N 291-108-00 Pillow Block must be used with P/N 291-107-00 Pin.

5.1 Cargo Hook Suspension System Inspection continued

Figure 5.1.8 Suspension Assembly Identification



Carefully inspect and repair the suspension system detail parts in accordance with the instructions in Table 5.1.3. Inspect the parts in a clean, well-lit room.

5.1 Cargo Hook Suspension System Inspection Schedule continued

Table 5.1.3 Suspension System Inspection

Component	Damage Permitted without Repair	Repair	Maximum Damage which Causes Replacement
Attach Bolt P/N 299-332-00 (Item 1, Figure 5.1.5)	Wear on outside diameter, diameter greater than .495".	None.	Wear on outside diameter, diameter less than or equal to .495". Cracks.
Pin Load Cell P/N 210-226-01 or P/N 210-301-01 (Item 1, Figure 5.1.6)	Wear on outside diameter of pin, diameter greater than .495"	None	Wear on outside diameter, diameter less than .495". Cracks.
Pillow Block P/N 291-108-01 P/N 291-108-06 (Item 1, Figure 5.1.7)	Dents, gouges, nicks, and scratches less than .010" deep.	Blend at 20:1 ratio, length to depth, to provide smooth transitions. Part is 15-5 stainless steel, no touch up finish is required.	Dents, gouges, and scratches greater than .030" deep. Cracks.
Pin P/N 291-107-00 P/N 291-536-00 (Item 2, Figure 5.1.7)	Wear on outside diameter, diameter greater than .300".	None.	Wear on outside diameter, diameter less than or equal to .300".
Gimbal Bushing P/N 291-109-00 (Item 3, Figure 5.1.7)	Wear on inside diameter, diameter less than or equal to .328".	None.	Wear on inside diameter, diameter greater than .328".
Gimbal P/N 291-110-00 (Item 4, Figure 5.1.7)	Dents, gouges, nicks, and scratches less than .010" deep.	Blend at 20:1 ratio, length to depth, to provide smooth transitions. Part is 15-5 stainless steel, no touch up finish is required.	Dents, gouges, and scratches greater than .020" deep. Cracks.

5.1 Cargo Hook Suspension System Inspection Schedule continued

Table 5.1.3 Suspension System Inspection

Component	Damage Permitted without Repair	Repair	Maximum Damage which Causes Replacement
Flange Bushing P/N 291-112-00 (Item 5, Figure 5.1.7)	Wear on shoulder outside diameter, diameter greater than .422".	None.	Wear on shoulder outside diameter, diameter less than .422".
Bushing P/N 291-111-00 (Item 6, Figure 5.1.7)	Wear on inside diameter, diameter less than .445".	None.	Wear on inside diameter, diameter greater than .445".
Load Link P/N 291-113-00 (Item 7, Figure 5.1.7)	Dents, gouges, nicks, and scratches less than .010" deep.	Blend at 20:1 ratio, length to depth, to provide smooth transitions. Part is 15-5 stainless steel, no touch up finish is required.	Dents, gouges, and scratches greater than .030" deep. Cracks.
Bushing P/N 290-364-00 (Item 8, Figure 5.1.7)	Wear on inside diameter, diameter less than .520".	None.	Wear on inside diameter, diameter greater than .520".
Threaded fasteners	None.	None.	It is recommended to replace all threaded fasteners at overhaul.

5.2 Cargo Hook Overhaul Schedule

Overhaul the cargo hook in accordance with the guidelines below. Contact Onboard Systems for the latest revision of overhaul instructions for the cargo hook and guidance to locate authorized overhaul facilities.

Time Between Overhaul (TBO): 1000 hours of external load operations or 5 years, whichever comes first.

NOTICE

Hours of external load operations should be interpreted to be (1) anything is attached to the primary cargo hook (whether or not a useful load is being transported) and (2) the aircraft is flying. If these conditions are NOT met, time does NOT need to be tracked.

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Section 11
Placards and Markings

11.1 Placards

As applicable the 200-324-00, 200-325-00, 200-325-01, 200-326-00, 200-327-00, 200-327-01, 200-327-10, 200-327-11, and 200-396-00 kits require that the placards shown in Table 11.1 be installed.

Table 11.1 Cargo Hook Suspension System Placards

Placard part number and appearance	Location
P/N 215-110-00 CARGO RELEASE	Mounted adjacent to the cyclic release switch in clear view of the pilot. Mounted adjacent to the left seat release switch in clear view of the pilot (if optional left seat release switch is installed). Mounted adjacent to the mechanical release T-handle in clear view of the pilot.
P/N 215-111-00 PULL	Mounted adjacent to the mechanical release in clear view of the pilot.
P/N 215-112-00 CARGO	Mounted adjacent to the cargo hook circuit breaker in clear view of the pilot.
P/N 215-119-00 EXTERNAL LOAD LIMIT = 350 LBS. (350 KGS)	Mounted on the belly of the aircraft adjacent to the cargo hook attachment point in clear view of the ground support personnel.
P/N 215-115-00 FOR FAR PART 133 OPERATIONS NO PERSON MAY BE CARRIED DURING THE (1) A FLIGHT CREW MEMBER OR TRAINEE (2) PERFORMING ANY REQUIRED FLIGHTTIME IN CONNECTION WITH THE EXTERNAL LOAD OPERATION OR (3) IS NECESSARY TO ACCOMPLISH THE WORK ACTIVITY DIRECTLY ASSOCIATED WITH THAT OPERATION	Mounted on the instrument panel in clear view of the pilot.

11.1 Placards continued

Table 11-1 Cargo Hook Suspension System Placards, continued

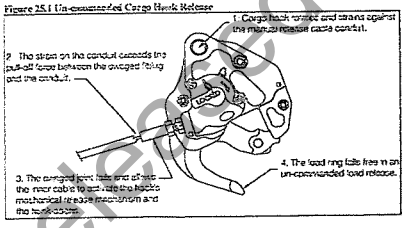
Placard part number and appearance	Location
P/N 215-336-00 NOTICE	Mounted on the bottom of solenoid housing of cargo hook P/N 528-029-02 (included with kit P/N 200-327-10 and 200-327-11 only).
P/N 215-343-00 CARGO RELEASE HOLD FOR > 1 SECOND	Located adjacent to the cargo hook release switch on the cyclic (included with kit P/N 200-327-10 and 200-327-11 only).
P/N 215-010-00 ELECTRONIC WEIGHING SYSTEM	When 200-325-01 or 200-327-01 system is installed, mounted adjacent to both the power switch and the circuit breaker in full view of the pilot and co-pilot.
P/N 215-012-00 TURN THE WEIGHING SYSTEM OFF WHEN NAVIGATION EQUIPMENT IN USE. NO AIRCRAFT OPERATION SHOULD BE PREDICATED ON THE READING OF THE ONBOARD WEIGHING SYSTEM.	When Onboard Systems 200-325-01 or 200-327-01 system is installed, mounted adjacent to the Onboard Systems digitalSensing indicator in full view of the pilot and co-pilot.
P/N 215-284-00 Multiple Placard Sheet REMOTE HOOK	When Onboard Systems 200-396-00 system is installed, mounted on the release switch housing on the cyclic (next to the remote release switch) in full view of the pilot and co-pilot.
P/N 215-284-00 Multiple Placard Sheet REMOTE HOOK	When Onboard Systems 200-396-00 system is installed, mounted adjacent to the remote cargo hook circuit breaker in clear view of the pilot and next to the belly mounted remote hook electrical connector.

Section 25
Equipment and Furnishings

⚠WARNING

Un-commanded cargo hook release will happen if the manual release cable is improperly restrained. The cable must not be the type that permits the Cargo Hook free swinging freely in all directions. If the Cargo Hook loads cause the latch to strain against the manual release cable the looped end of the cable may separate allowing the inner cable to activate the cargo hook manual release mechanism. The result is an un-commanded release. Ensure that no interference of suspension and Cargo Hook geometry is restrained by the manual release cable.

Figure 25.1 Un-commanded Cargo Hook Release



25.1 Cargo Hook Connector

Listed below is the pin out for the cargo hook connector.

Table 25.1 Cargo Hook Connector

Pin	*Function*
A	Ground
B	Positive

25.2 Description

The Cargo Hook Suspension Systems are comprised of:

- The cargo hook, which is mounted to the belly of the helicopter through a gimbaled suspension utilizing an existing hard point. The 200-324-00 kit features the 14V keepered cargo hook (P/N 528-010-06), the 200-325-00 kit features the 28V keepered cargo hook (P/N 528-010-04), the 200-326-00 kit features the 14V keeperless cargo hook (P/N 528-029-01), and the 200-327-00 features the 28V keeperless cargo hook (P/N 528-029-09).
- The 200-325-01 and 200-327-01 cargo hooks suspension systems are the same as the 200-325-00 and 200-327-00 systems respectively except they include a load weigh system. The load weigh system provides a reading of the weight of the load being lifted to the pilot. It includes a pin load cell at the cargo hook, load indicator in the cockpit, and the interconnecting electrical wire harness.
- Kit P/Ns 200-327-10 and 200-327-11 include Cargo Hook P/N 528-029-02 with Surefire release as part of its electrical release system. Surefire release is a safety enhancement which requires the release switch to be held for approximately ½ second. This protects against inadvertent load release due to accidental contact with the release switch or mistaken actuation of the release switch when another is intended.
- An electrical release system that provides a means for releasing a load by pilot actuation of a push-button switch installed on the end of the cyclic grip assembly. The kits also include an optional push-button switch that is mounted on the outboard side of the co-pilot's seat. The electrical release system is powered from the bus through a 10 amp circuit breaker in a relay in the center tunnel. The switches control the relay and energize the DC solenoid in the Cargo Hook, opening the hook and releasing the cargo. A schematic for the electrical system is shown in Figure 25.3.
- A manual release system, which provides a means of releasing a cargo hook load in the event of an electrical release system failure. A T-handle mounted to the cyclic control cover actuates it.
- Ground personnel may also release a load by the actuation of a lever located on the side of the cargo hook.

An optional remote hook electrical release kit (P/N 200-396-00) is available for installation under this STC. This kit consists of the fixed electrical provisions for operation of a remote cargo hook. It includes an electrical release switch on the cyclic, circuit breaker, relay, connector on the belly, and the interconnecting wiring.

25.5 Component Weights

The weight and cg of the systems are listed in Table 25.2.

