# NSW/ACT RAPAC 2018-3

**Venue:**
- NSW - CASA Office, Level 2 Centennial Plaza (Tower A)
  260 Elizabeth St Sydney
- ACT - CASA Office, Aviation House – 16 Furzer Street, Phillip
  Level 1 Conference Room

**Start Time:** 1300  
**Finish Time:** 1430  
**Date:** Wednesday 17 October 2018

<table>
<thead>
<tr>
<th>Meeting Chair</th>
<th>Convenor</th>
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<tr>
<td>Rob Walker</td>
<td>Grahame Hill / John Hogan</td>
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## MINUTES

<table>
<thead>
<tr>
<th>Item No</th>
<th>Item</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td><strong>OPENING</strong></td>
</tr>
<tr>
<td>2</td>
<td><strong>REVIEW OF ACTION ITEMS</strong></td>
</tr>
<tr>
<td>3</td>
<td><strong>REGIONAL SAFETY MATTERS</strong></td>
</tr>
<tr>
<td>4</td>
<td><strong>CHANGE PROPOSALS</strong></td>
</tr>
<tr>
<td>4.1</td>
<td>Class D services in R421AB (Nowra airspace) for non-locally based civilian aircraft</td>
</tr>
<tr>
<td>5</td>
<td><strong>AGENCY BRIEFINGS AND UPDATES</strong></td>
</tr>
<tr>
<td>5.1</td>
<td>Bureau of Meteorology</td>
</tr>
<tr>
<td>5.2</td>
<td>Airservices Australia</td>
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<td>5.3</td>
<td>Defence</td>
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<tr>
<td>6</td>
<td><strong>OTHER BUSINESS</strong></td>
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</tbody>
</table>
1. OPENING

The Chair thanked attendees for making their time available. The NSW and ACT RAPACs were joined via videoconference.

2. REVIEW OF ACTION ITEMS

The status of outstanding action items was reviewed with comments included in the attached table.

3. REGIONAL SAFETY MATTERS

No regional safety matters were raised.

4. CHANGE PROPOSALS

4.1 Proposal – Class D services in R421AB (Nowra airspace) for non-locally based civilian aircraft

SQNLDR Paul Scott spoke to the paper on proposal for non-locally based civilian aircraft to receive Class D services in the Nowra (attached). He invited RAPAC members to provide initial feedback, however there will be an Airspace Change Proposal (ACP) submitted to CASA Office of Airspace Regulation (OAR) which will provide members an additional opportunity to provide further feedback on the proposal.

5. AGENCY BRIEFINGS AND UPDATES

5.1 Bureau of Meteorology

Mr Ashwin Naidu (BoM) gave a presentation (attached) which discussed the BoM Transformation Project, SIGMET sequence numbering and some improvement to the Graphical Area Forecast (GAF) following the Post Implementation review. He also discussed an upcoming TAF review and the update of the Manual of Aviation Meteorology. BoM will also be sending RAPAC members a Survey for Regional Airports.

RAPAC members enquired about the Trend Type Forecast (TTF) review. BoM said that they were waiting for CASA to get back to them to provide more information. CASA will follow up on this to check its process.

5.2 Airservices Australia

Airservices provided a generic update to the RAPAC.

5.3 Defence

The representative from Richmond informed the RAPAC that the airfield works have now completed. After being unserviceable due to upgrades, it is recommended that members read NOTAMs when wanting to use the ILS at Richmond to determine its availability.

SQNLDR Paul Scott (Nowra) informed the RAPAC that the tower refurbishment at Nowra is complete.
The representative from Williamtown informed the RAPAC that the ILS will become available in due course. He also stated that the NDB replacement starts early November through to January and thus will be offline. He also informed the RAPAC that restrictions around Williamtown will be in place for the Joint Strike Fighters (JSF). The RAPAC was also advised that the radar at Williamtown will be turned off on 2 – 6 January and as a result the coastal route will not be available for the duration of the activity due to proximity issues without the radar.

