Aeronautical Study of Port Macquarie

March 2014
1. Executive Summary

This aeronautical study was commissioned in response to the Government's expectation under the Australian Airspace Policy Statement (AAPS\(^1\)) for the Civil Aviation Safety Authority (CASA) to undertake regular and ongoing studies to meet its obligations under Section 13 of the Airspace Act 2007 (Act). The Office of Airspace Regulation (OAR) undertakes a risk based approach in determining which locations are studied.

The purpose of the study is to review the classification of airspace within 45 Nautical Miles (NM) of Port Macquarie aerodrome (hereafter referred to as Port Macquarie), New South Wales. Particular emphasis is placed on the safety of Passenger Transport\(^2\) (PT) operations.

1.1 Operational Context

Port Macquarie is a certified aerodrome, owned and operated by the Port Macquarie-Hastings Council. The aerodrome is located on the mid north coast of New South Wales, approximately 170 NM north of Sydney. It is located on the southern side of the Hastings River, approximately 5 kilometres west of the Port Macquarie central business district and has an elevation of 12 feet (ft) above mean sea level (AMSL).

The aerodrome caters for both business and tourist travellers, supporting PT operations conducted by QantasLink and Virgin Australia Regional Airlines (formally Skywest Airlines).

Aircraft types operating at Port Macquarie include:

- DHC-8;
- ATR 72;
- Piper PA31 Navajo;
- Beech BE55 Baron;
- Cessna C152, C172 and 182; and
- Recreational aircraft.

Port Macquarie currently supports over 249,700\(^3\) passengers annually equating to approximately 26,063\(^3\) aircraft movements. These figures are slightly down on the previous 12 months (258,100 and 27,569 respectively). Based on past growth, the aerodrome operator predicts the number of passengers to increase by approximately 3% each year and movement numbers to increase approximately 5% each year.

Port Macquarie is a non-controlled aerodrome situated in Class G airspace with a nominated Common Traffic Advisory Frequency (CTAF) which also includes surrounding aerodromes. Overlying the Class G airspace is Class E airspace which begins at 8,500 ft and Class A airspace commencing at Flight Level (FL) 180.

Limited lower level radar coverage exists in the area surrounding Port Macquarie.

Within the Class G airspace a Flight Information Service (FIS) and traffic information service is provided by Brisbane Centre to aircraft operating under Instrument Flight Rules (IFR). Aircraft operating under Visual Flight Rules (VFR) are provided with a FIS and may receive a Surveillance Information Service (SIS) subject to Air Traffic Control (ATC) work load and the level of surveillance in the area.

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\(^1\) A full list of abbreviations used within this report can be found at Annex A.

\(^2\) For the purposes of this study, PT services can be defined as activities involving Regular Public Transport (RPT) and all non-freight-only Charter operations.

\(^3\) From Airservices Australia's Data Validation Report (December 2013).
1.2 Issues

The key issues raised by airspace users during the generative interviews have been categorised as follows:

**Increased traffic at Port Macquarie:**
- Air traffic at Port Macquarie has been increasing at approximately 5% per annum since 2009, however there was an 8.5% decrease in traffic in 2013.
- The aerodrome at Port Macquarie has completed an upgrade to allow larger aircraft to service the area. The Council is actively looking for additional PT operators to commence services to Port Macquarie. The Council would like to see at least one return flight 2-3 days per week added to the current PT schedule. The additional flights will change the mix of traffic at the aerodrome.

**Frequency congestion / radio usage:**
- Issues with frequency congestion and over-transmission of calls between Port Macquarie and Taree traffic. This affects operations at Port Macquarie and Taree.
  - Aircraft on the ground at Port Macquarie cannot hear radio calls from aircraft on the ground at Taree (and vice versa).
  - Pilots notice traffic that is either (a) not on the correct frequency or (b) that doesn't respond to radio calls.
  - There are issues with VFR aircraft transiting from Coffs Harbour to Williamtown not being on the area or Kempsey frequency when in the vicinity of Kempsey.

**English language:**
- Student pilots from other areas (such as Bankstown and Cessnock) are hard to understand and do not appear to have a thorough understanding of the English language. Some students "go quiet" when a radio call is responded to. This issue may increase with the introduction of foreign students at Port Macquarie.

**Additional flying training students:**
- The introduction of foreign students at Port Macquarie may exacerbate frequency and airspace congestion at Port Macquarie and Kempsey aerodromes.

**Aerodrome infrastructure:**
- The lack of a full length parallel taxiway at Port Macquarie affects operations. A grass/gravel taxiway to be used by light aircraft will reduce runway occupancy times and increase the efficiency of the aerodrome. The need for a taxiway will increase as more students are trained at Port Macquarie.
- The lack of a parallel taxiway at Kempsey aerodrome will affect operations and businesses at the aerodrome if an influx of students are conducting circuit training. A grass/gravel taxiway to be used by light aircraft will reduce runway occupancy times and increase the efficiency of the aerodrome.

**Restricted Areas:**
- R574 hinders operations between Port Macquarie and Lord Howe Island. The activation of R574 requires a diversion to the north (almost to Coffs Harbour). Having a defined route through the airspace that could be flight planned would
assist operations and increase safety.

- The close proximity of R583A to the south of Taree affects PT operations. Aircraft are often held at altitude and not given a clearance to descend until within 7 NM of Taree. This leaves the aircraft high on approach.

- When R587B is active, aircraft are delayed on climb by approximately five minutes.

- R574 is in close proximity to the missed approach points for the Port Macquarie RNAV approach to runway 21. If an aircraft gets within 2.5 NM of the RA boundary Airservices Australia’s (Airservices) ATC must advise Defence ATC at Williamtown which adds to Airservices’ ATC workload - often at a time when workload is already high due to bad weather (which is causing the missed approaches).

- RAs can be, and are, activated and deactivated as required. However, most PT flight plans are submitted the evening prior to the flight and the NAIPS system coupled with internal processes make it difficult for airlines to take advantage of the deactivated airspace.

RNAV Approaches:

- The Initial Approach Fixes (IAF) for the Area Navigation (RNAV) approaches to runway 22 at Taree and runway 03 at Port Macquarie are in close proximity. The minimum altitude for each approach is vertically separated from the other approach however the minimum altitude is rarely flown.

Aeronautical information:

- The aeronautical charts contain a number of errors and omissions. Refer to Section 4.6 for further information.

Frequency boundaries:

- The area radio frequency (Berrico 120.55) is unable to be received on the ground at Kempsey. The area radio frequency from Mt Moombil (122.6) can be received on the ground at Kempsey.

- Aircraft flying between Kempsey and Armidale can be on one of several radio frequencies. A review should be conducted of frequency boundaries to the west and to the north of Kempsey.

Surveillance:

- Radar coverage:
  Round Mountain radar was upgraded in July 2013 and provides surveillance coverage down to 1,000 ft AMSL at Port Macquarie and 5,000 ft AMSL at Taree.

- Automatic Dependant Surveillance-Broadcast (ADS-B):
  The planned introduction of an ADS-B ground station at Point Lookout will provide additional surveillance in the study area. The installation is due to be completed by the end of 2016.