Table 25.2 System Weights and CGs

Kit P/N	Weight lbs (kgs)	STA in (mm)	BL in (mm)
200-324-00, 200-325-00, 200-326-00, 200-327-00, 200-327-10	5.3 (2.40)	93.9 (2385)	-4.1 (-104)
200-325-01, 200-327-01, 200-327-11	6.8 (3.10)	93.9 (2385)	-4.1 (-104)
200-324-00, 200-325-00, 200-326-00, 200-327-00 and 200-327-10 with cargo hook and suspension removed (see section 25.16 for removal instructions).	1.5 (0.68)	63.3 (1608)	-4.1 (-104)
200-394-00 (optional accessory kit)	1.1 (0.5)	63.3 (1608)	0.0

25.12 Storage Instructions

Refer to the cargo hook CMM for storage instructions for the cargo hook. Clean the exterior suspension components thoroughly of excess dirt and grease with a rag before packaging. Pack the unit in a heat-sealable package. If the unit is to be stored for long periods in a tropical climate it should be packed in a reliable manner to suit local conditions. Refer to MIL-PRF-23199 and MIL-STD-2073-1 for additional guidance.

Package the unit in a suitable fiberboard box and cushion the unit to prevent shifting. Seal the fiberboard box with tape and mark the box with the contents and date of packaging.

25.15 Trouble Shooting

Table 25.3 Troubleshooting

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Cargo hook does not operate electrically or manually.	Defective internal mechanism.	Remove and replace cargo hook (see sections 25.16 and 25.17) or repair per CMM 122-091-00 or 122-017-00.
Cargo hook (except P/N 528-029-00) does not operate electrically, manual cable release operates normally.	Open electrical circuit, faulty wiring, circuit breaker, switch or solenoid.	Using multi-meter, check the resistance between pins A and B of electrical connector (see note 1 below). If open indication is obtained, remove and replace cargo hook (see sections 25.16 and 25.17). If switch is faulty, remove and replace per Section 25.16 and 25.17.
Cargo hook P/N 528-029-02 (includes electric time delay circuit) does not operate electrically, manual release operates normally.	Release switch not held down long enough. Open electrical circuit, faulty wiring, circuit breaker, switch or solenoid.	Hold the release switch for a longer time. The time delay circuit incorporates an electronic delay of approximately ½ second after which time the hook solenoid will activate repeatedly. If the release switch is not held down long enough the cargo hook's solenoid will not activate. Check the aircraft circuit for opens and shorts by using a multi-meter on the hook connector. When the release switch is pressed 28V aircraft voltage should be present on the connector pins. Check the aircraft connector polarity. The time delay circuit is polarity sensitive and protected against reverse polarity. +28V should be on pin B and ground on pin A. Check the power pins on the hook itself. A multi-meter set to the kilo-ohms range should read between 2-8Kohms. Some autoranging meters will not read properly so be sure to try a manual kilo-ohms range. If the meter reads open or short there is a problem with the solenoid module itself and the hook should be replaced or repaired per its CMM.
Cargo hook operates electrically, but not manually.	Defective manual release cable. Defective manual release system.	Inspect manual release cable and cable connection to Cargo Hook. Remove and replace cargo hook (see Sections 25.16 and 25.17) or repair per CMM 122-091-00 or 122-017-00.
Load beam fails to re-latch after being reset.	Defective latch mechanism.	Remove and replace cargo hook (see sections 25.16 and 25.17) or repair per CMM 122-091-00 or 122-017-00.
Force required to release hook with T-handle on cyclic control lever exceeds 14 lbs (62.3 N).	High cable friction or friction in internal mechanism of hook.	Remove cable from hook and check cable and hook independently to determine cause. Remove and replace defective components per 25.16 and 25.17.
With release cable disconnected at hook, the force required to move T-handle on cyclic control lever exceeds 6 lbs (26.7 N).	Kinks or wear in cable, frozen water in cable, debris or damage to cable quick disconnect fitting or lever mechanism on cyclic	Inspect individual components to isolate problem. Remove and replace defective parts (see Sections 25.16 and 25.17 for removal and replace instructions for manual release cable).

25.15 Troubleshooting continued

Table 25.3 Troubleshooting

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
Cargo hook manual release cable pull-off force exceeds 8 lbs (35.6 N) at the hook.	Friction in internal mechanism.	Remove and replace cargo hook (see Section 25.16 and 25.17) or repair per CMM 122-091-00 or 122-017-00.
Circuit breaker opens when cargo hook is energized.	Short in the system, faulty wiring, circuit breaker or solenoid.	Check for shorts to ground along length of wire harness. Check solenoid resistance (see note 1), repair or replace defective parts.
Load Weigh Indicator does not light up.	Faulty wiring or circuit breaker.	Check the circuit breaker and wiring (see Note 2). If this doesn't help, remove and replace indicator per sections 25.16 and 25.17.
The displayed load on the Load Weigh Indicator is incorrect.	Incorrect calibration code.	Ensure the correct calibration code has been entered.
Indicator displayed load is not stable.	Dampening level is too small.	Adjust the dampening level to a larger number.
Indicator displayed load takes too long to change the reading when the load is changed.	Dampening level is too large.	Adjust the dampening level to a smaller number.

Table 25.3 Notes:

1. Checking resistance at pins A and B.

Check for 3.0 to 4.0 ohms (cargo hook part numbers 528-010-04 and 528-029-00) or 1.2 to 1.6 ohms (cargo hook part numbers 528-010-06 and 528-029-01) between pins A and B of electrical connector located on the cargo hook (see below).

Figure 25.2 Cargo Hook Electrical Connector

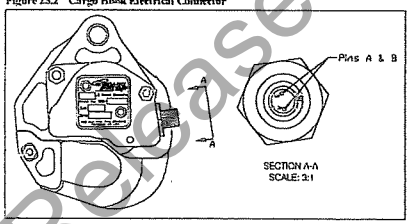


Table 25.3 Notes continued:

2. Electrical Wiring
Inspect wire harness for general condition and chafing along length of wire runs.

Figure 25.3 Electrical Release Schematic

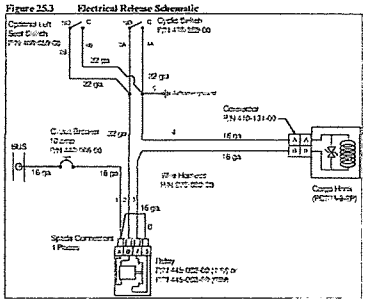
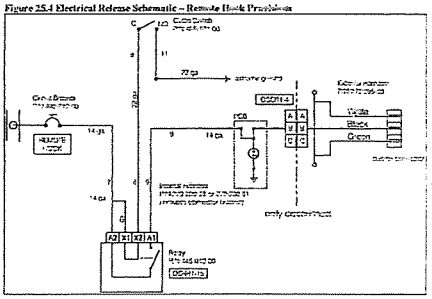


Figure 25.4 Electrical Release Schematic – Remote Hook Provisions



25.16 Component Removal

Cargo Hook and Pin Load Cell Assembly Removal

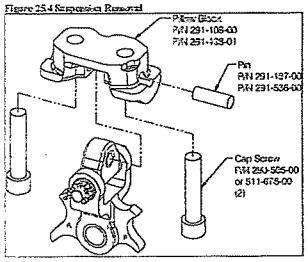
1. Disconnect the electrical connector from the cargo hook.
2. Remove the cotter pin P/N 510-178-00 from the Attach Bolt P/N 290-332-00 or Pin Load Cell Assembly (P/N 210-226-01 or P/N 210-301-01) if load weigh system is installed.
3. Remove the castellated nut P/N 510-170-00 from the Attach Bolt (or Pin Load Cell Assembly).
4. Remove attach bolt (or Pin Load Cell Assembly) and all washers.
5. Remove manual release cover by removing two screws.
6. Remove the manual release cable from the cargo hook by unhooking the cable ball end from the fork fitting on the manual release lever and loosening the jam nut and unthreading it by rotating the cargo hook about it.
7. Remove cargo hook from suspension system.

Suspension Removal

To remove the Suspension Assembly:

1. Remove the safety wire from the two Cap Screws and remove the Cap Screws that secure the Pillow Block to the aircraft hard point.
2. Separate the Suspension Assembly from the Pillow Block by removing the Pin from within the Pillow Block. The configuration with Pillow Block P/N 291-103-01 and Pin P/N 291-536-00 (see Figure 5.1.8 for identification) requires that the Pin be pressed out. Press pin out in the opposite direction of the "INSTALL PIN" engraving on top of the Pillow Block.

Figure 25.4 Suspension Removal

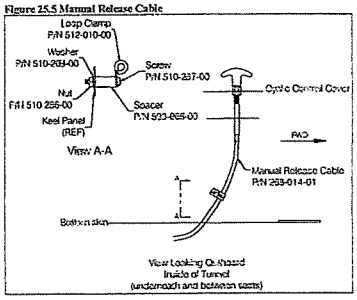


25.16 Component Removal continued

Manual Release Cable Removal

1. In the cockpit unthread the T-handle and nut from the end of the release cable located on the cyclic control cover (ref. Figure 25.5).
2. Remove the loop clamp located on the tunnel keel panel underneath the cyclic control cover (ref. Figure 25.5).

Figure 25.5 Manual Release Cable

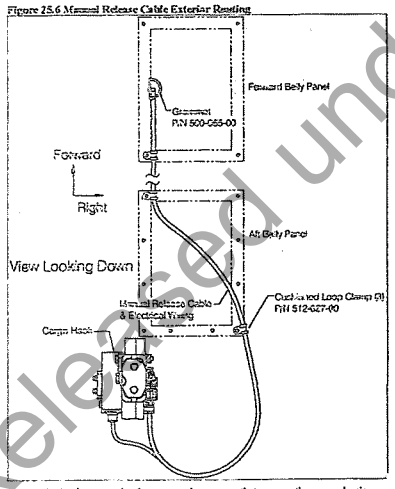


25.16 Component Removal continued

Manual Release Cable Removal continued

3. Pull the cable down through the cyclic control cover and through the grommet in the forward panel in the bottom skin (ref Figure 25.6) and remove the loop clamps at the forward and aft panels.

Figure 25.6 Manual Release Cable Exterior Routing



4. At the cargo hook remove the screws that secure the manual release cover to the hook and unhook the cable ball end from the fork fitting.
5. Loosen the jam nut and unthread the release cable from the hook.

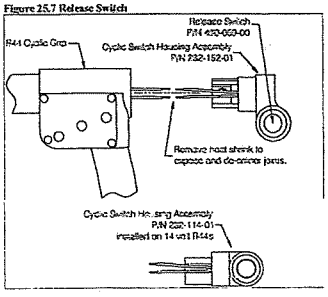
25.16 Component Removal continued

Release Switch Removal

The release switch is located on the cyclic grip assembly. There are two different cyclic switch configurations (P/N 232-114-01 and P/N 232-152-01) to accommodate different configurations of the R44 cyclic.

