



Australian Government
Civil Aviation Safety Authority

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Annex 22 to CASA Surveillance Manual - Part 131 Balloons and Hot Air Airships

August 2024

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Acknowledgement of Country

The Civil Aviation Safety Authority (CASA) respectfully acknowledges the Traditional Custodians of the lands on which our offices are located and their continuing connection to land, water and community, and pays respect to Elders past, present and emerging.

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Introduction

This annex is an integral part of the CASA Surveillance Manual (CSM), which should be referenced at all times. To allow for more frequent revisions, this annex can be updated independent of the CSM and other annexes. The process of updating this annex requires verification and approval from its owners and sponsors.

Revision history

Revisions to this annex are recorded below in order of most recent first.

Table 1. Revision history

Version number	Date	Parts and sections	Details
1.0	August 2024		Initial issue

1 Overview

This annex provides instructions for conducting surveillance of Air Operator's Certificates (AOC), issued under Section 27 of the Act, as well as an approval issued under CASR Part 131 Balloon and hot air airships. The annex contains information relating to the following:

- Surveillance intervals
- Set scope surveillance.
- Systems and elements
- Surveillance currency guide
- Information sources.

2 Surveillance intervals

Table 2. Surveillance intervals by Group

Group	Certificate/ Part	Activities (in priority order)	Period (Y)	No. of events	Cycle (M)	Scope coverage
FO-G	Part 131	N/A	5	1	30	All

3 Set scope surveillance

The National Oversight Plan (NOP) sets a clear scope for surveillance of authorisation holders, ensuring that all relevant areas of oversight are systematically covered during the surveillance cycle with a system and risk-based approach. This approach facilitates a comprehensive understanding of an authorisation holder's activities, infrastructure, and safety practices.

The initial selection of the set scope for operational parts is informed by feedback received from Operational Implementation Branch (OIB) regarding items identified during the regulatory transition assessment period, and by the activity reported occurrences / issues managed by monitoring and response surveillance. Additionally, considerations should be given to other key matters which have been subject to significant regulatory change, such as management of change and aerial work passenger carriage, ensuring their inclusion in the relevant part of the audits.

The set scope for each operational part is set prior to generating a list of authorisation holders for the next financial year surveillance schedule.

In future years, the set scope will be determined by considering the previous scope covered, and the number of non-compliances identified in each area (this in some circumstances may be a determination to continue with or only minimally change the set scope from the previous FY).

Of note is that it is intended to complete 100% of a parts / authorisation holders scope prior to returning to an initial scoping consideration however data may drive revalidation of certain items due to notable non-compliant trending. By taking this approach, CASA will ensure that a more complete oversight picture across all legislative parts will be undertaken over a multi-year period.

4 Systems and elements: Part 131

Balloons and hot air airships

Table 3. Systems and Elements

Systems	Elements
Operational personnel	Crew scheduling
	Operational standards
	Fatigue management (Flight Crew) - CAO 48.1 Appendix 4A
	Fatigue Risk Management System (FRMS) - CAO 48.1 Appendix 7
Balloons and hot air airships	Maintenance system
	Airworthiness control
	Line servicing
	Airworthiness assurance
Balloon maintenance	System of Maintenance (SOM)
	Base Maintenance
	Line maintenance
	Continuing airworthiness management
Operations	Authorised activities
	Operational support systems
	Flight system
	Operating areas
	Fuel requirements
	Management
	Authorised personnel – Personnel standards
	Data and documentation

Systems	Elements
Cargo and passengers	Passenger control
	Non DG / Baggage system
	DG cargo control
	Fuel load control
	Balloon load control
Training	Training management
	Training infrastructure
	Qualifications and authorisations (instructor, examiner and support staff)
	Assessments
Safety management (If any)	Safety policy and objectives
	Safety risk management
	Safety assurance