The representative from Holsworthy informed the RAPAC that they were working with RFS and advised that hazard reduction will not occur until April 2019, after Summer. The area has suffered four wildfires so far this year.

6. OTHER BUSINESS

6.1 Update on low-level frequency use in Class G airspace
The Chair gave an update on low-level frequency use in Class G airspace (Multicom) and advised that the issue should be finalised shortly, with the public release of the Summary of Consultation (SOC) this week and changes to AIP in February. The plan is to revert to the 2013 procedures, but to ensure as many uncharted aerodromes as possible are included on charts. The Chair also outlined that there will be an education package whereby all RAPACs across the country will be engaged.

6.2 Update on Canberra Airport runway lighting upgrade
Mr Richard Doyle (Canberra Airport) provided an update to the RAPAC on the runway lighting upgrades at Canberra Airport. He advised that the Airport has commissioned CAT II lighting and are operating but informed the RAPAC that there is a technical delay with the implementation of the stop bars. He advised that they are scheduled to be commissioned by December 2018, but not in service until January 2019. Richard said he will send a paper after the meeting to attach to these minutes to advise members with more detail to the lighting upgrade update.

6.3 Low cost ADS-B consultation
The Chair advised the RAPAC that the results of the consultation on low cost ADS-B had been published. The Chair will provide an update out of session to both the ACT and NSW RAPAC Convenors.

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<thead>
<tr>
<th>Action</th>
<th>The Chair to provide update on low cost ADS-B to both Convenors</th>
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<tr>
<td>Responsible</td>
<td>Chair</td>
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<tr>
<td>Timeframe</td>
<td>Out of Session</td>
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6.4 CASR Part 173 MOS update – Sydney Airport
Mr Ken Allcott (Sydney Airport) enquired about receiving an update on CASR Part 173 MOS as they are yet to receive one. This is in regard to the operation of an ILS without HIAL. The Chair to follow up and report back.

<table>
<thead>
<tr>
<th>Action</th>
<th>The Chair to follow up on update to CASR Part 173 MOS and report back to Ken Allcott.</th>
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6.5 National infrastructure SBAS trial
Mr Ian Mallett provided an update on the SBAS trials and advised the RAPAC that they went well. It allowed aircraft down to 200ft minima. The Chair enquired whether RAPAC forum would be of value to provide updates to the broader community. Mr Mallett advised that ASTRA attendees are actively going out to industry to provide updates, however he stated that he can provide a brief to CASA’s Aviation Safety Advisors. The Chair agreed to discuss this matter offline.
6.6 VFR Lane at Tidbinbilla
The ACT Convenor enquired about an update on the establishment of the VFR Lane at Tidbinbilla. Mr Anthony Lawler (CASA OAR) advised that he will find out update and provide it to the ACT Convenor after the meeting.

Post-meeting update: The VFR Lane at Tidbinbilla has been established and is reflected on the visual charts effective 8 November 2018.