1. Disconnect the battery.
2. Remove the nut that secures the Robinson start switch (the start switch is present on the R44 II only) on the end of the cyclic grip.
3. If start switch is present, loosen the set-screw that secures the start switch mount inside the end of the Switch Housing Assembly (P/N 232-152-01) and remove the switch mount.
4. Remove the screw that secures the Switch Housing Assembly to the cyclic grip and pull the switch housing out of the cyclic far enough to access the solder joint on wires 2A and 4A.
5. Remove the heat shrink over the solder joints and de-solder the joints.
6. Unthread the release switch (P/N 460-059-00) from the housing and pull the wires through.

Figure 25.7 Release Switch



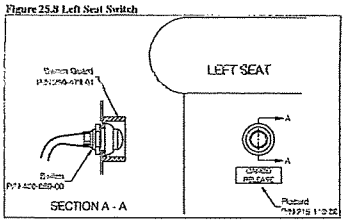
25.16 Component Removal continued

Left Seat Release Switch Removal

This is an optional installation; thus it may not be present on all helicopters with these cargo hook kits.

1. Disconnect the battery.
2. Hinge the seat bottom forward and ready under the seat to outboard the nut from the back of the switch.
3. Pull the switch out far enough to de-solder the wires from the back.

Figure 25.8 Left Seat Switch



Remote Hook Release Switch Removal

The remote hook switch is included with the optional Remote Hook Electrical Release Kit. The remote hook switch is located within a housing to the left of the pilot's cyclic grip conical housing.

1. Disconnect the battery.
2. Remove the cyclic control cover to access the wiring within the housing.
3. Locate the two wires from the remote hook switch, strip the heat shrink off, and de-solder the solder joints with the internal harness.
4. Remove the silicone from around the back of the switch and pull the wires through until they extend straight out the back of the housing.
5. Use a pair of needle-nose pliers to grab the back of the switch and outboard it from the housing.

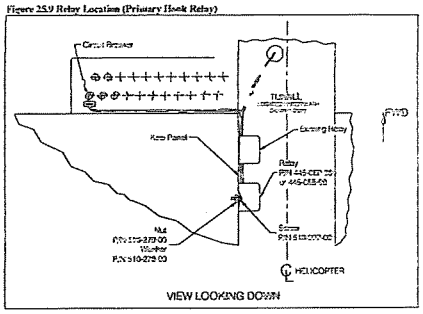
25.16 Component Removal continued

Relay Removal

The relay (P/N 445-002-09 (14 volt) or P/N 445-003-09 (28 volt)) is located on the keel panel in the tunnel between the seats and below the floor (see below). To remove the relay:

1. Disconnect the battery.
2. Remove the 4 spade connectors at the relay.
3. Remove the two nuts, screws and washers.

Figure 25.9 Relay Location (Primary Hook Relay)



Remote Hook Relay Removal

The relay (P/N 445-013-09) for the remote hook is located on the connector bracket inside the aft end of the aft inspection panel opening in the belly.

1. Remove the aft inspection panel on the belly.
2. If necessary to facilitate removal of the relay remove the connector bracket from the belly by removing the three screws and lower the connector bracket as much as its connected wires allow.
3. Remove the two 4-40 nuts securing the relay to the studs of the relay socket and unplug the relay.

25.17 Component Re-installation

Suspension Re-installation

- Apply sealant to the side of the Suspension Assembly (P/N 232-292-01) Pillow Block which is to be installed against the belly skin.
- Orient the Suspension Assembly as shown in Figure 25.10 and secure it to the helicopter with the two P/N 260-505-00 or 511-076-00 cap screws. **

NOTICE

Install the Suspension Assembly so that the engraved "F" is forward and the engraved "A" is aft as shown in Figure 25.10.

- Torque screws to 26 ft-lbs.
- Safety-wire the cap screws to the ears on the pillow block.

** If installing Suspension Assembly P/N 232-292-09, Pillow Block P/N 291-108-00, and Pin P/N 291-107-00 perform the following.

NOTICE

The Suspension Assembly P/N can be determined by checking the underside of the Pillow Block. P/N 232-292-01 Suspension Assembly has a "-01" on the underside of the Pillow Block.

- Grease the Pin (P/N 291-107-00) with Mobilgrease 28 or equivalent before assembly.
- Partially insert the Pin into the Pillow Block.
- Hold the Suspension Assembly (P/N 232-292-00) in the orientation as shown in Figure 25.11, position it within the slot of the Pillow Block, and slide the Pin through the Suspension Assembly and into the other side of the pillow block.

25.17 Component Re-installation continued

Suspension Re-installation continued

Figure 25.10 Suspension Assembly Installation – (P/N 232-292-01)

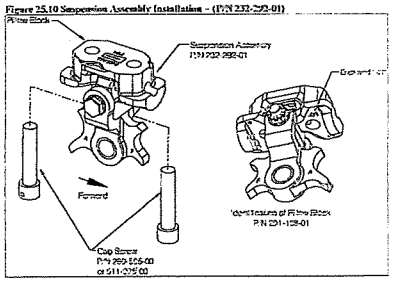
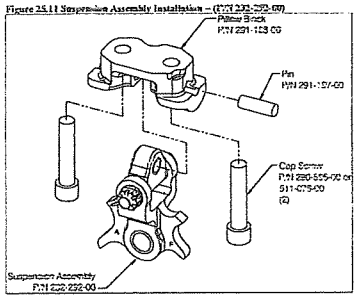


Figure 25.11 Suspension Assembly Installation – (P/N 232-292-09)



25.17 Component Re-installation continued

Cargo Hook Re-installation

1. Attach the Cargo Hook to the suspension system by installing the Attach Bolt P/N 290-332-06 and washer P/N 510-183-00 as illustrated in Figure 25.12. If the Pin Load Cell is installed refer to Figure 25.13.
2. Install washer P/N 510-183-00, washer P/N 510-174-00, and nut P/N 510-170-00 over bolt end (or pin load cell end).
3. Tighten nut on cargo hook attach bolt or pin load cell until fully seated, finger tight only. Back off nut to position castellation, if needed, when aligning cotter pin for installation. Install and secure cotter pin P/N 510-178-00.

CAUTION

Do not tighten nut on pin load cell more than finger tight. Over-tightening will damage load cell.

Figure 25.12 Cargo Hook Attachment Hardware

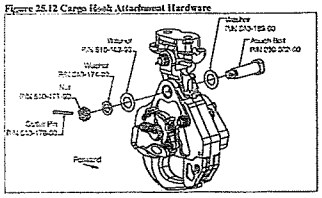
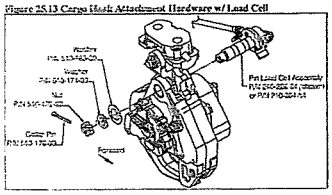


Figure 25.13 Cargo Hook Attachment Hardware w/ Load Cell



25.17 Component Re-installation continued

Manual Release Cable Re-installation

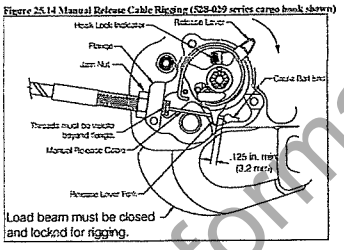
1. Route the cable forward through the loop clamps and grommet (ref Figure 25.6).
2. Route the cable through the loop clamp on the lead panel and to the hole in the cyclic control cover and secure with nut. Install T-handle (ref. Figure 25.5).
3. Remove the manual release cover from the cargo hook.
4. Screw the manual release cable into the cargo hook by holding the cable and turning the cargo hook or vice versa.
5. Temporarily install the cargo hook onto the suspension.

CAUTION

The cargo hook load beam must be closed and locked when rigging the manual release cable.

6. Rotate the release lever in the clockwise direction to remove free play and hold (the free play is removed when the hook lock indicator (528-029 series cargo hook only) begins to move). This is also readily felt as the lever rotates relatively easily for several degrees as the free play is removed.
7. Measure the gap between the release lever fork and the cable ball end with the T-handle in the cockpit in the non-release position. The gap *should* measure a minimum of .125" (see below).
8. If the gap does not measure at least .125", make adjustments at the cargo hook by removing the cargo hook from the suspension and rotating the cargo hook in the required direction.
9. When correct setting is achieved, tighten the jam nut securely against the cargo hook and re-install the manual release cover.

Figure 25.14 Manual Release Cable Rigging (528-029 series cargo hook shown)

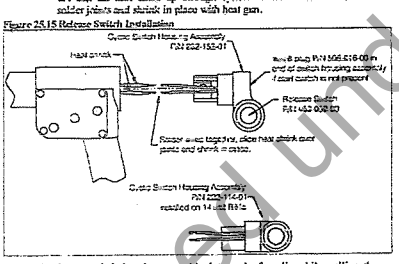


25.17 Component Re-installation continued

Release Switch Re-installation

1. Solder 22 ga. M22759 wires onto each switch terminal, thread switch into switch housing, and feed wires through the switch housing.
2. Slide 1" long piece of heat shrink over each wire and solder each wires 2A and 2B that come up through cyclic. Position heat shrink over solder joints and shrink in place with heat gun.

Figure 25.15 Release Switch Installation



3. Insert switch housing assembly into end of cyclic while pulling the Robinson start switch through (start switch is applicable to R44 II only).
4. Secure switch housing assembly into cyclic with screw removed previously.
5. If present, place Robinson Switch Mount into switch housing and secure Start Switch into Switch Mount with nut removed previously. Secure Switch Mount in switch housing by tightening set screw.

NOTICE

Refer to Robinson maintenance documentation for part numbers for the Start Switch, Switch Mount, and associated hardware.

25.17 Component Re-installation continued

Left Seat Release Switch Re-installation

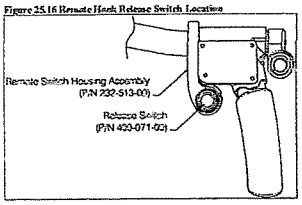
The left seat installation is an optional installation.

1. Feed electrical harness wires through nut (provided with switch P/N 409-059-00), up through hole in side of left seat, and through switch guard (P/N 290-478-01).
2. Solder wires onto switch (refer to Figure 25.3 for electrical schematic).
3. Insert switch through switch guard and into hole in side of seat.
4. Hold the switch and thread on the nut to secure.