Port Macquarie Shooting Complex:

- The Port Macquarie Rifle Club’s check fire procedures are cumbersome. The procedures could be streamlined to make them more efficient without compromising the safety of the aircraft using Port Macquarie aerodrome.
1.3 Findings / Conclusions

Increased traffic at Port Macquarie:
- The introduction of risk mitigators will need to occur prior to the commencement of B737 or A320 aircraft operations or the significant influx of foreign student pilots.

Frequency congestion / radio usage:
- Splitting the Port Macquarie and Taree broadcast area would fix the congestion issue; however, it may reduce the situational awareness of pilots in the area.
- Information sessions on radio etiquette and the required radio calls conducted by CASA Aviation Safety Advisors may reduce unnecessary radio calls and frequency congestion.

Additional flying training students:
- Additional English language courses, the phased introduction of foreign students at Port Macquarie and regular reviews by the flying school should ensure that frequency and airspace congestion issues are addressed before they affect airspace users.

Aerodrome infrastructure:
- A parallel taxiway at Port Macquarie to 1,200 metres is being considered by Council.
- A grass/gravel taxiway to be used by light aircraft at Kempsey may be considered in future development plans for the aerodrome.

Restricted Areas:
- The introduction of a corridor through R574 (e.g. IFR Route W768: Port Macquarie – Koala – Kanga – Lord Howe Island) is being considered.

RNAV Approaches:
- Redesigning the RNAV approaches to runway 22 at Taree and runway 03 at Port Macquarie may assist separating IFR operations.

Aeronautical information:
- Some aeronautical charts have been updated whilst others covering the same area contain errors or omissions.

Frequency boundaries:
- Preliminary investigation by Airservices of the impact of moving the frequency boundary highlights that the proposed change would create frequency transfer and situational awareness issues for aircraft arriving, departing and operating in the vicinity of Port Macquarie.

Surveillance:
- The ADS-B coverage will complement the radar surveillance and not increase the coverage.

Port Macquarie Shooting Complex:
- The Port Macquarie Rifle Club’s check fire procedures could be reviewed and updated in consultation with CASA Flying Operations Inspectors and the Port Macquarie – Hastings Council.
1.4 Recommendations

It is important to note that the study has made recommendations based on existing and projected data. CASA applies a precautionary approach when conducting aeronautical studies and therefore the following recommendations are made:

1. That the Port Macquarie aerodrome operator should consider the introduction of a Certified Air/Ground Radio Service\(^5\) (CA/GRS) prior to the commencement of B737 or A320 aircraft operations or the significant influx of foreign student pilots.

2. That the Port Macquarie – Taree broadcast area be dis-established and that the two aerodromes be given discrete CTAFs.

3. That the Port Macquarie – Hastings Council and the Kempsey Shire Council should consider constructing parallel taxiways as part of future developments to increase aerodrome efficiency.

4. Stakeholders should submit an Airspace Change Proposal for a corridor through R574 between Port Macquarie and Lord Howe Island.

5. Airservices should address the charting errors and omissions.

1.5 Next Step

Stakeholders are requested to provide feedback on the study to oar@casa.gov.au no later than 18 July 2014. CASA will consider feedback received to be public information and will normally attribute feedback, however requests to remain anonymous will be considered.

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\(^5\) Refer to Annex C for a more detailed description of the CA/GRS.
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2. Introduction

The Office of Airspace Regulation (OAR) within the Civil Aviation Safety Authority (CASA) has carriage of the regulation of Australian-administered airspace, in accordance with section 11 of the Airspace Act 2007 (Act). Section 12 of the Act requires CASA to foster both the efficient use of Australian-administered airspace and equitable access to that airspace for all users. CASA must also take into account the capacity of Australian-administered airspace to accommodate changes to its use. In exercising its powers and performing its functions, CASA must regard the safety of air navigation as the most important consideration.6

Section 3 of the Act states that ‘the object of this Act is to ensure that Australian-administered airspace is administered and used safely, taking into account the following matters:

a. Protection of the environment;
b. Efficient use of that airspace;
c. Equitable access to that airspace for all users of that airspace; and
d. Security.’

2.1 Overview of Australian Airspace

In line with the International Civil Aviation Organization (ICAO) Annex 11 and as described in the Australian Airspace Policy Statement (AAPS), Australian airspace is classified as Class A, C, D, E and G depending on the level of service required to manage traffic safely and effectively. Class B and F are not currently used in Australia. The classification determines the category of flights permitted and the level of Air Traffic Services (ATS) provided. Annex B provides details of the classes of airspace used in Australia. Within this classification system aerodromes are either controlled (i.e. Class C or Class D) or non-controlled.

Non-controlled aerodromes in Australia are subject to Common Traffic Advisory Frequency (CTAF) procedures. Pilots of aircraft operating at all registered, certified, Military and CASA designated aerodromes are required to carry and use a Very High Frequency (VHF) radio. Further information about aircraft operations at non-controlled aerodromes can be found on the CASA website:

2.2 Purpose

The purpose of this aeronautical study was to conduct a risk assessment of the airspace within 45 Nautical Miles (NM) of Port Macquarie aerodrome (here after referred to as Port Macquarie), New South Wales. The study forms part of the OAR program of work to review Australia’s airspace as required by the Act.

The outcome of the study is to demonstrate that all sensible and practicable precautions are in place to reduce the risk to acceptable levels. For the purpose of this study, a multifaceted approach was used including quantitative and qualitative analysis consisting of:

- Stakeholder interviews;
- Airspace Risk Modelling (relative modelling); and
- Site visits.

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6 Civil Aviation Act 1988, Section 9A – Performance of Functions
2.3 Scope
The scope of the study includes identification and consultation with stakeholders to gather necessary data and information related to airspace issues around Port Macquarie. As a minimum, this includes consultation with Public Transport (PT) operators, charter operators, flying training schools, Defence, emergency services operators and the aerodrome operators.

The study’s scope must also consider CASA’s responsibilities in adopting a proactive approach to assess the Australian airspace system and its operations, and to identify and pursue airspace reform opportunities. The AAPS offers clear guidance to CASA on the Government’s airspace strategy and policy, as well as processes to be followed when changing the classification or designation of particular volumes of Australian administered airspace.

The scope of this study is not intended to examine aerodrome facilities and infrastructure issues unless any weakness or failings in these areas have a significant impact on the safety of the airspace operations within the study area.

2.4 Objective
The objective of this study is to examine the airspace within 45 NM of Port Macquarie to determine the appropriateness of the current airspace classification. This was accomplished by:

a. Investigating through stakeholder consultation, the appropriateness of the current airspace classification, access issues, instrument approach design issues, expected changes to the current traffic levels and mix of aircraft operations within the existing airspace;

b. Assessing the opportunity to adopt proven international best practice airspace systems adapted to benefit Australia’s aviation environment as required by the AAPS;

c. Analysis of current and future traffic levels and mix of aircraft operations within the existing airspace in relation to the level of services provided;

d. Identifying any threats to the operations, focussing as a priority on the safety and protection of PT services;

e. Carrying out a qualitative and quantitative risk assessment of the current airspace environment and the expected impact of any changes;

f. Identifying appropriate and acceptable risk mitigators to the known threats;

g. Reviewing extant Aeronautical Information Publication entries for applicability;

h. Ensuring that the issues are passed onto the relative stakeholder group for their consideration; and

i. Providing assurance to the Executive Manager, Airspace and Aerodrome Regulation Division of the levels of airspace risk associated with operations at Port Macquarie.