7. ATTENDANCE LIST

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
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<tr>
<td>Rob Walker (Chair)</td>
<td>CASA</td>
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<tr>
<td>Teraya Miller</td>
<td>CASA</td>
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<tr>
<td>Matthew Di Toro</td>
<td>CASA</td>
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<tr>
<td>Anthony Lawler</td>
<td>CASA</td>
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<td>Grahame Hill</td>
<td>NSW Convenor</td>
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<tr>
<td>John Hogan</td>
<td>ACT Convenor</td>
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<tr>
<td>Aaron Doherty</td>
<td>Defence</td>
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<tr>
<td>Martyn Silver</td>
<td>CASA</td>
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<tr>
<td>Cody Calder</td>
<td>RAAus</td>
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<tr>
<td>Ian Mallett</td>
<td>AusALPA</td>
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<tr>
<td>Alexandra Jennings</td>
<td>CASA</td>
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<tr>
<td>Alex Dallwitz</td>
<td>CASA</td>
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<tr>
<td>Richard Doyle</td>
<td>Canberra Airport</td>
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<td>Mike Cleaver</td>
<td>HCAPA</td>
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<td>Ken Carroll</td>
<td>Airservices</td>
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<td>Chris Whetton</td>
<td>Defence</td>
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<td>David Carter</td>
<td>Defence</td>
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<td>Shane Doyle</td>
<td>Defence</td>
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<td>Jeff Hunt</td>
<td>Regional Express</td>
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<td>Paul Scott</td>
<td>Defence</td>
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<td>Dean Armstrong</td>
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<td>Forrest Shore</td>
<td>Sydney Heil Tours</td>
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<td>Senja Robey</td>
<td>AWPA</td>
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<td>Ian Mallett</td>
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<td>Lea Cesic</td>
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<td>Emmanuel Kinara</td>
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<tr>
<td>2018-1/1</td>
<td>Arrange a meeting between key stakeholders including, Airservices ATC (Tower, TCU and Procedure Design) and helicopter operators.</td>
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<tr>
<td>2018-3/1</td>
<td>The Chair to provide an update on low cost ADS-B to both ACT and NSW Convenors</td>
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<tr>
<td>2018-3/2</td>
<td>The Chair to follow up on an update to CASR Part 173 MOS and report back to Ken Allcott.</td>
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<tr>
<td>2018-2/1</td>
<td>John Hogan (ACT Convenor) to prepare an ACP including a risk assessment for the consideration of protected airspace for CASA OAR assessment.</td>
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**REGIONAL AIRSPACE AND PROCEDURES ADVISORY COMMITTEE**

**NSW/ACT RAPAC 2018-3**  
**AGENDA ITEM: 4.1**

<table>
<thead>
<tr>
<th>TITLE</th>
<th>Proposal - Class D services in R421AB (Nowra airspace) for non-locally based civilian aircraft.</th>
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<tbody>
<tr>
<td>SUBMITTED BY</td>
<td>Air Force. Squadron leader Paul Scott (<a href="mailto:453SQNNWAFLT.CDR@defence.gov.au">453SQNNWAFLT.CDR@defence.gov.au</a>)</td>
</tr>
<tr>
<td>PURPOSE</td>
<td>To seek members feedback/comments on the proposal for Class D services within R421AB (Nowra Airspace) for non-locally based civilian aircraft.</td>
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| KEY ISSUES | • Restricted areas R421AB surround YSNW, this includes the circuit area and the terminal area.  
• Traffic density in R421ABC – especially below 2500FT – is increasing due to the Joint Helicopter school approaching full operating capacity.  
• The extant application of Class C airspace services requires IFR aircraft (military and civil) to be separated from VFR aircraft, this results in delays for Fleet Air Arm aircraft, thus directly affecting training objectives.  
• Extant airspace not being increased, therefore more efficient use of airspace by application of Class D services will result in increased efficiencies.  
• Airspace Change Proposal being submitted for non-locally based civilian aircraft to participate. |

**BACKGROUND**

In early 2018, Joint Helicopter School (JHS) commenced operations from YSNW. This is the sole initial training school for all Navy and Army rotary wing pilots, aviation warfare officers and aircrewmen. By mid-2019, 120 students per year will be processed through YSNW. JHS is being integrated into extant Nowra airspace procedures, currently used by Navy Fleet Air Arm SQNs and one locally based civilian operator - all based at YSNW. Currently, IFR aircraft within R421AB require separation (3nm/1000FT) from IFR and VFR aircraft, therefore the ability to increase the density of operations is reduced, as extant airspace is absorbed by the applicable separation standards. As Nowra traffic density is increases (mostly below 2500FT), Nowra airspace needs to evolve. An airspace review was conducted: considering aircraft movement density, aircraft performance characteristics, the extent in which flight operations are primarily conducted under VFR and how local procedures may be in place that manipulates the Class C service to effectively simulate Class D service.

AIP (ENR 1.4 para 5.3.33) states that civil aircraft operating in military restricted areas will receive service equivalent to that of Class C airspace, unless otherwise specified in ERSA.