Remote Hook Release Switch Re-installation

1. The remote hook release switch (included with the optional kit 290-396-00) is located on the pilot's cyclic, to the left of the control grip.
2. Thread the release switch into the housing, use a pair of needle nose pliers on the backside of the switch to thread it all the way in.
3. Solder two 5" long 22 ga. M22759 wires to the terminals on the back of the switch, slide 1" long pieces of 1/8" heat shrink over each wire and shrink in place over the solder joints. Feed the wiring through the hole in the switch housing. Use RTV silicone to secure the wires at the hole to prevent chafing.
4. Clamp the release switch housing assembly onto the cyclic with the two screws (P/N 511-011-00) and torque to 12-15 in-lbs.
5. Remove the cyclic control grip cover to access the wiring.
6. Feed the wiring from the switch through the hole in the cyclic housing, slide a piece of 1/8" heat shrink over each wire and solder to the wires from the internal harness (refer to wiring diagram in Figure 25.4). Slide heat shrink over solder joints and shrink into place.
7. Re-install cyclic cover (refer to Robinson Helicopter documentation).

Figure 25.16 Remote Hook Release Switch Location



25.17 Component Re-installation continued

Relay Re-installation

1. Secure relay to keel panel in tunnel with two screws (P/N 510-277-00), washers (P/N 510-278-00), and nuts (P/N 510-279-00).
2. Connect the four spade connectors to the relay. Refer to electrical schematic (Figure 25.3) for pin out information.

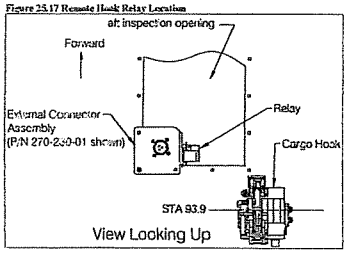
Remote Hook Relay Re-installation

The remote hook relay (P/N 445-013-00) is installed on the Connector Bracket Assembly (P/N 270-230-00 or P/N 270-230-01*) located at the aft right corner of the aft inspection panel opening on the belly of the helicopter (see Figure 25.17 below). Install the relay per the following.

*P/N 270-230-01 supersedes P/N 270-230-00 and provides compatibility with Robinson panel P/N C794-3 with air inlet.

1. If necessary remove the Connector Bracket Assembly by removing its *three mounting screws to facilitate installation of the relay*.
2. Plug the relay into the relay socket located on the connector bracket assembly and secure with the two 4-40 nuts and washers removed previously (nuts and washers are provided with the relay socket).
3. Re-install aft inspection panel.

Figure 25.17 Remote Hook Relay Location



25.18 General Procedural Instructions-Testing

After re-installation of the cargo hook or manual release cable, perform the following:

1. Activate the electrical system and press the Cargo Release button to ensure the cargo hook electrical release system is operating correctly. The cargo hook must release. Reset the hook by hand after release.

CAUTION

Energizing the cargo hook release solenoid continuously in excess of 20 seconds will cause it to overheat, possibly causing permanent damage.

The following instructions are applicable to cargo hook P/N 528-029-00 which is equipped with Sterling electrical release. With no load on *the cargo hook perform the following.*

- *Very* briefly press the Cargo Release switch, the cargo hook should not actuate and the load beam should remain closed.
- Press and hold the Cargo Release switch for a few seconds, the load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
- Push up on the load beam and verify that it latches and the hook lock indicator is aligned with the engraved line on the manual release cover (see Figure 5.1).

2. Activate the release T-handle located on the cyclic control cover to test the cargo hook *manual release mechanism*. The mechanism should operate smoothly and the cargo hook must release. For the 528-029 series keeperless cargo hooks reset the hook by hand after release. If the cargo hook does not release or re-latch, do not use the unit until the difficulty is resolved.
3. Swing the installed Cargo Hook to ensure that the manual release cable assembly and the electrical release cable have enough slack to allow full swing of the suspension assembly without shrinking or damaging the cables. The cables must not be the stops that prevent the Cargo Hook from swinging freely in all directions.

PLEASE CHECK WEB SITE AT WWW.ONBOARDSYSTEMS.COM FOR THE LATEST REVISION OF THIS MANUAL

FAA APPROVED ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

STC SR01808SE

Onboard Systems
Cargo Hook Suspension System
with Keeperless Cargo Hook

Robinson R44, R44 II

R/N _____ **S/N** _____

FAA Approved: [redacted]
for Manager, Seattle Aircraft Certification Office
Federal Aviation Administration
Renton, Washington

Date: MAY 19 2017

Record of Revisions

Rev.	Date	Page(s)	Reason for Revision
0	Jan. 07, 2008	All	Initial Release.
1	Feb. 25, 2009	All	Added Load Weigh System and accompanying instructions.
2	July 1, 2009	All	Added figure for manual release rigging check, revised figure for hook lock indicator for clarification.
3	March 29, 2016	All	Added remote hook electrical release system, re-formatted document, updated limitations section.
4	Oct. 24, 2016	All	Added "Warning" regarding long line recoil, updated pre-flight check for the C-39 load indicator, added "NOTICE" to note that the Remote Hook is not included with the kits.
5	May 19, 2017	All	Added cargo hook (P/N 528-029-02) with Surefire Release and associated instructions.

SECTION 1
GENERAL

INTRODUCTION

This supplement must be attached to the appropriate FAA approved Rotorcraft Flight Manual (RFM) when an Onboard Systems 200-326-00, 200-327-00, 200-327-01, 200-327-10, or 200-327-11 Cargo Hook Suspension Kit and/or 200-396-00 Remote Hook Release Kit is installed in accordance with Supplemental Type Certificate (STC) NO. SR01808SE. The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement, consult the basic RFM.

SYSTEM DESCRIPTION

The cargo hook suspension kit provides a means to transport jettisonable external loads. The kit includes the cargo hook, a structural linkage assembly (referred to as suspension assembly) which connects the cargo hook to the existing hard point on the belly of the helicopter and the cargo hook's primary and backup quick release systems for jettisoning of the external load.

In addition to the basic cargo hook suspension kits (P/N 200-326-00 (for 14 volt aircraft) and P/N 200-327-00 (for 28 volt aircraft)) a second kit configuration (P/N 200-327-01) for 28 volt aircraft includes a load weigh system. The load weigh system includes a load cell above the cargo hook which serves as part of the structural linkage, a load weigh indicator and an internal electrical wiring harness. This system provides the pilot with an indication of the weight of the external load being carried.

SYSTEM DESCRIPTION continued

Kit P/Ns 200-327-10 and 200-327-11 are the same as 200-327-00 and 200-327-01 respectively except they include a cargo hook (P/N 528-029-02) with a delay circuit to help protect against inadvertent load release as a result of accidental contact with the Cargo Release switch or inadvertently pressing this switch. This delay circuit requires that the release switch be held for approximately ½ second in order to release the cargo hook load. This feature is referred to as Surefire Release.

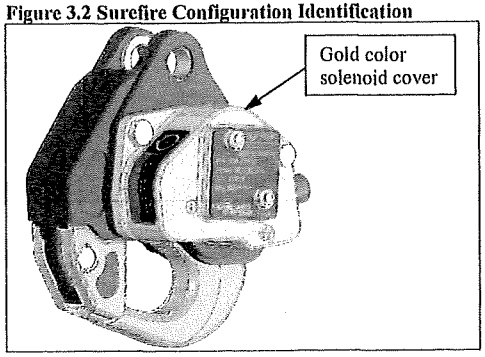
Either of the basic kit configurations may be complemented by a remote hook release kit (P/N 200-396-00). The remote hook release kit provides the fixed electrical provisions including a release switch on the cyclic grip for the release of a load from a remote cargo hook at the end of a long line.

PRE-FLIGHT CHECK continued

NOTICE

By design (to help protect against inadvertent load release) cargo hook P/N 528-029-02 requires that the switch on the cyclic be held for at least ½ second to release the load.

Figure 3.2 Surefire Configuration Identification



9. If the optional co-pilot switch is installed on the outboard side of the co-pilot's seat (ref. Figure 3.7) repeat the previous step except use this switch.

NOTICE

The co-pilot switch is an optional installation which is intended primarily for external load training. If this switch is installed but rarely used, take precautions to protect the switch from being inadvertently contacted.

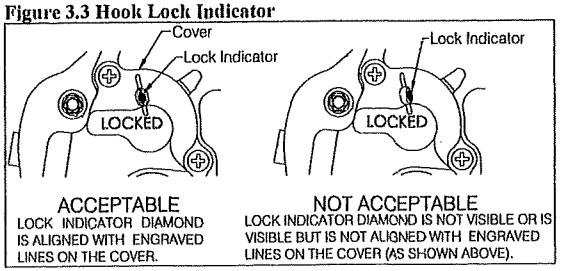
PRE-FLIGHT CHECK continued

10. Cycle the manual release mechanism to ensure proper operation. Pull up on the manual release T-handle located between the pilot and co-pilot seat. The cargo hook load beam must open. Return the cargo hook load beam to the locked position by manually pushing up on the load beam. The load beam should snap shut. Verify that the hook lock indicator on the side of the hook returns to the fully locked position.

⚠ CAUTION

In the fully locked position the hook lock indicator must align with the lines on the manual release cover (see Figure 3.3).

Figure 3.3 Hook Lock Indicator

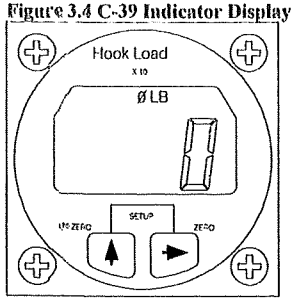


PRE-FLIGHT CHECK continued

If the Load Weigh System is installed, perform the following additional procedure.

1. Power on the C-39 Load Indicator. After a brief self-diagnostic routine is complete the indicator display should indicate "0" as shown below (with no load on the cargo hook).

Figure 3.4 C-39 Indicator Display



NOTICE

Refer to Owner's Manual 120-039-00 for setup instructions including changing the units, changing the calibration code, zeroing the display, changing the dampening level, etc.

PRE-FLIGHT CHECK continued

If the Remote Hook Electrical Release Kit is installed and the external load operation involves a remote hook, perform the following additional procedure.

1. Connect the electrical cable from the remote hook to the connector on the electrical cable suspended from the belly mounted connector. Press the "REMOTE HOOK" release switch on the cyclic and verify that the remote hook releases.

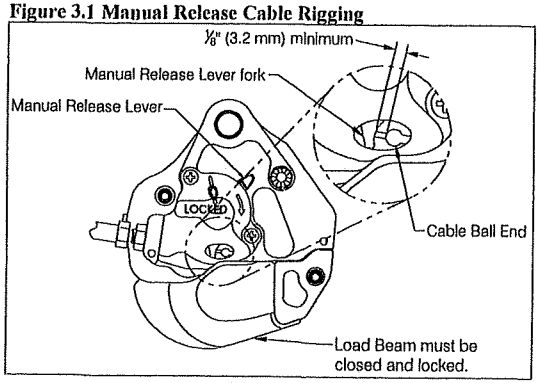
NOTICE

The remote hook is NOT included with the remote hook electrical release kit. Consult the remote hook manual for its operation instructions.