Table 4. Operational personnel elements

System: Operational personnel	
Element: Crew scheduling	
Crew scheduling plays a significant role in achieving safe operations for it is through crew scheduling that the authorisation holder ensures that flight and ground support crew have appropriate qualifications, certification, operate in accordance with legislative requirements and have appropriate recency (as applicable) in order to safely conduct the planned task from the start of the duty period until completion.	
Prompts:	
Roster production (includes ground support crew)	Maintenance authorities and other airworthiness authorisations
Crew records (includes ground support crew)	Qualifications, certifications, currency (are they trained for the role)
Flight authorisation	DAMP education and testing
Element: Operational standards	
Operational standards are a vital element of the system required to maintain safe operations through the establishment of an appropriate set of systems (includes an appropriate organisational structure) to accommodate induction, check to line, upgrade training (where applicable) and a system for dealing with unacceptable performance.	
Prompts:	
CEO	Head of Flight Operations (HOFO) (however named)
Flight instructors	Line pilots including casual / subcontracted pilots
Head of Aircraft Airworthiness and Maintenance Control (HAAMC) (however named)	Approved Testing Officer (ATO) delegates / Flight examiners
Operational support and administration staff	Ground support personnel
Element: Fatigue management (Flight Crew) - CAO 48.1 Appendix 4A	
The Fatigue management element is designed to audit compliance with CAO 48.1 Appendix 4A. Safe operations rely on proactive management of fatigue risks and hazards.	
Prompts:	
Roster production	Fatigue management
Records and reports	Fatigue training
Fatigue hazard and identification and mitigation processes	FCM fatigue monitoring
Sleep opportunity assurance	Sustenance

System: Operational personnel continued

Element: Fatigue Risk Management System (FRMS) - CAO 48.1 Appendix 7

An FRMS approval allows an operator to establish bespoke fatigue limits in excess of those allowable under another appendix to CAO 48.1. fatigue hazard identification, mitigation, monitoring, assurance and promotion procedures all form the basis of an effective risk management system for safe operations.

Prompts:

Change management procedures	Practical operating procedures
FCM fatigue monitoring	Fatigue Training
Data acquisition and analysis	Safety Assurance procedures
Use of Biomathematical Model	Safety promotion procedures
Records and Reports	Sustenance
Hazard identification, risk assessment and mitigation procedures	

Table 5. Balloons and hot air airships elements

System: Balloons and hot air airships	
Element: Maintenance system	
This element contains the systems and processes for identifying “what” maintenance activities are required to be done as well as “when” the maintenance activities are to be completed.	
Prompts:	
Manufacturer's recommendations	Safety equipment
Balloon age (Aging Balloons)	Major repairs and alterations
Balloon modifications	Balloon configuration and listing
System of Maintenance (SOM)	Defect information
Service Defect Reports (SDR)	
Element: Airworthiness control	
This element contains the systems and processes for achieving the “how” maintenance activities are conducted and “who” completes the maintenance activities.	
Prompts:	
System of certification	Contractual arrangements
Data	Parts and stores
Maintenance providers	Operational equipment
Balloon maintenance documentation	Balloon cross hire
Time in service details	CASA approval
Defect information	Authorised maintenance support equipment
Airworthiness directions	
Element: Line servicing	
This element contains the systems and processes for ensuring the appropriate activities are conducted to ensure the balloon is serviced for flight.	
Prompts:	
Maintenance	Configuration control
Pilot maintenance	Authorised maintenance support equipment
Fuelling	Cleaning

System: Balloons and hot air airships continued

Element: Airworthiness assurance

This element contains the systems and processes for ensuring the balloon is airworthy and fit for service. This is accomplished primarily through the authorisation holder's internal audit processes and closes the loop on the entire maintenance system.