Both Class C and Class D airspace permit IFR and VFR flight operations. All flights are provided with an ATC service, which may or may not include support by an ATC radar approach control service ([NWA ATC will continue to provide a radar approach control service – regardless of Class C or D service provision](mailto:NWA ATC will continue to provide a radar approach control service – regardless of Class C or D service provision)). The significant differences between Class C airspace and Class D airspace are:

- **Separation requirements.** A Class C service provides separation between IFR–IFR and IFR–VFR aircraft. A Class D service provides separation between IFR–IFR aircraft, supplemented by provision of traffic information to IFR.
aircraft in respect of conflicting VFR flights. VFR flights receive traffic information in respect of all other conflicting flights, where practicable.

b. Entry conditions. ‘ICAO Annex 11 Appendix 4’ requires an ATC clearance and continuous two way communications to enter Class C and Class D airspace; however, within Australia ‘ENR 1.1- 24 para 2.11.3.1’ permits entry into Class D airspace after establishment of two way communications between the aircraft and ATC – no specific ATC clearance is needed. As NWA airspace will remain RA regardless of Class D service provision, an ATC clearance will be still be required to enter the airspace, which helps eliminate risk so far as reasonably practical.

c. Airspace levels. ENR 1.4 para 1.1.4 limits the upper level of Class D Control Zones (CTR) and associated control area steps to 4500FT; however, given the nature of Defence flying activity a higher level of 4500FT is insufficient to support military aircraft operations. Noting NWA presently does not use the CTR concept, standardisation of Class D service provisions at all airspace levels within RA supports safety through standard application of procedures. Therefore, Class D at NWA in R421AB will be provided to the upper level of FL125 (highest assignable level is FL120 as per agreement with Melbourne Centre).

d. Speed limitations. Civil aircraft that may desire access to NWA RA ENR 1.4 para 4.1 Class D speed restrictions would apply – 200KTS within 4nm of the aerodrome below 2,500FT and 250KTS in the remaining airspace, vice the extant Class C speed restrictions – 250KTS below 10,000FT.

Precedents for Class D service application
In 2009 CASA conducted two studies into the Australian unique General Aviation Aerodrome Procedures (GAAP) – the GAAP Review and the Utility of General Aviation Aerodrome Procedures. These studies found safety could be improved by replacement of GAAP with International Civil Aviation Organisation (ICAO) Class D airspace procedures. On 3 Jun 10, the transition from GAAP to Class D airspace was completed at Archerfield in Queensland, Bankstown and Camden in New South Wales, Jandakot in Western Australia, Moorabbin in Victoria and Parafield in South Australia. CASA recognised that replacing GAAP with the standardised ICAO Class D procedures improved safety and extended Class D procedures to all controlled civil aerodromes that did not require a Class C service.

Given the CASA reviews and decision to implement standard Class D airspace throughout Australia, and the fact that this change was assessed to improve safety, Defence is rightly considering that introduction of Class D airspace within comparable distances at Defence aerodromes, where deemed appropriate to do so, will not compromise suitability for flight beyond present risk levels.

In July 14, Class D separation standards have been applied between local aircraft operating within East Sale RA, formalising what had been occurring under base standing instructions for many years. Since that authorisation, there have been zero known safety incidents that listed the application of Class D separation requirements as a cause factor. A fair assumption is that East Sale flying operations are equivalent or greater in complexity to NWA due to the supported aircraft types and airspace parameters, therefore application of Class D separation requirements within NWA RA to gain increased efficiencies will not introduce new risk.

Pearce has been providing Class D separation services to Pearce based aircraft and specific non-local civil aircraft for a significant number of years, authorised via RAAF Base Pearce base standing instructions.

Transition training

ATC. Local training/briefing will occur for all controllers prior to implementation. Of note, critical stages of flights will always be ‘segregated’ – regardless of whether Class C or D services are being provided. Furthermore, vertical and/or lateral segregation will be implemented whereby this will reduce pilot/ATC workload – as opposed to reciprocal traffic being passed as the default option.