PRE-FLIGHT CHECK continued

7. Check the manual release cable rigging through the window in the cargo hook manual release cover. Rotate the manual release lever clockwise to remove the free play (the free play is taken up when the hook lock indicator begins to move, this is also readily felt as the lever rotates relatively easily for several degrees as the free play is taken up) and hold it in this position while checking the gap between the release lever fork and the cable ball end as shown below. Visually check that there is approximately a minimum gap of 1/8" (3.2 mm) as shown in Figure 3.1.

Figure 3.1 Manual Release Cable Rigging



⚠ CAUTION

The load beam must be closed and locked when checking the free play in the release cable.

PRE-FLIGHT CHECK continued

8. Cycle the electrical release system to ensure proper operation. The following instructions are applicable to cargo hook P/N 528-029-00.

NOTICE

If Cargo Hook with Surefire Release (P/N 528-029-02) is installed, the electrical release includes a ½ second time delay. See specific procedures in this step for this cargo hook model.

- Press the CARGO RELEASE switch on the cyclic (ref. Figure 3.6) and the cargo hook should open with no load on it.
- Return the cargo hook to the closed and locked position by manually pushing up on the load beam. The load beam should snap shut.

The following instructions are applicable to the cargo hook P/N 528-029-02. This cargo hook can also be identified by its gold color solenoid cover (see Figure 3.2).

- *Very* briefly press the Cargo Release switch, the cargo hook should not actuate and the load beam should remain closed.
- Press and hold the Cargo Release switch for several seconds, the load beam should fall to the open position and the cargo hook solenoid should continue to cycle repeatedly.
- Return the cargo hook to the closed and locked position by manually pushing up on the load beam. The load beam should snap shut.

PLACARDS continued

CARGO RELEASE
HOLD FOR > 1
SECOND

Adhered adjacent to the cockpit cargo release switch if optional Cargo Hook with Surefire Release P/N 528-029-02 is installed.

Adhered on the solenoid housing of optional cargo hook P/N 528-029-02 which is equipped with Surefire Release.

ELECTRONIC WEIGHING SYSTEM
DECAL P/N 215-010-00

When 200-327-01 or 200-327-11 kit is installed, mounted adjacent to both the power switch and the circuit breaker in view of the pilot and co-pilot.

TURN THE WEIGHING SYSTEM OFF WHEN NAVIGATION EQUIPMENT IN USE. NO AIRCRAFT OPERATION SHOULD BE PREDICATED ON THE READING OF THE ONBOARD WEIGHING SYSTEM.
(DECAL P/N 215-012-00)

When 200-327-01 or 200-327-11 kit is installed, mounted adjacent to the load weigh indicator in view of the pilot and co-pilot.

SECTION 3
NORMAL PROCEDURES

STATIC DISCHARGE

Prior to attaching an external load, instruct the ground crew to ensure that the helicopter has been electrically grounded to discharge static electricity. If possible, maintain ground contact until hook up is completed.

PRE-FLIGHT CHECK

Before a flight involving external load operations perform the following procedures.

1. Check all mounting fasteners to ensure that they are tight.
2. Check the electrical connector and harness for damage and security.
3. Check the external portion of the manual release cable for damage with close attention to the transition at the cargo hook for tearing or splitting or exposed inner wires.

⚠ CAUTION

Manual release cables are wearable items and must be replaced as condition requires. Broken or kinked conduit or sticky operation are cause for immediate replacement.

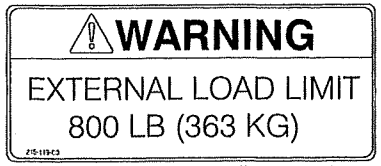
4. Check the cargo hook case for cracks and damage.
5. Check the cargo hook load beam for gouges and cracks.
6. Swing the cargo hook to its full extremes to verify that it does not reach the limit of the manual release cable and electrical release harness range of motion. The manual release cable and electrical release harness must not be the stops that prevent the cargo hook from moving freely in all directions.

KINDS OF OPERATION LIMITATIONS continued

The helicopter may also be operated with the fixed provisions portion of the kit installed only. This includes the suspension assembly, stowed manual release cable, and all Cargo Hook related equipment in the cockpit.

PLACARDS

The following placards are included with the kits.

	Mounted on the belly of the aircraft adjacent to the cargo hook attachment point in clear view of the ground support personnel.
FOR FAR PART 133.35(A) OPERATIONS: NO PERSON MAY BE CARRIED UNLESS HE IS: (1) A FLIGHT CREW MEMBER OR TRAINEE; (2) PERFORMS AN ESSENTIAL FUNCTION IN CONNECTION WITH THE EXTERNAL LOAD OPERATION; OR (3) IS NECESSARY TO ACCOMPLISH THE WORK ACTIVITY DIRECTLY ASSOCIATED WITH THAT OPERATION.	Mounted in the cockpit in view of the pilot.
CARGO RELEASE	Mounted adjacent to the manual release in clear view of the pilot.

PLACARDS continued

CARGO RELEASE	Mounted adjacent to the electrical release switch in clear view of the pilot.
CARGO RELEASE	Mounted adjacent to the co-pilot's electrical release switch (if optional co-pilot's release switch is installed).
PULL	Mounted adjacent to the manual release in clear view of the pilot.
CARGO	Mounted adjacent to the Cargo Hook circuit breaker in clear view of the pilot.
REMOTE HOOK	When the P/N 200-396-00 kit is installed, mounted adjacent to the circuit breaker in full view of the pilot and co-pilot.
REMOTE HOOK	When the P/N 200-396-00 kit is installed, mounted on the face of the remote hook release switch housing in full view of the pilot and co-pilot.

SECTION 2
LIMITATIONS

AIRSPEED LIMITS

Vne = 80 KIAS, or less with external load. Do not exceed Vne of basic helicopter (Vne determined from maximum demonstrated airspeed with dense cargo).

⚠ CAUTION

Maximum operational air speed with external loads is dependent upon the load configuration and sling length. It is the operator's responsibility to establish the maximum operational speed for each specific configuration.

WEIGHT LIMITS

The maximum Cargo Hook load is 800 lbs (363 kgs). Consult the basic Rotorcraft Flight Manual for weight limits for the rotorcraft.

CENTER OF GRAVITY LIMITS

Center of gravity limits must be checked with and without the external load to verify that the rotorcraft is within the approved center of gravity limits.

KINDS OF OPERATION LIMITATIONS

The basic Flight Manual remains applicable. With a load attached to the cargo hook, operation shall be conducted in accordance with the respective national operational requirements.

These cargo hook kits (as installed per this STC) do not meet the 14 CFR part 27 certification requirements for Human External Cargo (HEC).

NOTICE

The cargo hook equipment certification approval does not constitute operational approval; operational approval for external load operations must be granted by the local Aviation Authority.

⚠ WARNING

The suspension assembly is designed to allow the cargo hook to pivot and align with the external load in all directions with limits to protect the electrical and manual release cables from damage. Take precautions to prevent external load angles which exceed the limits of rotation provided by the suspension as the load may not be releasable in this position.

The optional remote hook electrical release kit (P/N 200-396-00) is limited for use with intermittent electrical loads only such as electrical release of a remote cargo hook.

IN-FLIGHT OPERATION continued

Approach with and release of external load continued

4. Visually check to ensure that the external load has been released.

⚠ WARNING

Verify that the external load and long line has dropped free from the rotorcraft before departing the drop-site.

IN-FLIGHT OPERATION continued

Figure 3.6 Cyclic Grip Release Switch

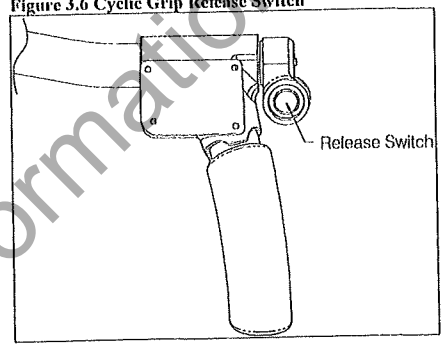


Figure 3.7 Co-Pilot's Seat Switch (optional)

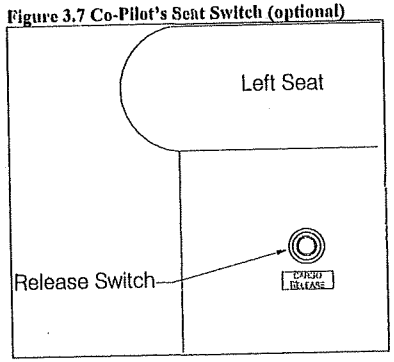


Figure 3.8 Manual Release Handle

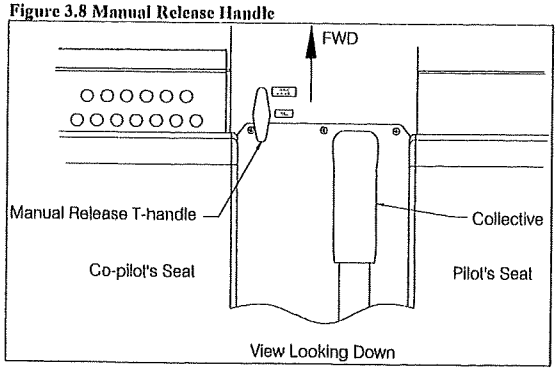
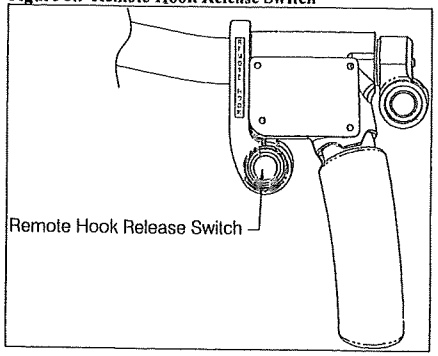


Figure 3.9 Remote Hook Release Switch



SECTION 4
EMERGENCY PROCEDURES

Cargo Fails to Release Electrically

In the event that the Cargo Hook will not release the external load electrically, proceed as follows:

1. Maintain tension on the sling.
2. Pull the manual release T-handle upwards to release the external load.

SECTION 5
PERFORMANCE

The basic Flight Manual issued by Robinson remains applicable.

There is no change from basic flight performance with no load attached to the Cargo Hook. Performance will be reduced depending on the size, weight and shape of the external load.

The Load Weigh System is designed and installed as a means of MONITORING the load (weight) suspended from the Cargo Hook. Functional and performance characteristics have not been determined on the basis of Load Cell indication or display. Therefore, this instrument shall NOT be used as a primary indication of performance and flight operation must NOT be predicated on its use.