The OAR issues a review of its Permanent Legislative Instruments on a bi-annual basis. Any changes to airspace determined by this study with respect to airspace classifications, air routes, prohibited, restricted or danger areas will be reflected in these Instruments.

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3. Airspace

3.1 Airspace Structure

The airspace surrounding Port Macquarie is Class G (i.e. non-controlled airspace) from the surface to 8,500 feet (ft) above mean sea level (AMSL). Class E airspace exists between 8,500 ft AMSL and Flight Level (FL) 180, while Class A airspace exists above FL180. Class C airspace steps commence at 4,500 ft AMSL, 22 NM south west of Coffs Harbour.

Port Macquarie shares a broadcast area with a number of surrounding aerodromes (Refer to Figure 1). Common Traffic Advisory Frequency (CTAF) procedures apply in this airspace. The broadcast area extends 10 NM to the north east of Port Macquarie and 10 NM to the south west of Taree aerodrome and contains the airspace encompassed by these two joined boundaries.

All of the surrounding aerodromes will not be individually addressed. However, information relevant to airspace issues or that may impact on operations at Port Macquarie have been included.

![Figure 1 – Extract of Newcastle Visual Navigation Chart (VNC) (Effective date: 30 May 2013).]
3.2 Restricted Areas

There are a number of Restricted Areas (RAs) within 45 NM of Port Macquarie. These areas support a variety of military activities and are activated when required by Notice to Airmen (NOTAM). RAs may be active from the surface (SFC) or from a nominated altitude or flight level (Refer to Figure 2).

The RA boundaries are in close proximity to the instrument approaches at Port Macquarie and Taree (refer to section 4.4).

Activation of R587B requires aircraft operating to and from Port Macquarie, Taree and Kempsey to be below FL125. R587B lies over the majority of the Port Macquarie - Taree broadcast area and is abutted by R574 to the east and R580/R587A and R583A/R587A to the south. Activation of the Williamburg RAs to the south precludes the use of direct air route W603. Aircraft operating from/to the south are required to plan via waypoint NICLA when inbound to the broadcast area and waypoint SORTI when outbound to remain clear of the active RAs.

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9 Refer to Annex C – Definitions and Explanation of Terms
3.3 Airspace Management

The airspace within 45 NM of Port Macquarie is Class G (i.e. non-controlled) from the surface to 8,500 ft AMSL, as such no Air Traffic Control (ATC) services are provided. A Flight Information Service (FIS) and traffic information service is provided by Brisbane Air Traffic Services Centre to aircraft operating under Instrument Flight Rules (IFR). Aircraft operating under Visual Flight Rules (VFR) are provided with a FIS and may receive a Surveillance Information Service (SIS) subject to ATC work load and the level of surveillance (and aircraft equipment) in the area.

Brisbane Air Traffic Services Centre provides ATC services in the overlying Class E airspace above 8,500 ft AMSL and Class A airspace above FL180 and in the Coffs Harbour Class C airspace steps.

3.4 Surveillance

Surveillance in the region is primarily provided by a radar unit located on Round Mountain. Some coverage at lower levels exists in close proximity to Port Macquarie (PMQ) with limited coverage to the south west of the aerodrome. There is no radar coverage at 1,000 ft AMSL in the vicinity of Taree (TRE) aerodrome. Radar coverage is increased at 5,000 ft AMSL with coverage extending south to the Taree area (Refer to Figures 3 and 4).

![Radar Coverage at 1,000 ft AMSL](Image1)

Figure 3 – Radar Coverage at 1,000 ft AMSL, Airservices Australia (Airservices) (April 2010).

![Radar Coverage at 5,000 ft AMSL](Image2)

Figure 4 – Radar Coverage at 5,000 ft AMSL, Airservices (April 2010).
4. Aerodromes and Instrument Approaches

4.1 Port Macquarie

Port Macquarie is a certified aerodrome owned and operated by the Port Macquarie - Hastings Council. The aerodrome is located on mid north coast of New South Wales, approximately five kilometres west of the Port Macquarie central business district and has an elevation of 12 ft AMSL. There are a number of other aerodromes within 45 NM of Port Macquarie, refer to Figure 5.

Port Macquarie has one runway, designated as 03/21. The runway has recently been extended from 1,496 metres in length to 1,800 metres. The runway has also been widened to 45 metres. Refer to Figure 6. A grass, cross runway designated as 10/28 was decommissioned in December 2012.
4.2 Port Macquarie Development

The Port Macquarie 2010 Airport Master Plan incorporates the development objective to upgrade the existing runway 03/21 to accommodate Code 4C sized aircraft (Airbus A320 and Boeing 737). Whilst no agreements have been finalised, the Port Macquarie-Hastings Council are actively looking for additional PT operators to commence services to Port Macquarie. The Council would like to see at least one additional return flight 2-3 days per week.

Three return flights a week (Airbus A320/Boeing 737 sized aircraft) would add 312 aircraft movements and approximately 48,000 passengers to Port Macquarie. Daily return flights (Airbus A320/Boeing 737 sized aircraft) would add 728 aircraft movements and approximately 112,200 passengers to Port Macquarie. An additional 112,000 passengers at Port Macquarie would require the introduction of an Aviation Rescue and Fire Fighting Service.

4.3 Other Aerodromes

A mix of certified, registered and other aerodromes lie within the study area (refer to Figure 5), they include:

- **Certified:**
  - Taree

- **Registered:**
  - Kempsey

- **Uncertified or Unregistered:**
  - Camden Haven
  - Old Bar
  - South West Rocks
  - The Lakes

**Taree**

The aerodrome is owned and operated by the Greater Taree City Council. It has two runways (refer Figure 7) and supports PT operations to Sydney and Grafton. Private and charter operations also occur with the local aero club conducting scenic flights and flight training. Taree has a number of aviation businesses manufacturing or supporting recreational aviation aircraft.
Kempsey

The aerodrome is owned and operated by the Kempsey Shire Council. It has two runways (refer Figure 8) and does not currently support PT services. Operations are largely private with the local flying club holding regular events. Kempsey also supports an aircraft maintenance business.

Kempsey aerodrome is the subject of a redevelopment plan. The Council are actively encouraging aviation and other businesses to the aerodrome. The redevelopment will see the closure of the grass cross runway (Runway 16/34) and the construction of additional hangars and taxiways. An information pack is available from the Kempsey Shire Council website:

4.4 Instrument Approaches

Port Macquarie runway 03/21 has an Area Navigation (RNAV) approach to each end and a Non-Directional Beacon (NDB) approach from the north to runway 21. Global Navigation Satellite System (GNSS) arrival procedures are also available. Taree aerodrome has one published RNAV approach from the north to runway 22 and an NDB approach from the east, not aligned with any runway. Kempsey has an RNAV and NDB approach to runway 22.