ADF pilots. Defence pilots are adequately familiar with all Australian airspace classes. Other than being briefed on the commencement of any airspace service provision changes, Army, Navy and Air Force Subject Matter experts (SME) have advised specialised pilot training for Class D service provision is not required. A further mitigating factor is that all Defence pilots are normally qualified to IFR or are supervised by Qualified Flying Instructors during ab-initio training, reducing the likelihood of safety events.

Civil pilots. Civil pilots who may operate in the NWA area, either planned or short notice track diversions, will have already complied with CASA Class D training requirements as part of normal training. Suitable awareness of the airspace service change will be provided by RAPAC, then NOTAM, prior to ERSA being permanently amended.
Mitigations that ensure NWA can operate under Class D procedures without introducing any new risks while improving airspace efficiencies include:

a. NWA traffic movements are significantly lower than many civil Class D aerodromes.

b. Navy already uses a high level of VFR as a means to minimise flight delays, which affords a near seamless Class D transition for local aircraft.

c. There are no known ATC or pilot Class D training gaps.

d. Pilot qualification standards and experience levels for both military and civil pilots operating at NWA are high.

e. Military pilots are normally qualified to fly under the IFR.

f. Aircraft profiles and cockpit visibility attributes for RW aircraft allow exceptional manoeuvrability and visual detection of traffic conflicts.

g. Many aircraft are equipped with TCAS to enhance pilot awareness and safety.

h. RA access requirements ensure aircraft cannot enter RA simply by establishing two way radio communications, which ensures ATC is aware of all aircraft and can apply control instructions to eliminate safety risk.

i. ATC radar service will continue and may adjust between an advisory or control service depending on flight category or proximity of aircraft.

Locally based civilian operators: Air Affairs, Top Aces and Raytheon already participate in various ‘reduced separation standards’ in and around ADF air bases, ie runway separation, wake turbulences and pilot responsibility for separation (above 10,000FT) etc. These are documented in internal Defence documents whereby the Civil Air Operator Chief Pilots (CAO–CP) have agreed to retain all risk as long as ATC correctly applies the agreed procedures.

As of 20 Sep 18, Commander Fleet Air Arm has approved all RAN assets to receive Class D services in R421AB. As of 10 Oct 18, awaiting Air Commander Australia to approve all state aircraft (all ADF aircraft) to receive Class D services in R421AB.

Defence can approve and direct what airspace class services are provided in their administered restricted areas; to state aircraft and those locally based civilian aircraft whose CAO-CPs agree to participate. For non-locally based civilian aircraft who transit R421AB, CASA Office of Airspace Regulation maintains a requirement to review and consider these aircraft, as any proposed airspace service changes may increase the safety risk to these aircraft. This is accomplished via a Form 1284 Airspace Change Proposal (ACP) and required supporting documents. This paper and subsequent feedback will be submitted as part of the ACP.

*A date to implement class D services in R421AB for state aircraft and locally based aircraft has yet to be determined. This will most likely occur prior to the pending approval of the ACP, therefore, in the interim, non-locally based civilian aircraft would continue to receive a Class C service in R421AB.

Conclusion
At NWA, given existing maximum use of VFR flight category during operations, a seamless transition to Class D services for all aircraft is possible, further supported by determinations and mitigations that include: minimal Class D services training requirements for air traffic control (ATC) and pilots, high standards of pilot qualifications and supervision, aircraft profiles, cockpit visibility attributes, aircraft traffic awareness systems, RA access requirements, continued ATC radar service and existing use of Visual Flight Rules (VFR) as is practicable. Class D services will prevent training disruptions from occurring when non-local Instrument Flight Rules (IFR) aircraft operate with NWA RA.