Aircraft Run Out (Components)

Pearl Coast Heli Maintenance

Component Type	Install Date	Install Hrs	Limit	Interval	Counters	TSO	TSN	AF Off	To Run	% Rem.	Tolerance Notes
VH-NBY AF Date 03-07-2020 AF Hours - 291											
TACHOMETER Part #-C792-4 Serial # -			Life Limit	2,200	Hours, Days						
R44 Raven I Carburettor Part #-AV10-6035-11 (MA-4-5MF) Serial # - AV124732464	30/04/2018	0	OH Limit	2,000	Hours, Days	291	291	2000, 27-04-2028	1,709	85 %	
R44 24v Skytec Starter Motor Part #-149-24HT-H Serial # -H-R100035		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 28V Clutch Actuator Part #-C051-2 Serial # -8769		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 28V Plane Power Alternator Part #-RH24-70 Serial # -H-R110102		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Aux Bladder Tank Part #-D028-2 Serial # -		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Clutch Shaft Part #-C166-5 Serial # -0869	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Fanwheel Assy Part #-D174-2 Serial # -NSN	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Raven I Engine Part #-O-540-F1B5 Serial # -L-27772-40E	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Raven I Governor Part #-D278-1 Serial # -3107	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Hydraulic Pump Part #-D500-1 Serial # -6835	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 28V Hydraulic Reservoir Part #-D211-2 Serial # -6568	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32203		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32214		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32215		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Lower Bearing Part #-C181-3 Serial # -9465	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -7 M/R Blade Part #-C016-7 Serial # -9818	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -7 M/R Blade Part #-C016-7 Serial # -9863	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 M/R Gbox Part #-C006-7 Serial # -9838	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200	1,909	87 %	
R44 M/R Hub Part #-C154-1 Serial # -10510		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 M/R Spindle Part #-C158-1 Serial # -23398	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 M/R Spindle Part #-C158-1 Serial # -23396	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 R/H Magneto Part #-10-600646-201 Serial # -E17IA029	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Main Bladder Tank Part #-D028-1 Serial # -		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Oil Cooler Part #-C649-2 Serial # -4947209	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	

Aircraft Run Out (Components)

Pearl Coast Heli Maintenance

Component Type	Install Date	Install Hrs	Limit	Interval	Counters	TSO	TSN	AF Off	To Run	% Rem.	Tolerance Notes
R44 Sprag Clutch Part #-C188-3 Serial # -11844	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -6 Swashplate Assy Part #-C017-6 Serial # -4226	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200	1,909	87 %	
R44 T/R Blade Part #-C029-3 Serial # -8160	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Blade Part #-C029-3 Serial # -8162	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Gbox Part #-C021-1 Serial # -8702	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Gbox Gearset Part #-C545-2 Serial # -11002		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Guard Part #-D079-1 Serial # -11137		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Hub Part #-G062-2 Serial # -5025		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Pitch Control Assy Part #-C031-1 Serial # -10873	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Upper Frame Part #-C020-1 Serial # -9317	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Raven I L/H Magneto Part #-10-600616-3 Serial # -E17EA097	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Horizontal Stabiliser Part #-C044-1 Serial # -9423		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	
R44 T/R Driveshaft Part #-D196-1 Serial # -8521		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	
R44 Tailcone Part #-C023-1 Serial # -10109		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	

Aircraft Run Out (Components)

Pearl Coast Heli Maintenance

Component Type	Install Date	Install Hrs	Limit	Interval	Counters	TSO	TSN	AF Off	To Run	% Rem.	Tolerance Notes
VH-NBY AF Date 03-07-2020 AF Hours - 291											
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R44 Raven I Carburettor Part #-AV10-6035-11 (MA-4-5MF) Serial # - AV124732464	30/04/2018	0	OH Limit	2,000	Hours, Days	291	291	2000, 27-04-2028	1,709	85 %	
R44 24v Skytec Starter Motor Part #-149-24HT-H Serial # -H-R100035		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 28V Clutch Actuator Part #-C051-2 Serial # -8769		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 28V Plane Power Alternator Part #-RH24-70 Serial # -H-R110102		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Aux Bladder Tank Part #-D028-2 Serial # -		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Clutch Shaft Part #-C166-5 Serial # -0869	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Fanwheel Assy Part #-D174-2 Serial # -NSN	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Raven I Engine Part #-O-540-F1B5 Serial # -L-27772-40E	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Raven I Governor Part #-D278-1 Serial # -3107	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Hydraulic Pump Part #-D500-1 Serial # -6835	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 28V Hydraulic Reservoir Part #-D211-2 Serial # -6568	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32203		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32214		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Hydraulic Servo Part #-D212-1 Serial # -32215		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 Lower Bearing Part #-C181-3 Serial # -9465	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -7 M/R Blade Part #-C016-7 Serial # -9818	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -7 M/R Blade Part #-C016-7 Serial # -9863	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 M/R Gbox Part #-C006-7 Serial # -9838	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200	1,909	87 %	
R44 M/R Hub Part #-C154-1 Serial # -10510		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 M/R Spindle Part #-C158-1 Serial # -23398	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 M/R Spindle Part #-C158-1 Serial # -23396	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 R/H Magneto Part #-10-600646-201 Serial # -E17IA029	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Main Bladder Tank Part #-D028-1 Serial # -		0	OH Limit	2,200	Hours	291	291	2200	1,909	87 %	
R44 Oil Cooler Part #-C649-2 Serial # -4947209	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	

Aircraft Run Out (Components)

Pearl Coast Heli Maintenance

Component Type	Install Date	Install Hrs	Limit	Interval	Counters	TSO	TSN	AF Off	To Run	% Rem.	Tolerance Notes
R44 Sprag Clutch Part #-C188-3 Serial # -11844	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 -6 Swashplate Assy Part #-C017-6 Serial # -4226	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200	1,909	87 %	
R44 T/R Blade Part #-C029-3 Serial # -8160	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Blade Part #-C029-3 Serial # -8162	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Gbox Part #-C021-1 Serial # -8702	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 T/R Gbox Gearset Part #-C545-2 Serial # -11002		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Guard Part #-D079-1 Serial # -11137		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Hub Part #-G062-2 Serial # -5025		0	Life Limit	2,200	Hours		291	2200	1,909	87 %	
R44 T/R Pitch Control Assy Part #-C031-1 Serial # -10873	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Upper Frame Part #-C020-1 Serial # -9317	19/07/2018	0	Life Limit	2,200	Hours, Days		291	2200, 16-07-2030	1,909	87 %	
R44 Raven I L/H Magneto Part #-10-600616-3 Serial # -E17EA097	30/04/2018	0	OH Limit	2,200	Hours, Days	291	291	2200, 27-04-2030	1,909	87 %	
R44 Horizontal Stabiliser Part #-C044-1 Serial # -9423		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	
R44 T/R Driveshaft Part #-D196-1 Serial # -8521		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	
R44 Tailcone Part #-C023-1 Serial # -10109		0	Life Limit	4,400	Hours		291	4400	4,109	93 %	

Date	TSN	TSO
11/09/18	4	
HeliBiz J/No		H5015.

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 Raven I AF Serial #: 2544 **Job No:** H5015 NBY

AF TTIS: 4.00 AF Cycles: AF Landings: **Maintenance Release No:** A210444

Component Serial #: L-27772-40E TSN: 4 TSO: 4 **Expired M/Release No:** N/A

Reassemble / CofA - Engine

VH-NBY 11/09/2018

- Engine Date of Manufacture: 29 January 2018.
- Textron Lycoming Engine O-540-F1B5, S/N: L-27772-40E received on U.S.A Export Certificate of Airworthiness # E472473.
- Installed into RHC R44 RAVEN I, S/No. 2544 (VH-NBY) by R.H.C. AT Aircraft Manufacture – Installation 30 April 2018.
- All Applicable FAA Bi-weekly A/D's and Lycoming Service Bulletins Complied with at Manufacture by Lycoming.
- FAA Bi-weekly Airworthiness Directive's up to 2018-14 complied with by R.H.C. During Production.
- FAA Bi-weekly Airworthiness Directive's to 2018-18 Checked – Nil Applicable.

Following Maintenance Carried Out:

- 100 Hr. Engine Inspection Carried out IAW R.H.C. Maintenance Manual Table 1 and Lycoming Operators Manual Sect. 4 for the Initial Issue of an Australian Certificate of Airworthiness.
- Lycoming Service Bulletins and Service Instructions Carried out SB 480E, SI 1080C, SI 1129B – Nil Defects Evident.
- TCM Service Bulletin 643B Carried Out – Nil Defects Evident.
- Newly Issued Lycoming Service Bulletins 411D, 530B-S1, 593B, 612, 613, 614A, 615, 617, 619, 608-S1, 621B, 622, 623, 625, 627C, 632B, Checked for Compliance and all Found to be Not Applicable.
- Engine De-preserved IAW Lycoming Service Instruction 1472.
- Satisfactorily Carried Out Ground Run and Leak Check IAW R44 Maintenance Manual Section 1.700 & 2.200.

The following airworthiness directives and special inspections carried out:

Task	Code	Description	Action Taken
0000	Inspection	AIRFRAME - Reassembling and Flight Testing R44 Series Helicopters After Crating For Export IAW R44 Maintenance Manual Section 1.700	Complied With - Nil Defect Evident
0110	Inspection	ENGINE - 100 Hr Engine Inspection IAW Lycoming Operator's Manual Section 4	Complied With - Nil Defect Evident
0113	TCM SB 643C Part 1	100 Hour Maintenance Intervals For All TCM & Bendix A/C Magnetos & Related Equipment (Includes TCM SB 636/653)	Complied With - Nil Defect Evident
0114	Lycoming SI 1080C	100 Hour Maintenance Items for Special Attention	Complied With - Nil Defect Evident
0115	Lycoming SI 1129D	100 Hour Alternator/Generator Belt Tension	Complied With - Nil Defect Evident

HELIBIZ
COA# C582366

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
AEROSHELL OIL 100	Straight Oil (300012254)	AB2249		9

For and on behalf of Helibiz C of A Number C582366

Co-ordinator's Name: [redacted] s 22 **Signature:** [redacted] s 22 ..... **Licence:** 222950 **Date:** 11/09/2018

ENGINE MAINTENANCE CERTIFICATION LOG 1

Date	TSN	TSO	Cycles	Maintenance Details and Certifications
13/5/19	88.62			**This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry**

VH-NBY Model: R44 AF Serial #: 2544 **Job No:** 255

AF TTIS: 88.62 AF Cycles: AF Landings: **Maintenance Release No:** A158251

Component Serial #: L-27772-40E TSN: 88.62 TSO: **Expired M/Release No:** A210444