The Port Macquarie and Taree RNAV instrument approaches are in close proximity. Refer to Figure 9. The Initial Approach Fixes PMQSB and TRENE are approximately 4 NM apart. Charted altitude requirements are not below 4,100 ft AMSL and 5,100 ft AMSL respectively. The approaches satisfy the Procedures for air navigation services – aircraft operations (PANS-OPS) and Manual of Standards Part 173 instrument approach design criteria. Feedback from PT operators is that flights through the area are vertically separated from one another. Stakeholder feedback on the RNAV approaches are contained in Section 5.4 RNAV Approaches.

The over water boundary of R574 is in close proximity to the Port Macquarie and Taree approaches. Approximately 2 NM separates the Port Macquarie PMQNG Initial Approach Fix from R574. The missed approached procedure of the northern Port Macquarie RNAV approach also positions aircraft in close proximity to the boundary of R574.

Incident reports have shown occurrences of aircraft conducting missed approaches at Port Macquarie and Taree and entering R574 without a clearance, however, none have occurred within the past three years.
4.5 Airspace Users
Port Macquarie services both business and tourist travellers, supporting PT operations conducted by QantasLink and Virgin Australia Regional Airlines (formally called Skywest Airlines). A number of general aviation operators are based at Port Macquarie providing flight training, skydiving and charter services. Emergency service providers include the Royal Flying Doctors Service and the NSW Air Ambulance Service.

A Port Macquarie based flying training school (Arena International Aviation) has been awarded a contract to train up to 150 pilot cadets for an overseas airline. The influx of the additional students will have a significant impact on operations in the area.

4.6 Review of Aeronautical Information
A review of the current published aeronautical information indicated adequate representation in the majority of cases. The following comments were made in relation to aeronautical information and general charting:

- The South West Rocks airfield is incorrectly marked on the Coffs Harbour Visual Terminal Chart (VTC) and the Brisbane VNC.
- Gliding is no longer conducted at Kempsey aerodrome; therefore the gliding symbol should be removed from the Coffs Harbour VTC, the Newcastle VNC and the Brisbane VNC.
- A parachuting symbol should be added in the vicinity of the Kempsey aerodrome on the Coffs Harbour VTC, the Brisbane VNC, the Newcastle VNC and the ERC-L3 charts.
- A parachuting symbol should be added in the vicinity of the Taree aerodrome on the Newcastle VNC and the ERC-L3 charts.
5. Consultation

5.1 CASA

CASA employs Aviation Safety Advisors, Flying Operations Inspectors and Aerodrome Inspectors throughout Australia as an integral mechanism for providing safety monitoring and promotion within the industry. As part of the consultation process, offices within CASA where invited to comment on potential issues of relevance in regard to the study airspace. Feedback from the Aviation Safety Advisors and Flying Operations Inspectors has been considered during compilation of this study.

5.2 Airservices Australia (Airservices)

Interviews were conducted with the relevant air traffic staff and the following comments were made:

5.2.1 Airspace:
When RA R587B is active, aircraft are delayed on climb by approximately 5 minutes. Williamtown ATC can also release a portion of the airspace up to FL150 or FL160 which allows aircraft to continue climbing without restriction.

RA R574 is active almost every week Monday to Friday from approximately 9:00am to 6:00pm. R574 is in close proximity to the missed approach points for the Port Macquarie RNAV approach to runway 21. If an aircraft gets within 2.5 NM of the RA boundary Airservices’ ATC must advise Williamtown ATC which adds to Airservices’ ATC workload - often at a time when workload is already high due to bad weather (which is causing the missed approaches).

5.2.2 Air Routes:
Aircraft operating to Port Macquarie are routed as per the En-Route Supplement Australia (ERSA) in a racetrack pattern via NICLA (inbound) and SORTI (outbound). The IFR route W603 (direct from Williamtown) is used by aircraft inbound to Port Macquarie when the Williamtown RAs are not active. Williamtown ATC frequently offer track shortening if it is available.

5.2.3 Surveillance:
Radar coverage:
The Round Mountain radar was upgraded in July 2013 and provides surveillance coverage down to 1,000 ft AMSL at Port Macquarie and 5,000 ft AMSL south of Taree.

Automatic Dependant Surveillance-Broadcast (ADS-B):
The planned introduction of an ADS-B ground station at Point Lookout will provide additional surveillance in the study area. The ADS-B coverage will complement the radar surveillance and not increase the coverage. The installation is due to be completed by the end of 2016.

5.3 Defence

Defence reported that the airspace within 45 NM Port Macquarie reaches into a number of the Williamtown RAs. Each of these areas is used extensively for Air Combat training and training in conjunction with other Air Force and Defence elements.

It is anticipated that Defence requirements for use of the RAs within 45 NM Port
Macquarie are unlikely to change. A joint CASA-Defence Aeronautical Study of Williamtown has commenced. A draft report is expected to be released for public comment by December 2014.

5.4 Other Airspace Users

OAR representatives sought input through surveys and stakeholder interviews which were conducted at Sydney, Port Macquarie, Kempsey, Lake Cathie, Laurieton and Taree. Interviews with airline representatives, charter operators and other individuals were held. The following airspace related issues were raised:

Frequency congestion / radio usage:

- Issues with frequency congestion and over-transmission of calls between Port Macquarie and Taree traffic. Some pilots make too many additional (and unnecessary) radio transmissions. This affects operations at Port Macquarie and Taree. Aircraft on the ground at Port Macquarie cannot hear radio calls from aircraft on the ground at Taree (and vice versa).

It was suggested that a notation on the charts or in the ERSA stating that there is frequency congestion and over transmissions occur within the Port Macquarie – Taree Broadcast Area.

Splitting the Port Macquarie and Taree broadcast area would fix the congestion issue, however, it may reduce the situational awareness of pilots in the area.

- Pilots notice traffic that is either (a) not on the correct frequency or (b) that doesn’t respond to radio calls.

It was suggested that the CASA Aviation Safety Advisors should conduct information sessions on radio etiquette and the required radio calls.

- There are issues with VFR aircraft transiting from Coffs Harbour to Williamtown not being on the area or Kempsey frequency when in the vicinity of Kempsey.

English language:

- Student pilots from other areas (such as Bankstown and Cessnock) are hard to understand and do not appear to have a thorough understanding of the English language. Some students “go quiet” when a radio call is responded to. This issue may increase with the introduction of foreign students at Port Macquarie.

- Arena International Aviation’s cadets are screened prior to being accepted on the course for acceptable English language. It is noted that there are challenges with respect to English language for the cadets, this is something the school is continually monitoring.

Additional flying training students:

- The introduction of foreign students at Port Macquarie may exacerbate frequency and airspace congestion at Port Macquarie and Kempsey aerodromes. Additional infrastructure investment will be required to ensure the efficient operation of both aerodromes.