Prompts:

Audit	Maintenance
Balloon	Locations
Balloon documentation	

Table 6. Balloon maintenance elements

System: Balloon maintenance	
Element: System of Maintenance (SOM)	
This element contains the systems and processes for identifying “what” maintenance activities are required to be done as well as “when” the maintenance activities are to be completed.	
Prompts:	
Manufacturer's recommendations	Safety equipment
Balloon age (Aging balloon)	Major repairs and alterations
Balloon modifications	Balloon configuration and listing
Element: Base Maintenance	
This element contains the systems and processes for achieving the “how” maintenance activities are controlled and “who” completes the maintenance activities, including interaction between the AOC and the AMO.	
Prompts:	
Maintenance providers	Contractual arrangements
Permitted base maintenance activities	Authorised personnel
Parts and stores	Operational equipment
Balloon maintenance documentation	Certificate of release to service
Defect control	
Element: Line maintenance	
This element contains the systems and processes for ensuring the appropriate activities are conducted to ensure the balloon is serviced for flight.	
Prompts:	
Permitted Line Maintenance Activities	Configuration control
Cleaning	Authorised maintenance support equipment
Pilot maintenance	Engine running

System: Balloon maintenance continued

Element: Continuing airworthiness management

This element contains the activity related to airworthiness effectiveness.

Prompts:

Airworthiness directives	Dealing with ICA (includes updating SOM)
Instructions for Continuing Airworthiness (ICA)	Authorised maintenance support equipment - computer tracking system
SOM effectiveness review	Continuing airworthiness records
Service Defect Reports (SDR)	Repair or modification control
Flight technical log (if used)	Exposition process review

Table 7. Operations elements

System: Operations	
Element: Authorised activities (review against Operation Personnel system)	
<p>The AOC operations element addresses the systems that ensure the authorisation holder contains its operations to those authorised by legislation. This is primarily achieved through the use of a properly structured organisation with appropriate communication channels. Appropriate key personnel is a key link in ensuring AOC operations are not only contained but are appropriately controlled. Examples include the HOFO and, when applicable, Type Specialist, the, Head of Check and Training, Head of Aircraft Maintenance Control, Maintenance Controller and Safety Manager.</p>	
Prompts:	
System to contain operations to the operator's area of operation	Key personnel responsibilities and procedures
System to control AOC authorised operations	Pilot maintenance authorisation
Exposition currency procedures	Consistent content across manual suite
Distribution system	Availability of exposition
Element: Operational support systems	
<p>This element contains the authorisation holder's systems and processes that support the conduct of flight operations. The authorisation holder system to provide crews with the published data and procedures necessary to achieve compliance with performance requirements.</p>	
Prompts:	
Charts	Flight planning and preparation
Provision of performance data (payload calculations, lift charts and loading systems)	EFB (Software / hardware distribution, updating and redundancy)
Reliability and validity of performance data	Training programming and scheduling
Operational library	Records management
Record storage and archive	Training flights authorisation
Exam facilities and security	Facilities and equipment
Training aids (Induction Training)	Operational library
Record storage and archive	Charts (training area)

System: Operations continued	
Element: Flight system	
This element contains the authorisation holder’s systems and processes for the safe conduct of the flight phase of operations. Much of this information, procedures and instructions are contained in the operations manual. This is not a limiting factor and other areas of operations may or may not require consideration.	
Prompts:	
Flight and ground support crew coordination	Approved Single Engine Aeroplane (ASEA) Pre-flight procedures
Checklist of normal, abnormal and emergency procedures for the balloon	Extended Diversion Time Operations (EDTO) Refuelling
Flight Management System (FMS) operation procedures	Reduced Vertical Separation Minimum (RVSM) Supplemental electronic devices and information (e.g. iPad)
ATS communication and procedures	Flight deck procedures
Navigation procedures	Monitoring of flight path procedures
Collision avoidance	Formation flying
Flight in CTA	Low flying
Pre and post flight procedures	Refuelling
Altitude awareness procedures	Lower take-off and landing minimum
Monitoring the flight path	Flight profile procedures
Balloon performance considerations	Operational control procedures
Balloon system management procedures	Turn around and post flight procedures
Defect recording procedures	Emergency procedures
Passenger control procedures	Precision Runway Monitoring (PRM)
Element: Operation areas	
This element contains the systems and processes that ensure that the flight crew have adequate knowledge of the port and that the port / landing area is “suitable” for the operation.	
Prompts:	
Inspection and reporting procedure	Suitability for pax recovery
Operating details	Approved weather assessments
Suitability of landing areas	Altimeter setting sources
Security	