100Hrly Inspection/300Hrly Valve Inspection/M/R Tack & Balance

100Hrly Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

017 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 018 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 019 (300HRLY) 300 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 020 (LYC S/B 480F) 4Monthly Oil & Filter Change C/O NDF , 021 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 022 (100HRLY/12MONTHS) Airbox Clean/Inspect C/O NDF , 023 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 024 (100HRLY/12MONTHS) Alternator Inspection, Belt Inspect/Adjust/Replace C/O NDF , 025 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 026 (100HRLY/12MONTHS) Carburettor Inspection C/O NDF , 027 (LYC SI 1191A) Cylinder Compression Check C/O #1 74/80 #2 75/80 #3 76/80 #4 76/80 #5 78/80 #6 78/80 Within Limits NDF , 028 (100HRLY/12MONTHS) Engine Compression Check C/O NDF , 029 (LYC S/B 388C) Exhaust Valve & Guide Inspection C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 030 (TCM S/B 653) Hot Magneto Test C/O NDF , 031 (LYC S/B 388C) Initial Exhaust Valve & Guide Inspection C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 032 (TCM S/B 670) Magneto Distributor Block Inspection C/O NDF , 033 (LYC S/B 301B) Maintence Procedures & Service Limitations For Valves C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 034 (LYC S/B 480F) Oil Filter Change & Inspection C/O NDF , 035 (100HRLY/12MONTHS) Spark Plug Clean/Gap/Test C/O NDF , 036 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 037 (100HRLY/12MONTHS) Starter Motor/Starter Ring Gear Inspection C/O NDF , 038 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF

The following relevant parts were used:

CH48108-1 Oil Filter (QTY- 2, GRN-PC417) , AERO XPD120 OIL (QTY- 12, GRN-PC437)

Cylinder compression test/80 PSI:

Cyl 1:74 Cyl 2:75 Cyl 3:76 Cyl 4:76 Cyl 5:76 Cyl 6:78

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C of A Number 0686

Co-ordinator's Name: [redacted] s22 **Signature:** [redacted] s22 **Licence:** 594407 **Date:** 13/05/2019

Pearl Coast Heli Maintenance PTY LTD Cert Of Approval No: 0686

Date	TSN	TSO	Cycles	Maintenance Details and Certifications
20/7/19	186.41			

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 AF Serial #: 2544

AF TTIS: 186.41 AF Cycles: AF Landings:

Component Serial #: L-27772-40E TSN: 186.41 TSO:

Job No: 299

Maintenance Release No: A222867

Expired M/Release No: A158251

100Hrly Inspection

100Hrly Engine Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

016 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 017 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 018 (LYC S/B 480F) 4Monthly Oil & Filter Change Entered M/R , 019 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 020 (100HRLY/12MONTHS) Airbox Clean/Inspect C/O NDF , 021 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 022 (100HRLY/12MONTHS) Alternator Inspection, Belt Inspect/Adjust/Replace C/O NDF , 023 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 024 (100HRLY/12MONTHS) Carburettor Inspection C/O NDF , 025 (LYC SI 1191A) Cylinder Compression Check C/O #1 78/80 #2 75/80 #3 77/80 #4 78/80 #5 76/80 #6 77/80 Within Limits NDF , 026 (100HRLY/12MONTHS) Engine Compression Check C/O NDF , 027 (TCM S/B 653) Hot Magneto Test C/O NDF , 028 (TCM S/B 670) Magneto Distributor Block Inspection C/O NDF , 029 (LYC S/B 480F) Oil Filter Change & Inspection C/O NDF , 030 (100HRLY/12MONTHS) Spark Plug Clean/Gap/Test C/O NDF , 031 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 032 (100HRLY/12MONTHS) Starter Motor/Starter Ring Gear Inspection C/O NDF , 033 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF

The following relevant parts were used:

CH48108-1 Oil Filter (QTY- 2, GRN-PC484) , AERO XPD120 OIL (QTY- 12, GRN-PC437)

Cylinder compression test/80 PSI:

Cyl 1:78 Cyl 2:75 Cyl 3:77 Cyl 4:78 Cyl 5:76 Cyl 6:77

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C of A Number 0686

Co-ordinator's Name: [redacted] s 22 **Signature** [redacted] s 22 **Licence:** 594407 **Date:** 20/07/2019

For Pearl Coast Heli Maintenance PTY LTD
Cert.Of Approval No: 0686

Date	TSN	TSO	Cycles	Maintenance Details and Certifications
29/7/19	195.03			

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 AF Serial #: 2544 **Job No:** 304

AF TTIS: 195.03 AF Cycles: AF Landings: **Maintenance Release No:**

Expired M/Release No:

Onboard Systems Hook Install

C/O Install Of Onboard Systems 28v Hook Kit

The following maintenance tasks carried out:

Task	Code	Description	Action Taken
001	ADDITIONAL WORK	Install Onbord Cargo Hook System IAW Onboard Systems STC # SR01808SE	C/O Installed 1 x New 28v Onboard Systems Cargo Hook System P/N 200-327-00 B/N PC508 NDF

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
200-327-00	R44 28Volt Cargo Hook Ki	PC508		1
B263-1	Pin Crimp	PC357		10
B263-12	2 Pin Housing	PC357		2
B263-13	2 Pin Housing	PC357		2
B263-14	3 Pin Housing	PC357		1
B263-15	3 Pin Housing	PC357		1
B263-2	Socket Crimp	PC357		10
MS21919WDG2	P-Clamp	PC329		1
MS27039C0808	Screw	PC383		1

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C of A Number 0686

Co-ordinator's Name: [redacted] **Signature:** [redacted] **Licence:** 594407 **Date:** 29/07/2019

Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No. 0686

Date	TSN	TSO	Cycles
9/10/19	248.8		
4/6/20	286.9		

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 Raven I AF Serial #: 2544

AF TTIS: 248.80 AF Cycles: AF Landings:

Component Serial #: L-27772-40E TSN: 248.8 TSO:

Job No: 321

Maintenance Release No: A222878

Expired M/Release No: A222867

Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686

100Hrly/ Annual Inspection

100Hrly Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

011 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 012 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 013 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 014 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 015 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 016 (LYC SI 1191A) Cylinder Compression Check C/O Within Limits NDF , 017 (TCM S/B 653) Hot Magneto Test C/O NDF , 018 (TCM S/B 670) Magneto Distributor Block Inspection C/O NDF , 019 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 020 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF , 021 (LYC S/B 480F) Oil Filter Change & Inspection Entered MR , 022 (LYC S/B 480F) 4Monthly Oil & Filter Change Entered MR , 023 (ADDITIONAL WORK) CHT Probe Found U/S Renewed CHT Probr PN:3080-38 GRN:PC457 NDF

Cylinder compression test/80 PSI:

Cyl 1:77 Cyl 2:72 Cyl 3:76 Cyl 4:77 Cyl 5:75 Cyl 6:77

For and on behalf of Pearl Coast Heli Maintenance Pty L [redacted] s 22

Co-ordinator's Name: [redacted] s 22 **Signature** [redacted] s 22 ..... **Licence:** 760877 **Date:** 09/10/2019

[redacted] s 22

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 RAVEN I AF Serial #: 2544

AF TTIS: 286.90 AF Cycles: AF Landings:

Component Serial #: L-27772-40E TSN: 286.9 TSO:

Job No: 357

Maintenance Release No: A158254

Expired M/Release No: A222878

Pearl Coast Heli Ma [redacted] s 22

100Hrly/Annual Inspection

100Hrly Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

006 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 007 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 008 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 009 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 010 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 011 (LYC SI 1191A) Cylinder Compression Check C/O NDF , 012 (TCM S/B 653) Hot Magneto Test C/O NDF , 014 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 015 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF , 016 (LYC S/B 480F) 4Monthly Oil & Filter Change C/O NDF , 017 (LYC S/B 480F) Oil Filter Change & Inspection C/O NDF , 018 (Additional Work) #2 Cylinder Low Compression Renewed #2 PN:05K21745 GRN:PC580 ARC:MS-522807 NDF

For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 068[illegible]

Cylinder compression test/80 PSI:

Cyl 1:74 Cyl 2: Cyl 3:76 Cyl 4:76 Cyl 5:76 Cyl 6:75

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd [redacted] s 22

Co-ordinator's Name: [redacted] s 22 **Signature:** [redacted] s 22 ..... **Licence:** 760877 **Date:** 04/06/2020

Date	TSN	TSO
11/09/18	4	
HeliBiz J/No		H5015.

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 Raven I AF Serial #: 2544

AF TTIS: 4.00 AF Cycles: AF Landings:

Component Serial #: L-27772-40E TSN: 4 TSO: 4

Job No: H5015 NBY

Maintenance Release No: A210444

Expired M/Release No: N/A

Reassemble / CofA - Engine

VH-NBY 11/09/2018

- Engine Date of Manufacture: 29 January 2018.
- Textron Lycoming Engine O-540-F1B5, S/N: L-27772-40E received on U.S.A Export Certificate of Airworthiness # E472473.
- Installed into RHC R44 RAVEN I, S/No. 2544 (VH-NBY) by R.H.C. AT Aircraft Manufacture – Installation 30 April 2018.
- All Applicable FAA Bi-weekly A/D's and Lycoming Service Bulletins Complied with at Manufacture by Lycoming.
- FAA Bi-weekly Airworthiness Directive's up to 2018-14 complied with by R.H.C. During Production.
- FAA Bi-weekly Airworthiness Directive's to 2018-18 Checked – Nil Applicable.

Following Maintenance Carried Out:

- 100 Hr. Engine Inspection Carried out IAW R.H.C. Maintenance Manual Table 1 and Lycoming Operators Manual Sect. 4 for the Initial Issue of an Australian Certificate of Airworthiness.
- Lycoming Service Bulletins and Service Instructions Carried out SB 480E, SI 1080C, SI 1129B – Nil Defects Evident.
- TCM Service Bulletin 643B Carried Out – Nil Defects Evident.
- Newly Issued Lycoming Service Bulletins 411D, 530B-S1, 593B, 612, 613, 614A, 615, 617, 619, 608-S1, 621B, 622, 623, 625, 627C, 632B, Checked for Compliance and all Found to be Not Applicable.
- Engine De-preserved IAW Lycoming Service Instruction 1472.
- Satisfactorily Carried Out Ground Run and Leak Check IAW R44 Maintenance Manual Section 1.700 & 2.200.