- Arena International Aviation has developed a risk mitigation plan for the introduction of their airline cadet training programs. The plan has been running since May 2014 and the procedures that have been put in place appear to be
working satisfactorily. The school has applied to CASA for an Air Operators’ Certificate variation to include Kempsey airport as a training base. The school has secured facilities there and will conduct touch-and-go circuit operations at Kempsey. This will further reduce the risk impact of training operations at Port Macquarie.

Aerodrome infrastructure:

- The lack of a full length parallel taxiway at Port Macquarie affects operations. This is resulting in multiple aircraft backtracking at the same time and occupying the runway at any one time. Some aircraft have been observed taking off from taxiway Charlie intersection on runway 21 when an aircraft is established on a straight in approach on runway 03. A grass/gravel taxiway to be used by light aircraft will reduce runway occupancy times and increase the efficiency of the aerodrome. The road built to support the trucks constructing the runway could be used by light aircraft as a taxiway. The fencing may need to be moved to accommodate the aircraft wingspan. The need for a taxiway will increase as more students are trained at Port Macquarie.

- The lack of a parallel taxiway at Kempsey aerodrome will affect operations and businesses at the aerodrome if an influx of students are conducting circuit training. Currently, aircraft must enter and back track on the runway prior to take-off (or backtrack after landing). Aircraft will be unable to enter the runway if there are aircraft conducting circuit training. A grass/gravel taxiway to be used by light aircraft will reduce runway occupancy times and increase the efficiency of the aerodrome.

Restricted Areas:

- R574 hinders operations between Port Macquarie and Lord Howe Island. R574 is an RA2 and therefore cannot be flight planned through when active. The activation of R574 requires a diversion to the north (almost to Coffs Harbour). Having a defined route through the airspace that could be flight planned (e.g. IFR Route W768: Port Macquarie – Koala – Kanga – Lord Howe Island) would assist operations and increase safety.

- The close proximity of R583A to the south of Taree affects PT operations. R583A is an RA2 and therefore cannot be flight planned through when active. Aircraft are often held at altitude and not given a clearance to descend until within 7 NM of Taree. This leaves the aircraft high on approach.

- PT operators acknowledge that RAs can be, and are, turned on and off. However, most flight plans are submitted the evening prior to the flight and the NAIPS\textsuperscript{10} system coupled with internal processes make it difficult for the airline to take advantage of the deactivated airspace.

RNAV Approaches:

- The Initial Approach Fixes for the RNAV approaches to runway 22 at Taree and runway 03 at Port Macquarie are in close proximity (Refer to Figure 9). The minimum altitude for each approach is vertically separated from the other approach however the minimum altitude is rarely flown.

\textsuperscript{10} National Aeronautical Information Processing System
• Regional Express Airlines (REX) aircraft flying to Taree from Grafton usually flightplan via the Initial Approach Fix TRONE. Aircraft occasionally hold at TRONE. As there is no published holding at TRONE, REX aircraft fly a right hand circuit. This brings the aircraft closer to the track from CALGA to the Port Macquarie Initial Approach Fix PMQSB which is flown by QantasLink and Virgin Australia Regional Airlines.

It would be beneficial if the RNAV approaches to runway 22 at Taree and runway 03 at Port Macquarie could be reviewed to increase the lateral separation between the approaches.

• Lowering Class E airspace to 4,500 ft AMSL would provide better protection of PT flights in the area. The availability of appropriate surveillance in the region, Air Traffic Controller workload and available workstations may prevent a service being provided.

Frequency boundaries:
• The area radio frequency (Berrico 120.55) is unable to be received on the ground at Kempsey. The area radio frequency from Mt Moombil (122.6) can be received on the ground at Kempsey.

It would be beneficial if the area frequency boundary near Kempsey was moved from 36 Distance Measuring Equipment (DME) Coffs Harbour to 65 DME Coffs Harbour. This would align the area frequency with the Class E frequency boundary to the south of Kempsey and make the charts less confusing.

• Aircraft flying between Kempsey and Armidale can be on one of several radio frequencies. A review should be conducted of frequency boundaries to the West and to the North of Kempsey.

[CASA Comment: Preliminary investigation by Airservices of the impact of moving the frequency boundary highlights that the proposed change would:

• locate the frequency boundary immediately north of Port Macquarie, which would create frequency transfer and situational awareness issues for aircraft arriving, departing and operating in the vicinity of Port Macquarie;

• result in increased air traffic controller workload for the overlying sector and necessitate a review of existing boundaries for adjacent sectors. This is a significant body of work, with seemingly marginal benefit to airspace users; and

• not fully resolve frequency issues on the Kempsey-Armidale track.

While some advantages may accrue to operators at Kempsey in relation to the proposal, these are outweighed by the consequential issues outlined above.]

Port Macquarie Shooting Complex:
The Port Macquarie Rifle Club operate from the range off the south eastern end of the Port Macquarie aerodrome (refer to Figure 10). The Port Macquarie Rifle Club has been operating since 1888 and from the current site since 1902.

• The Port Macquarie Rifle Club has strict cease fire (check fire) procedures in place to prevent aircraft from being hit by stray bullets. The check fire
procedures include promulgating a NOTAM and having direct contact with Port Macquarie Airport Duty Officer.

The check fire procedures are cumbersome and could be streamlined to make them more efficient without compromising the safety of the aircraft using Port Macquarie aerodrome.

Figure 10: Port Macquarie aerodrome and Port Macquarie Rifle Club.

6. Traffic Data

To make an accurate evaluation of the airspace it is important that all reasonable precautions have been taken to ensure that the data being reviewed is correct and reliable. Data for this study has been gathered from a number of sources. These sources include, but are not limited to:

- Airservices;
- Airspace users;
- The Australian Transport Safety Bureau (ATSB);
- The Bureau of Infrastructure, Transport and Regional Economics (BITRE);
- Aeronautical Information Publications; and
- Airline schedules.

6.1 Airservices Airspace Research Application (ARA)

Airservices ARA database was developed to enhance their situational awareness of traffic at aerodromes throughout Australia and identify locations of interest that may trigger further research. CASA obtains ARA data from Airservices to assist in the analysis of collision risk at aerodromes that are under review. Annex D contains ARA data for Port Macquarie.

ARA data consists of aircraft movements, passenger numbers and aircraft incidents from sources such as Avdata Australia (Avdata), ATSB, Electronic Safety Incident
Reports (ESIRs), submitted flight plans and location specific intelligence reports. The following ARA traffic reports were sourced from Airservices:

a. **Trigger Criteria Summary Report** – records total aircraft movements, air transport movements (aircraft with a maximum takeoff weight of two tonnes or above) and passenger numbers at all aerodromes in Australia over a 12 month period. An aerodrome is flagged if, for the 12 month period:
   i. total passenger numbers exceed 250,000;
   ii. total aircraft movements exceed 50,000; or
   iii. total air transport movements exceed 10,000.

b. **Aircraft Types by Port** – This report identifies aircraft by type arriving and departing from the port during a selected period.\(^{11}\) The data is used to estimate the proportion of aircraft types that are utilising an aerodrome.
   This report is also used to identify VFR and IFR traffic by analysing the aircraft seating capacity and the number of movements per aircraft type. Generally all rotary winged aircraft are considered to be VFR traffic as well as aircraft that have approximately three or less seating capacity.

c. **Data Validation Reports** – This report is used to validate the trigger report; identify the number of circuits flown per annum and add VFR traffic.