System: Operations continued	
Element: Fuel requirements	
This element addresses the current or proposed policy the authorisation holder has in place to comply with the applicable requirements of CASR 131.380. This is achieved through a review of the relevant sections of the authorisation holder’s exposition or separately submitted fuel policy.	
Prompts:	
Balloon specific fuel data	In-flight fuel management
Fuel planning requirements	Variable fuel requirements
Fuel reserves	Fuel policy risk assessment
Element: Management	
This element addresses the systems that ensure the Authorisation holder conducts its operations as authorised by legislation and its approval. This is primarily achieved using a properly structured organisation with appropriate communication channels. Appropriate key personnel ensure airworthiness management operations are not only approved but are appropriately controlled and resourced.	
Prompts:	
System Management responsibility	Key personnel
Appropriate structure	Facilities
Appropriate numbers of personnel	Technical staff
Support staff	
Element: Authorised personnel - Personnel standards	
The authorisation holder is required to establish and maintain an appropriate organisation, with a sound and effective management structure that incorporates a safety management system (if any). The standards of personnel are required to be documented detailing induction training, periodic recurrent training / checking and any required upgrade training. A process for dealing with unsatisfactory performance should also be documented.	
Prompts	
Qualifications	Approvals
Recency (if applicable)	Supervision
Element: Data and documentation	
This element addresses all technical data, regulatory documentation, quality/procedures manuals used in the course of carrying out balloon operations.	
Prompts:	
Exposition	ICA
System to review changes to ICA / data	

Table 8. Cargo and passengers elements

System: Cargo and passengers	
Element: Passenger control	
This element contains the authorisation holder’s systems and processes that deliver control over passenger movement from check-in until completion of the flight.	
Prompts:	
Passenger check in and position allocation	Management of electronic devices
Passenger screening	Carry-on baggage
Transport to/from balloon location to collection point	Basket procedures
Passenger position verification	Check-in contractual arrangements
Ground support personnel	
Element: Non DG / Baggage system	
This element contains the authorisation holder’s systems and processes that deliver control cargo classification to ensure that DG and any specialised cargo (perishable materials, animals) is identified prior to processing. Cargo or baggage, acceptance for non-DG cargo / baggage and specialised cargo scales and their calibration, identification / tagging, cargo manifest building and data flow to the flight crew are key elements in this sub-system.	
Prompts:	
Loose items storage	Mobile phone usage takeoff and landing
Personal baggage acceptance	DG control
Element: DG cargo control	
This element contains the authorisation holder’s systems and processes relating to cargo classification and acceptance procedures to ensure that DG and any specialised cargo (perishable materials, animals) is identified and properly classified prior to acceptance. Establishing whether the DG can actually be carried by air. Examination of the presented DG for correct packaging, preparation declarations and documentation. Check-in and / or Freight Forwarding personnel require DG acceptance training and are required to ascertain the content of the DG prior to formally accepting the DG and provision of a quarantine area.	
Prompts:	
Acceptance	Loading
Examination	Notification
Storage	In-flight emergencies

System: Cargo and passengers continued

Element: Fuel load control

This element ensures that the correct amount of fuel is loaded, where applicable, the correct amount of fuel is removed from a balloon and the fuel quality is controlled. The sub-system fuel quality and equipment is covered by the line servicing element from the balloon system. For demarcation in the audit process the line servicing element from the balloon system is considered to cover all issues related to the quality of delivered fuel, whereas the fuel load control element covers issues of quantity, safety and contractual arrangements.