NSW and ACT RAPAC members are invited to provide feedback or comments to Squadron Leader Paul Scott 453SQNNWAFLT.CDR@defence.gov.au / 02 4424 2541 by 02 Nov 18.
Topics

- Transformation of Aviation Meteorological Services
- Changes to SIGMET sequence numbering
- GAF Post Implementation Review
- TAF Review
Transformation of Aviation Meteorological Services: Case for Change

**Current operations**
- Forecasters provide public and aviation weather
- Forecasting delivered from 11 discrete locations

**Key issues:**
- Service improvements are complex and costly
- Workload managed within locations
- Scope to strengthen and uplift aviation specialisation.

**Future service demands**
- Industry trends
  - Growth in air movements
  - Global operations and sourcing

**Future services**
- Digital and graphical met information, in cockpit
- Air Traffic Flow Management, OneSky
- Regional Hazardous Weather Advisory Centres (VAAC, TCAC)
Transformation Blueprint

Quality
- Dedicated aviation specialists with a deep understanding of the industry

Responsive
- Service improvements faster due to consolidation of people and ICT

Resilient
- Two aviation centres underpin continuity; structured training and smart technologies to strengthen and deepen local aviation knowledge

Flexible
- Operations that efficiently scale to tactical loads and accommodate service expansion, including new and expanded services
Technology Uplift

Operating environment:
• simpler, swifter, robust

Improved Tools
• Flexible workload
• Intelligent alerts
• Situational awareness

Training / Learning
• Knowledge-base
• Immersive simulator
Waypoints

Service Review
2014-2015
- Review of Service
- Review Report

Business Case
2016-2017
- Customer feedback
- Business case

Programme Yr 1
2017-2018
- Operating and business model development
- Technology design and build

Programme Yr 2
2018-2019
- Staff deployment; Systems commissioned
- Northern Aviation Centre (Brisbane) operational

Programme Yr 3
2019-2020
- Full technology uplift complete
- Southern Aviation Centre (Melbourne) operational
More information:

Aviation Meteorological Services
Transformation webpage

Contact us on:
Aviation_Transformation@bom.gov.au
Changes to SIGMET sequence numbering

- SIGMET sequence numbers consist of three characters, e.g. B02

- The SIGMET sequence number will change on the 8th November 2018 to allow each 26 alpha characters to be used per FIR.

- As a result, the same alpha character could be used simultaneously in each FIR but for two different SIGMET phenomena.

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**YMMM** SIGMET **C02** VALID 200500/200900 YMHF-
YMMM MELBOURNE FIR **SEV TURB** FCST WI S4000 E14900 - S4250 E14900 - MRL - OAT - YDPO - S4000 E14700 SFC/8000FT STNR WKN
RMK: ME=

**YBBB** SIGMET **C02** VALID 200440/200640 YSRF-
YBBB BRISBANE FIR **SQL TS** FCST WI S2910 E15000 - S2910 E15020 - S3100 E15140 - YNWD - S3140 E15140 - MUI - S2940 E14950 TOP ABV FL450 MOV E 35KT NC
RMK: BB=
GAF Post Implementation Review (PIR)

Following the implementation of the GAF project, a Post Implementation Review (PIR) was conducted with the following objectives:

- evaluate whether the Graphical Area Forecast (GAF) project objectives were met;
- determine how effectively the GAF project was run, including the relevant documentation;
- review whether the expected benefits were realised; and
- document lessons learned and make recommendations for future improvements.
To assist with GPWT product - BoM will create GPWT/PCA reference charts.
- Complete – Available on Bureau website and NAIPS Chart Directory.

Update of Education Guide.
- complete

Airservices update NAIPS in coordination with the BoM.
In early July, Airservices deployed an update to the NAIPS web interface. The update included the following:

- The period of validity of a briefing defaults to **6 hours** (reduced from 24);

- The chart variant defaults to **Hi Res** and the variant cannot longer be omitted when requesting a briefing;

- The chart directory now displays the **start time** of the chart (replacing product type and receive time columns);

- When **PDF** is selected from the chart directory, the chart is now displayed immediately (rather than a separate form being displayed requiring the user to click another link).