### 6.2 Bureau of Infrastructure, Transport and Regional Economics

BITRE data consists of international, domestic and regional PT services. It is important to note that it does not include charter or other non-scheduled activity.

### 6.3 Airservices Data Analysis

Airservices has accurate aircraft movement and passenger numbers for Port Macquarie through a combination of IFR flight planning data and an external service provider (Avdata). Total aircraft movements for Port Macquarie for the 12 month period ending December 2013 were 26,063 which included 9,212 air transport movements. During the same period, the aerodrome serviced 249,712 passengers.

Figure 11 (derived from Airservices’ data, refer to section 6.1) depicts total aircraft movements, air transport movements and passenger numbers for Port Macquarie for the 12 month reporting periods ending December 2008 to December 2013.

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\(^{11}\) This data is extracted from the aircraft register database (maintained by CASA) using the aircraft callsign only, therefore there may be some inaccuracies.
The Airservices data indicates:

- Air transport movement numbers have fluctuated, resulting in a decrease over the period.
- Total movement numbers have increased by approximately 10% per annum between 2009 and 2012. VFR movements (including circuit traffic) accounted for the majority of the increase. An 8.5% decrease in total movements occurred during 2013.
- Passenger numbers have increased during the period. An increase of approximately 25% over the period has been realised.

The historical data and comments from local aircraft operators indicate movement numbers at Port Macquarie are likely to continue to increase at a rate of approximately 5% per annum.

**Other Aerodromes – Aircraft Movements**

Airservices provided movement data for the period 01 January 2011 to 31 December 2013 for Taree and Kempsey. Data was sourced from the aerodrome operators for the uncertified or unregistered aerodromes.

The movement data indicates:

- Traffic and passenger numbers at Taree and Kempsey have remained static over the past three years.
- The introduction of foreign students conducting circuit training at Kempsey will significantly increase the traffic volume at the aerodrome.
- Skydiving at Kempsey occurs once a month and is expected to become more frequent.
- Aircraft are being encouraged to relocate to the Camden Haven airfield from Port Macquarie. Movements at the airfield will increase as more aircraft are relocated.
Port Macquarie Airspace Usage

Flight planning data was requested from Airservices to aid in the study of the airspace around Port Macquarie. The data only captures flights for which the pilot/operator submitted a flight plan.

Information provided by Airservices and other stakeholders indicates the following:

- Traffic on the busiest route (between Port Macquarie and Sydney) has increased by approximately 4% from 2010.
- As mentioned in Section 4.5, a Port Macquarie based flying training school has been awarded a contract to train up to 150 pilot cadets for an overseas airline. The influx of the additional students will have a significant impact on operations in the area. The school has indicated that the circuit training for the international students will be conducted at Kempsey aerodrome. The flow of traffic between the two aerodromes may create additional issues.
- Parachute operations at Kempsey may conflict with proposed circuit training of international students.

7. Incident and Accident Data

7.1 Aviation Safety Incident Reports (ASIRs)

All accidents and incidents involving Australian registered aircraft, or foreign aircraft in Australian airspace must be reported to the ATSB. The ATSB receives incident information via pilot reports, Airservices’ ESIRs and the Royal Australian Air Forces’ Aircraft Safety Occurrence Reports. The ATSB maintains its own database, the Safety Investigation Information Management System (SIIMS), in which all reported occurrences are logged, assessed, classified and recorded.

The information contained within SIIMS is dynamic and subject to change based on additional and/or updated data. Each individual report is known as an ASIR and for identification purposes is allocated its own serial number.

During the period 01 July 2011 to 30 June 2013, 121 ASIRs were submitted to the ATSB for the area within 45 NM of Port Macquarie. Of those 121 incidents 28 were deemed to be related to airspace, see Table 2 for break down and Figure 12 for incident locations.

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<tr>
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Table 2: ASIRs at Port Macquarie (01 July 2011 to 30 June 2013)

The majority of the controlled airspace infringement incidents involved VFR aircraft entering the Class C airspace south of Coffs Harbour whilst two incidents were related to entry into Class A airspace without a clearance. The single RA infringement incident involved an IFR aircraft entering R574 without a clearance. Six
aircraft separation incidents were reported. All incidents occurred in the Class G airspace. Five of the incidents occurred in the vicinity of Port Macquarie and one occurred in the vicinity of Taree.

Of the 14 failure to comply with ATS instructions or procedures incidents, the majority of incidents related to aircraft failing to comply with clearances related to altitude and tracking requirements. The single TCAS RA incident involved an aircraft holding and an aircraft departing Port Macquarie. Both aircraft were in Instrument Meteorological Conditions (IMC). An ATSB investigation is underway.

Figure 12 – Port Macquarie area ASIRs – 01 July 2011 to 30 June 2013.

7.2 Incident Reports Summary

There were no trends observed during the analysis of the reported incidents.

8. Airspace Reform

As required by the AAPS, this review takes into account the Government’s requirement that CASA will continue the reform of Australia’s airspace and move towards closer alignment with the ICAO system and adoption of international best practice. This includes adopting proven international airspace systems adapted to benefit Australia’s aviation environment.

Paragraph 8 of the AAPS states: ‘The administration of Australian-administered airspace:

- shall be in the best interests of Australia;
- shall consider the current and future needs of the Australian aviation industry;
- shall adopt proven international best practice airspace systems adapted to benefit Australia’s aviation environment; and
- shall take advantage of advances in technology wherever practicable.’
This study takes into account the Government’s requirement that CASA will continue the reform of Australia’s airspace and move towards closer alignment with the ICAO system, and the adoption of international best practice. This includes the adopting of proven international airspace systems adapted to benefit Australia’s aviation environment.

8.1 International Comparison

There are a limited number of aerodromes in the United States (US) that cater for a similar passenger/aircraft movement ratio to Port Macquarie. According to the US Federal Aviation Administration (FAA) data\(^\text{12}\) for the 2012 calendar year, airports with passenger and/or aircraft movement numbers nearest to the Port Macquarie figures include:

- La Crosse Municipal (LSE); and
- Waco Regional (ACT).

La Crosse Municipal Airport:

- La Crosse Municipal recorded approximately 194,000 passengers and 22,800 aircraft movements for the 2012 calendar year. In comparison, for the 12 months prior to December 2012 Port Macquarie recorded approximately 258,100 passengers and 27,500 aircraft movements.
- La Crosse Municipal has a higher percentage of IFR to VFR traffic than Port Macquarie.
- La Crosse Municipal is a Class D (i.e. towered) aerodrome encompassed by Class E airspace (See Figure 13).
- Class D airspace exists from surface to 3,200 ft AMSL and Class E airspace commences from 700 ft above ground level (AGL).
- The aerodrome has three runways.
- Winona Municipal-Max Conrad Field airport (non-controlled) is located approximately 24 NM north-west of La Crosse Municipal. A similar distance separates Port Macquarie and Taree.
- A number of other aerodromes are situated within 45 NM of La Crosse Municipal. The majority are non-controlled with a small number of other Class D aerodromes in the area.