Prompts:

Fuel ordering	Offload tank procedures
Refuelling procedures	Fuel contractual arrangements
Fuel Policy	Notification to flight crew
Quality control	Storage

Element: Balloon load control

This element is the central system within the total load control system and draws together outputs from all the other systems to ensure the balloon is actually loaded in accordance with the rules of the balloon loading system – in balance, within all weight limits including compartment weight limits, with the load correctly secured, in a balloon correctly configured, and how the crew expected or requested that it be loaded.

Prompts:

Loading system	Balloon configuration
Load distribution	Notification to flight crew
Record retention	Computer software / hardware reliability and validity

Table 9. Training elements

System: Training	
Element: Training management	
This element contains the authorisation holder’s systems and processes for the management of training.	
Prompts:	Sub-prompts:
Training prerequisites	Training syllabus
Training delivery	Training assessment
Training system performance	Remedial training processes
Change management process	Training records management
Continuous improvement	Recommendation and / or issue of authorisations (internally)
Quality system	Internal audits
Element: Training infrastructure	
This element contains the authorisation holder’s systems and processes to ensure that appropriate infrastructure is available for the training being delivered.	
Prompts:	Sub prompts:
Balloon suitability for purpose	Facilities
Training devices	Exam facilities and security
Element: Qualifications and authorisations (instructor, examiner and support staff)	
This element contains the authorisation holder’s systems and processes to manage the instructional and examining standards, (includes HF / NTS, DG training, emergency procedure training, key personnel training, fatigue training, DAMP training etc.).	
Prompts:	Sub prompts:
Competency management	Authorisation holder documents
Professional development	

System: Training continued

Element: Assessments

This element contains the authorisation holder’s systems and processes for the conduct of flight tests and assessments.

Prompts:	Sub prompts:
Recommendations and prerequisites	On-job-competency
Management of candidates’ assessments	Flight test notification
Appropriate assessment devices	Construct of the assessment exercise
Exam bank management	

Table 10. Safety management elements

System: Safety management (if any)	
Element: Safety policy and objectives	
This element contains the systems and processes that ensure effective governance to support the safety management that is in place, including processes for the review and update of the authorisation holder's management and commitment.	
Prompts:	
Safety policy	Appointment of key personnel
Just culture	Third party relationships and interactions
Safety objectives / Safety performance indicators	Emergency response plan
Safety accountabilities / responsibilities of managers	
Safety governance	
Element: Safety risk management	
This element contains the systems and processes to ensure analysis of the safety risks associated with identified hazards resulting in the implementation of effective safety risk controls.	
Prompts:	
Hazard identification processes - reactive	Risk assessment and mitigation
Hazard identification processes - proactive	Safety investigation
Element: Safety assurance	
This element contains the systems and processes for setting, recording and evaluating system performance, conformance with regulations and company procedures, a process for conducting internal safety investigations, effectively managing change across the aviation activities conducted and driving continuous improvement.	
Prompts:	
Training records	Safety communication processes
Key personnel familiarisation training	HF / NTS training
Recurrent training	Safety-critical / Safety Specialist specific training

5 Surveillance currency guide

Table 11. Surveillance currency guide

Surveillance level	Type	Elements
Level 1	Systems Audit	Systems, risks and compliance
	Post-authorisation review	Entry control elements
Level 2	Operational check	e.g. Flight deck observation, ramp check

Note: Surveillance intervals are determined by the National Oversight Plan (NOP). Refer to section regarding surveillance intervals for more information.

6 Information sources

The following is a non-exhaustive list of information sources that can be accessed to support the assessment of an authorisation holder:

- surveys
- third-party audits
- regulatory history, findings
- past surveillance reports and findings
- EAP information
- Defect Report Service (DRS)
- Regulatory service activity
- information gathered by the authorisation holder
- external information gathered from industry or other government agencies
- Enforcement action
- past accident / incident history
- risk management plans provided by the authorisation holder.

Most of this information is available to CASA staff via the Data Warehouse using the PowerBI application.

Note: For advice on where and how to access required information refer to CSM chapter on information capture and access.