- Other changes will be deployed at a later date (most likely in November 2018).
A GAF PIR report summarising the post implementation review process, project achievements, the action plans and recommendations for consideration in future reviews of aviation meteorological products and services is now available on GAF webpage at

TAF Review

- Previous review implemented in 2015.

- Purpose:
  - Determine the current and future needs of the aviation industry.
  - Make recommendations relating to the provision and categorisations of TAFs.
  - Quality management.

- Draft report expected to be released for industry comment Q2 2019

- Implementation of changes expected Q2 2020.
 Coming soon…

➤ Manual of Aviation Meteorology Update planned early next year.

➤ Survey for Regional Airports
   An out of session e-mail will be sent out when the online survey becomes available.
Questions and comments

Avn_Regional@bom.gov.au
# CANBERRA AIRPORT
LIGHTING UPGRADE AND STOP BAR INSTALLATION RWY 17/35

**Submitted by** Richard Doyle, Canberra Airport – r.doyle@canberraairport.com.au

**Purpose**
UPDATE - For members awareness of Airfield Lighting Upgrade and noted operational changes

**KEY ISSUES**

### Phase 1 Lighting Upgrade

- RWY 17/35 RWY centreline, touchdown zone lighting and upgrade to HIAL have been commissioned and in operation.

- Commissioning of Stop Bars with dual Microwave Barrier Detectors (MBD) at RWY 35 taxiway intersections and at holding points TWY Bravo (north and south) RWY 12/30.

- Runway holding point lights will operate at RWY 12/30 taxiway intersections;

- Taxiway Centreline light spacing reduced from 60m to 30m on TWY B, and TWY C (between TWY B and TWY K) have been commissioned and are in operation

### Phase 2 Lighting Upgrade

Installation, commissioning and operation of Stop Bars with dual Microwave Barrier Detectors (MBD) at the following TWY intersections with RWY 12/30.

- TWY Charlie 1;
- TWY Kilo;
- TWY Hotel;
- TWY Juliet; and,
- TWY Charlie 5.

**Phase 1 and Phase 2: Commissioning of Stop Bars to taxiway intersection RWY 17/35 and RWY 12/30. This is anticipated by mid-February 2019.**

**Attachments**
Phase 2 - RWY 17/35 and RWY 12/30 Stop Bar Location and TWY Capabilities mapping
1. **INTRODUCTION**

1.1 Canberra Airport has completed the upgrade and commissioning of the approach and airfield lighting systems to accommodate the introduction of Category II ILS procedures in February 2019. These upgrades consist of the installation of the following lighting systems:

- Upgrade of RWY 35 HIAL - Red Barrettes - COMMISSIONED and OPERATIONAL.
- RWY 17/35 centreline lighting - COMMISSIONED and OPERATIONAL.
- RWY 35 touchdown zone lighting - COMMISSIONED and OPERATIONAL.
- Stop Bars at RWY 35 taxiway intersections.
- Stop Bars at holding points TWY Bravo (north and south) RWY 12/30.
- Relocation of all RWY 17/35 holding points out to 105m from RWY centerline - COMMISSIONED and OPERATIONAL
- TWY lights to include RWY lead-on lights at Stop Bars.

1.2 With the implementation of the upgraded lighting system and relocation of the RWY holding points the following operational conditions will apply:

- Stop Bars will operate at all RWY 17/35 and RWY 12/30 taxiway intersections during ATC hours.
- Runway guard lights will operate at all RWY 17/35 holding points irrespective of ATC coverage.
- Runway holding point lights will operate at RWY 12/30 taxiway intersections outside ATC hours.

1.3 Lighting control systems will be implemented for all lighting associated with the lighting upgrade, including integration into ATC systems.

AIP SUP H92/18 details the airfield ground lighting conditions associated with the Canberra Airport lighting upgrade.

2. **TESTING & COMMISSIONING**

2.1 Connection and testing of new lighting will be conducted, with the transition to all newly required AGL circuits, lighting and control systems.