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Waco Regional Airport:

- Waco Regional recorded approximately 120,000 passengers and 35,082 aircraft movements for the 2012 calendar year. In comparison, for the 12 months prior to December 2012 Port Macquarie recorded approximately 258,100 passengers and 27,500 aircraft movements. Movement numbers across flight categories (VFR and IFR) were similar to Port Macquarie, indicating the operation of lower capacity aircraft at Waco Regional.
- Waco Regional is a Class D (i.e. towered) aerodrome encompassed by Class E airspace (See Figure 14).
- Class D airspace exists from surface to 3,000 ft AMSL and Class E airspace commences from 700 ft AGL.
- The aerodrome has two runways.
- Texas State Technical College Waco airport is located approximately 8 NM east of Waco Regional. It has a Class D control tower and accommodates approximately 35,000 movements per annum. Waco Regional and Texas State Technical College Waco each have a separate control tower and discrete frequency.
- A number of other aerodromes are situated within 45 NM of Waco Regional, the majority are non-controlled.
8.2 Conclusion

All countries utilise different approaches to determining tolerable risk and cost-benefit comparisons when classifying terminal area airspace. Europe and Australia establish parameters based on probability of fatalities, the USA utilises a complex cost-benefit process that assumes a collision probability based on traffic levels. No country has defined hard criteria for airspace classification.

In each case, judgements are made based on the unique societal expectations within the country and legislative requirements. Classification decisions based on practices in other countries must take into account differences in these criteria.

Comparing Port Macquarie to aerodromes in the US that support a similar number of passengers and/or aircraft movements indicates that if the US airspace system were adopted Port Macquarie would likely be a Class D aerodrome (i.e. towered).
9. Airspace Risk and Other Airspace Matters

Section 3 of the Act states that ‘the object of this Act is to ensure that Australian-administered airspace is administered and used safely, taking into account the following matters:

a. Protection of the environment;
b. Efficient use of that airspace;
c. Equitable access to that airspace for all users of that airspace; and
d. National security’.

This section addresses the requirements of Section 3 of the Act.

Summary of Movement Data

A number of data sources were accessed for the assessment. These include:

- BITRE;
- Airservices;
- AvData; and
- The Port Macquarie aerodrome operator.

Port Macquarie currently supports over 249,700 passengers annually equating to approximately 26,063 aircraft movements. These figures are slightly down on the previous 12 months (258,100 and 27,569 respectively).

Based on past growth, the aerodrome operator predicts the number of passengers to increase by approximately 3% each year and movement numbers to increase approximately 5% each year. A brief summary of the estimated traffic mix utilising Airservices’ ARA data at Port Macquarie is shown in Table 3.

The traffic has been broken down into the following categories:

Key:
- VFR including gliders and helicopters
- IFR (L) = IFR Low with less than 10 passengers
- IFR (M) = IFR Medium with 10 to 38 passengers
- IFR (H) = IFR High with more than 38 passengers

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<td>18.55 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

Table 3: Traffic mix for Port Macquarie

Future Growth

Although it is difficult to accurately predict and model future traffic levels this study has considered five scenarios over a two year period:

1. Total movement numbers continue to increase at an average growth rate of approximately 5% per annum (p.a.).
2. Total movement numbers continue to increase at an average growth rate of approximately 5% p.a. plus a step change in movements consistent with the
addition of four Code 4C aircraft (Airbus A320 or Boeing 737) movements per day (assumes one daily return service by both major airlines).

3. Total movement numbers continue to increase at an average growth rate of approximately 5% p.a. plus an increase of 30 additional flying training students.

4. Total movement numbers continue to increase at an average growth rate of approximately 5% p.a. plus an increase of 150 additional flying training students.

5. Total movement numbers continue to increase at an average growth rate of approximately 5% p.a. plus a step change in movements consistent with the addition of four Code 4C aircraft (Airbus A320 or Boeing 737) movements per day plus an increase of 30 additional flying training students.

The introduction of daily Airbus A320 or Boeing 737 aircraft resulted in a significant increase in risk indicating that the introduction of mitigators to lower the risk is appropriate. The introduction of additional flying training students also increased the risk of conflicts. It is unlikely that more than 30 student pilots will be trained per year within the next four years.

9.1 Airspace Risk Mitigation

The increased conflict risk to the travelling public brought on by the introduction of daily Airbus A320 and Boeing 737 aircraft should be addressed. An appropriate risk mitigator would be the establishment of a Certified Air/Ground Radio Service (CA/GRS), or an Aerodrome Flight Information Service (AFIS).

Description of a CA/GRS and AFIS

A CA/GRS is a non-controlled aerodrome based third-party radio information service. Third-party entities that wish to provide the CA/GRS service must be certified by CASA under Civil Aviation Safety Regulation (CASR) Part 139. The primary purpose of a CA/GRS is to enhance the safety of air transport aircraft operations at a particular non-controlled aerodrome by the provision of relevant traffic information. Refer to Annex C for additional information.

An AFIS is the term used to describe the provision of information useful for the safe and efficient conduct of aerodrome traffic at those aerodromes where the provision of an aerodrome control service is not justified, or is not justified on a 24-hour basis. Refer to Annex C for additional information.

The provision of either a CA/GRS (or an AFIS) will reduce the risk to aircraft operations at Port Macquarie in the short term. The primary purpose of a CA/GRS (or AFIS) is to enhance the safety of air transport aircraft operations at a particular non-controlled aerodrome by the provision of relevant traffic information. These services assist pilots to understand operational activities at the aerodrome.

Kempsey aerodrome

The airspace at Kempsey was modelled to evaluate the effect of ab initio pilots from Port Macquarie using the aerodrome to conduct circuit training. Due to the low number of movements at Kempsey, the risk was shown to be acceptable.

13 Refer to Annex C – Definitions and Explanation of Terms.
9.2 Environment
The Port Macquarie airspace was reviewed to consider if there are current adverse aircraft environment impacts associated with:

- Noise;
- Gaseous emissions;
- Interactions with birds and wildlife; and
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) items.

Should an Airspace Change Proposal be lodged as an outcome of this aeronautical study that results in changes in aircraft traffic patterns and procedures, the above environment issues will require assessment.

*Noise*
Aircraft noise issues would not be related to the current Port Macquarie airspace design.

*Gaseous emissions*
Aircraft fuel efficiency and associated gaseous emissions are not influenced by the current airspace design.

*Bird and wildlife aircraft interactions and EPBC issues*
There are no negative ecological bird and wildlife interactions or EPBC issues resulting from the current airspace design.

9.3 Efficient use of the airspace
According to feedback, the airspace in the vicinity of Port Macquarie becomes busy at times. Some stakeholders consider the airspace to be inefficient with frequency congestion a primary contributor.

9.4 Equitable Access
The current Class G airspace classification surrounding Port Macquarie provides equitable access to the airspace for all stakeholders. The activation of the RAs located to the south and east of Port Macquarie result in additional flight planning requirements.