The following airworthiness directives and special inspections carried out:

Task	Code	Description	Action Taken
0000	Inspection	AIRFRAME - Reassembling and Flight Testing R44 Series Helicopters After Crating For Export IAW R44 Maintenance Manual Section 1.700	Complied With - Nil Defect Evident
0110	Inspection	ENGINE - 100 Hr Engine Inspection IAW Lycoming Operator's Manual Section 4	Complied With - Nil Defect Evident
0113	TCM SB 643C Part 1	100 Hour Maintenance Intervals For All TCM & Bendix A/C Magnetos & Related Equipment (Includes TCM SB 636/653)	Complied With - Nil Defect Evident
0114	Lycoming SI 1080C	100 Hour Maintenance Items for Special Attention	Complied With - Nil Defect Evident
0115	Lycoming SI 1129D	100 Hour Alternator/Generator Belt Tension	Complied With - Nil Defect Evident

HELIBIZ
COA# C582366

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
AEROSHELL OIL 100	Straight Oil (300012254)	AB2249		9

For and on behalf of Helibiz C of A Number C582366

Co-ordinator's Name: [redacted] s22 **Signature:** [redacted] s22 **Licence:** 222950 **Date:** 11/09/2018

ENGINE MAINTENANCE CERTIFICATION LOG 1

Date	TSN	TSO	Cycles	Maintenance Details and Certifications
13/5/19	88.62			**This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry**

VH-NBY Model: R44 AF Serial #: 2544 **Job No:** 255

AF TTIS: 88.62 AF Cycles: AF Landings: **Maintenance Release No:** A158251

Component Serial #: L-27772-40E TSN: 88.62 TSO: **Expired M/Release No:** A210444

100Hrly Inspection/300Hrly Valve Inspection/M/R Tack & Balance

100Hrly Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

017 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 018 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 019 (300HRLY) 300 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 020 (LYC S/B 480F) 4Monthly Oil & Filter Change C/O NDF , 021 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 022 (100HRLY/12MONTHS) Airbox Clean/Inspect C/O NDF , 023 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 024 (100HRLY/12MONTHS) Alternator Inspection, Belt Inspect/Adjust/Replace C/O NDF , 025 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 026 (100HRLY/12MONTHS) Carburettor Inspection C/O NDF , 027 (LYC SI 1191A) Cylinder Compression Check C/O #1 74/80 #2 75/80 #3 76/80 #4 76/80 #5 78/80 #6 78/80 Within Limits NDF , 028 (100HRLY/12MONTHS) Engine Compression Check C/O NDF , 029 (LYC S/B 388C) Exhaust Valve & Guide Inspection C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 030 (TCM S/B 653) Hot Magneto Test C/O NDF , 031 (LYC S/B 388C) Initial Exhaust Valve & Guide Inspection C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 032 (TCM S/B 670) Magneto Distributor Block Inspection C/O NDF , 033 (LYC S/B 301B) Maintence Procedures & Service Limitations For Valves C/O Within Limits NDF
#1 0.021" #2 0.019" #3 0.020" #4 0.019" #5 0.020" #6 0.018" , 034 (LYC S/B 480F) Oil Filter Change & Inspection C/O NDF , 035 (100HRLY/12MONTHS) Spark Plug Clean/Gap/Test C/O NDF , 036 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 037 (100HRLY/12MONTHS) Starter Motor/Starter Ring Gear Inspection C/O NDF , 038 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF

The following relevant parts were used:

CH48108-1 Oil Filter (QTY- 2, GRN-PC417) , AERO XPD120 OIL (QTY- 12, GRN-PC437)

Cylinder compression test/80 PSI:

Cyl 1:74 Cyl 2:75 Cyl 3:76 Cyl 4:76 Cyl 5:76 Cyl 6:78

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C of A Number 0686

Co-ordinator's Name: [redacted] s 22 **Signature:** [redacted] s 22 **Licence:** 594407 **Date:** 13/05/2019

Pearl Coast Heli Maintenance PTY LTD Cert Of Approval No: 0686

Date	TSN	TSO	Cycles	Maintenance Details and Certifications
20/7/19	186.41			

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 AF Serial #: 2544

AF TTIS: 186.41 AF Cycles: AF Landings:

Component Serial #: L-27772-40E TSN: 186.41 TSO:

Job No: 299

Maintenance Release No: A222867

Expired M/Release No: A158251

100Hrly Inspection

100Hrly Engine Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

016 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 017 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 018 (LYC S/B 480F) 4Monthly Oil & Filter Change Entered M/R , 019 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 020 (100HRLY/12MONTHS) Airbox Clean/Inspect C/O NDF , 021 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 022 (100HRLY/12MONTHS) Alternator Inspection, Belt Inspect/Adjust/Replace C/O NDF , 023 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 024 (100HRLY/12MONTHS) Carburettor Inspection C/O NDF , 025 (LYC SI 1191A) Cylinder Compression Check C/O #1 78/80 #2 75/80 #3 77/80 #4 78/80 #5 76/80 #6 77/80 Within Limits NDF , 026 (100HRLY/12MONTHS) Engine Compression Check C/O NDF , 027 (TCM S/B 653) Hot Magneto Test C/O NDF , 028 (TCM S/B 670) Magneto Distributor Block Inspection C/O NDF , 029 (LYC S/B 480F) Oil Filter Change & Inspection C/O NDF , 030 (100HRLY/12MONTHS) Spark Plug Clean/Gap/Test C/O NDF , 031 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 032 (100HRLY/12MONTHS) Starter Motor/Starter Ring Gear Inspection C/O NDF , 033 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF

The following relevant parts were used:

CH48108-1 Oil Filter (QTY- 2, GRN-PC484) , AERO XPD120 OIL (QTY- 12, GRN-PC437)

Cylinder compression test/80 PSI:

Cyl 1:78 Cyl 2:75 Cyl 3:77 Cyl 4:78 Cyl 5:76 Cyl 6:77

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C of A Number 0686

Co-ordinator's Name: [redacted] s22 **Signature** [redacted] s22 **Licence: 594407** **Date:** 20/07/2019

For Pearl Coast Heli Maintenance PTY LTD
Cert.Of Approval No: 0686

Date	TSN	TSO	Cycles	Maintenance Details and Certifications
29/7/19	195.03			

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 AF Serial #: 2544 **Job No:** 304

AF TTIS: 195.03 AF Cycles: AF Landings: **Maintenance Release No:**

Expired M/Release No:

Onboard Systems Hook Install

C/O Install Of Onboard Systems 28v Hook Kit

The following maintenance tasks carried out:

Task	Code	Description	Action Taken
001	ADDITIONAL WORK	Install Onbord Cargo Hook System IAW Onboard Systems STC # SR01808SE	C/O Installed 1 x New 28v Onboard Systems Cargo Hook System P/N 200-327-00 B/N PC508 NDF

The following relevant parts were used:

Part #	Description	GRN	Task	Quantity
200-327-00	R44 28Volt Cargo Hook Ki	PC508		1
B263-1	Pin Crimp	PC357		10
B263-12	2 Pin Housing	PC357		2
B263-13	2 Pin Housing	PC357		2
B263-14	3 Pin Housing	PC357		1
B263-15	3 Pin Housing	PC357		1
B263-2	Socket Crimp	PC357		10
MS21919WDG2	P-Clamp	PC329		1
MS27039C0808	Screw	PC383		1

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd C of A Number 0686

Co-ordinator's Name: [redacted] s22 **Signature:** [redacted] s22 **Licence:** 594407 **Date:** 29/07/2019

Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No. 0686

Date	TSN	TSO	Cycles
9/10/19	248.8		
4/6/20	286.9		

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 Raven I AF Serial #: 2544

AF TTIS: 248.80 AF Cycles: AF Landings:

Component Serial #: L-27772-40E TSN: 248.8 TSO:

Job No: 321

Maintenance Release No: A222878

Expired M/Release No: A222867

Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686

100Hrly/ Annual Inspection

100Hrly Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

011 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 012 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 013 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 014 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 015 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 016 (LYC SI 1191A) Cylinder Compression Check C/O Within Limits NDF , 017 (TCM S/B 653) Hot Magneto Test C/O NDF , 018 (TCM S/B 670) Magneto Distributor Block Inspection C/O NDF , 019 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 020 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF , 021 (LYC S/B 480F) Oil Filter Change & Inspection Entered MR , 022 (LYC S/B 480F) 4Monthly Oil & Filter Change Entered MR , 023 (ADDITIONAL WORK) CHT Probe Found U/S Renewed CHT Probr PN:3080-38 GRN:PC457 NDF

Cylinder compression test/80 PSI:

Cyl 1:77 Cyl 2:72 Cyl 3:76 Cyl 4:77 Cyl 5:75 Cyl 6:77

For and on behalf of Pearl Coast Heli Maintenance Pty L [redacted] s 22

Co-ordinator's Name: [redacted] s 22 **Signature** [redacted] s 22 ..... **Licence:** 760877 **Date:** 09/10/2019

[redacted] s 22

This Constitutes a Final Certification in Accordance with CAR42ZE as a Loose Leaf Log Book Entry

VH-NBY Model: R44 RAVEN I AF Serial #: 2544

AF TTIS: 286.90 AF Cycles: AF Landings:

Component Serial #: L-27772-40E TSN: 286.9 TSO:

Job No: 357

Maintenance Release No: A158254

Expired M/Release No: A222878

Pearl Coast Heli Maintenance

[redacted] s 22

100Hrly/Annual Inspection

100Hrly Inspection C/O IAW Aircraft Logbook Statement, Lycoming O-540 Operators Manual & RHC R44 RTR 460 Maintenance Manual Latest Revisions

The following maintenance tasks carried out:

006 (50HRLY) 50 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 007 (100HRLY) 100 Hrly Maintenance & Inspection IAW Lycoming Operators Manual C/O NDF , 008 (TCM S/B 643C) 100Hrly Magneto Inspection C/O NDF , 009 (LYC SI 1129B) Alternator Belt Tension Check C/O NDF , 010 (LYC S/B 366C) Carb Throttle Body Screw Inspection C/O NDF , 011 (LYC SI 1191A) Cylinder Compression Check C/O NDF , 012 (TCM S/B 653) Hot Magneto Test C/O NDF , 014 (LYC SI 1080C) Special Attention Maintenance Items C/O NDF , 015 (LYC S/B 595) Torque Values Ignition Harness Attach Screws C/O NDF , 016 (LYC S/B 480F) 4Monthly Oil & Filter Change C/O NDF , 017 (LYC S/B 480F) Oil Filter Change & Inspection C/O NDF , 018 (Additional Work) #2 Cylinder Low Compression Renewed #2 PN:05K21745 GRN:PC580 ARC:MS-522807 NDF

For Pearl Coast Heli Maintenance PTY LTD Cert.Of Approval No: 0686

Cylinder compression test/80 PSI:

Cyl 1:74 Cyl 2: Cyl 3:76 Cyl 4:76 Cyl 5:76 Cyl 6:75

For and on behalf of Pearl Coast Heli Maintenance Pty Ltd [redacted] s 22

Co-ordinator's Name: [redacted] s 22 **Signature:** [redacted] ..... **Licence:** 760877 **Date:** 04/06/2020