2.2 Stop Bar commissioning will be carried out separately to ensure complete integration with ATC systems.

2.3 Commissioning of the new lighting systems will be published by NOTAM in lieu of the AIP ERSA amendment.
3. **STOP BARS**

3.1 Stop Bars will be installed at TWY intersections RWY 17/35 and RWY 12/30.

3.2 Stop Bars and taxiway lead-on lights at 15m spacing will be installed at TWYs C east, C west intersection with RWY 17/35.

3.3 A Stop Bar is unidirectional, at right angles to the taxiway centreline and shows red in the direction of approach to the Stop Bar from the taxiway.

3.4 The Stop Bar lights are spaced 3m apart and 0.3m before the point at which it is intended that traffic approaching the runway must stop.

3.5 When a Stop Bar is on at night or in Low Visibility Operations, any taxiway lead-on centreline lights immediately beyond the Stop Bar are switched off for a distance of at least 90m. Once the Stop Bar is switched off, the centreline lead-on lights beyond the Stop Bar are switched on.

3.6 RWY 12/30 holding point lights will operate on TWYs C1, C5, H, J and K irrespective of ATC coverage, when taxiway lights are on. RWY 12/30 holding point lights will operate on TWYs B (north and south) outside ATC coverage.

3.7 Stop Bars will be used on all RWY 17/35 and RWY 12/30 holding points (Attachment 1).

3.8 Figures 1 shows a typical Stop Bar and taxiway lights installations for all RWY 17/35 and RWY 12/30 holding points intersections.

**Figure 1**

**STOP BAR CONFIGURATION AT TAXIWAYS WITH TAXIWAY LEAD ON LIGHTS AT 15m SPACING**
3.9 An aircraft taxiing or a vehicle operating on the maneuvering area must stop at all lit Stop Bars. The aircraft or vehicle will only proceed further when in receipt of a clearance to do so from ATC and the stop bar lights have been extinguished.

3.10 Stop Bars will only be extinguished following correct read back of clearance by the pilot or vehicle driver.

3.11 If the Stop Bar has not been extinguished after receipt of a clearance, the pilot or vehicle driver must seek clarification from ATC before proceeding.

3.12 All Stop Bars will be equipped with detection systems that automatically reset following the passage of an aircraft or vehicle but can also be manually reset by ATC after observing the aircraft or vehicle cross the Stop Bar.

3.13 If the Stop Bar fails to extinguish in visibility conditions of greater than 800m a NOTAM will be issued and the failure included on the ATIS. If the Stop Bar fails to extinguish during Low Visibility Operations, a NOTAM will be raised, it will be included on the ATIS and the taxiway entry and holding point will not be available.

3.14 Runway Guard Lighting have been retained at the relocated RWY 17/35 holding points.

3.15 Runway holding point markings and lights have been retained at RWY 12/30 (note comments at 3.6).

4. GENERAL

4.1 TWY B (full length) and TWY C between TWY K and TWY B lighting will be spaced at 30M centers.

4.2 TWY A lighting will be retained at 60M centers.

4.3 TWY C east of TWY B and West of TWY K, TWY K & H lighting will be retained at 60M centres.

5. LOW VISIBILITY PROCEDURES

5.1 The approach and touch-down zone lighting, stop bars and procedures will support:

- RWY 35 CAT II approaches with an RVR not below 350M.
- RWY 35 SA CAT II approaches with an RVR not below 350m.
- RWY 35 SA CAT I approaches with an RVR not below 450M.
- RWY 35 CAT I approach
- RWY 17/35 take-off with an RVR not below 350M

5.2 All Taxiways are capable of supporting operations not below 550m RVR/RV. Additional taxiway capabilities below 550m RVR/RV are as shown on Attachment 1.
6. FURTHER INFORMATION

6.1 For additional information contact:

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CANBERRA AIRPORT
CAT II APPROACH LIGHTING UPGRADE
& STOP BAR INSTALLATION RWY 17/35
STOP BAR LOCATIONS & TWY CAPABILITIES
BELOW 550m RVR
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