The provision of either a CA/GRS (or an AFIS) would not restrict access to the airspace by general aviation or recreational aviation aircraft. The introduction of an ATC service will affect the ability of Recreational Aviation Australia (RA-Aus) registered aircraft to access the airspace.

10. Summary of Issues
The key issues raised by airspace users during the generative interviews have been categorised as follows:

**Increased traffic at Port Macquarie:**
- Air traffic at Port Macquarie has been increasing at approximately 5% per annum since 2009, however there was an 8.5% decrease in traffic in 2013.
- The aerodrome at Port Macquarie has completed an upgrade to allow larger aircraft to service the area. The Council is actively looking for additional PT operators to commence services to Port Macquarie. The Council would like to see at least one return flight 2-3 days per week added to the current PT schedule. The additional flights will change the mix of traffic at the aerodrome.
Frequency congestion / radio usage:
- Issues with frequency congestion and over-transmission of calls between Port Macquarie and Taree traffic. This affects operations at Port Macquarie and Taree.
  
  Aircraft on the ground at Port Macquarie cannot hear radio calls from aircraft on the ground at Taree (and vice versa).
- Pilots notice traffic that is either (a) not on the correct frequency or (b) that doesn’t respond to radio calls.
- There are issues with VFR aircraft transiting from Coffs Harbour to Williamtown not being on the area or Kempsey frequency when in the vicinity of Kempsey.

English language:
- Student pilots from other areas (such as Bankstown and Cessnock) are hard to understand and do not appear to have a thorough understanding of the English language. Some students “go quiet” when a radio call is responded to. This issue may increase with the introduction of foreign students at Port Macquarie.

Additional flying training students:
- The introduction of foreign students at Port Macquarie may exacerbate frequency and airspace congestion at Port Macquarie and Kempsey aerodromes.

Aerodrome infrastructure:
- The lack of a full length parallel taxiway at Port Macquarie affects operations. A grass/gravel taxiway to be used by light aircraft will reduce runway occupancy times and increase the efficiency of the aerodrome. The need for a taxiway will increase as more students are trained at Port Macquarie.
- The lack of a parallel taxiway at Kempsey aerodrome will affect operations and businesses at the aerodrome if an influx of students are conducting circuit training. A grass/gravel taxiway to be used by light aircraft will reduce runway occupancy times and increase the efficiency of the aerodrome.

Restricted Areas:
- R574 hinders operations between Port Macquarie and Lord Howe Island. The activation of R574 requires a diversion to the north (almost to Coffs Harbour). Having a defined route through the airspace that could be flight planned would assist operations and increase safety.
- The close proximity of R583A to the south of Taree affects PT operations. Aircraft are often held at altitude and not given a clearance to descend until within 7 NM of Taree. This leaves the aircraft high on approach.
- When R587B is active, aircraft are delayed on climb by approximately five minutes.
- R574 is in close proximity to the missed approach points for the Port Macquarie RNAV approach to runway 21. If an aircraft gets within 2.5 NM of the RA boundary Airservices’ ATC must advise Defence ATC at Williamtown which adds to Airservices’ ATC workload - often at a time when workload is already high due to bad weather (which is causing the missed approaches).
- RAs can be, and are, activated and deactivated as required. However, most PT flight plans are submitted the evening prior to the flight and the NAIPS\textsuperscript{14} system coupled with internal processes make it difficult for airlines to take advantage of the deactivated airspace.

RNNAV Approaches:
- The IAF for the RNNAV approaches to runway 22 at Taree and runway 03 at Port Macquarie are in close proximity. The minimum altitude for each approach is vertically separated from the other approach however the minimum altitude is rarely flown.

Aeronautical information:
- The aeronautical charts contain a number of errors and omissions.

Frequency boundaries:
- The area radio frequency (Berrico 120.55) is unable to be received on the ground at Kempsey. The area radio frequency from Mt Moombil (122.6) can be received on the ground at Kempsey.
- Aircraft flying between Kempsey and Armidale can be on one of several radio frequencies. A review should be conducted of frequency boundaries to the west and to the north of Kempsey.

Surveillance:
- Radar coverage:
  Round Mountain radar was upgraded in July 2013 and provides surveillance coverage down to 1,000 ft AMSL at Port Macquarie and 5,000 ft AMSL at Taree.
- ADS-B:
  The planned introduction of an ADS-B ground station at Point Lookout will provide additional surveillance in the study area. The installation is due to be completed by the end of 2016.

Port Macquarie Shooting Complex:
- The Port Macquarie Rifle Club’s check fire procedures are cumbersome. The procedures could be streamlined to make them more efficient without compromising the safety of the aircraft using Port Macquarie aerodrome.

11. Findings and Conclusions

Increased traffic at Port Macquarie:
- The introduction of risk mitigators will need to occur prior to the commencement of B737 or A320 aircraft operations or the significant influx of foreign student pilots.

Frequency congestion / radio usage:
- Splitting the Port Macquarie and Taree broadcast area would fix the congestion issue; however, it may reduce the situational awareness of pilots in the area.

\textsuperscript{14} National Aeronautical Information Processing System
• Information sessions on radio etiquette and the required radio calls conducted by CASA Aviation Safety Advisors may reduce unnecessary radio calls and frequency congestion.

Additional flying training students:
• Additional English language courses, the phased introduction of foreign students at Port Macquarie and regular reviews by the flying school should ensure that frequency and airspace congestion issues are addressed before they affect airspace users.

Aerodrome infrastructure:
• A parallel taxiway at Port Macquarie to 1,200 metres is being considered by Council.
• A grass/gravel taxiway to be used by light aircraft at Kempsey may be considered in future development plans for the aerodrome.

Restricted Areas:
• The introduction of a corridor through R574 (e.g. IFR Route W768: Port Macquarie – Koala – Kanga – Lord Howe Island) is being considered.

RNAV Approaches:
• Redesigning the RNAV approaches to runway 22 at Taree and runway 03 at Port Macquarie may assist separating IFR operations.

Aeronautical information:
• Some aeronautical charts have been updated whilst others covering the same area contain errors or omissions.

Frequency boundaries:
• Preliminary investigation by Airservices of the impact of moving the frequency boundary highlights that the proposed change would create frequency transfer and situational awareness issues for aircraft arriving, departing and operating in the vicinity of Port Macquarie.

Surveillance:
• The ADS-B coverage will complement the radar surveillance and not increase the coverage.

Port Macquarie Shooting Complex:
• The Port Macquarie Rifle Club’s check fire procedures could be reviewed and updated in consultation with CASA Flying Operations Inspectors and the Port Macquarie – Hastings Council.
12. **Recommendations**

It is important to note that the study has made recommendations based on existing and projected data. CASA applies a precautionary approach when conducting aeronautical studies and therefore the following recommendations are made:

1. That the Port Macquarie aerodrome operator should consider the introduction of a Certified Air/Ground Radio Service\(^\text{15}\) (CA/GRS) prior to the commencement of B737 or A320 aircraft operations or the significant influx of foreign student pilots.

2. That the Port Macquarie – Taree broadcast area be dis-established and that the two aerodromes be given discrete CTAFs.

3. That the Port Macquarie – Hastings Council and the Kempsey Shire Council should consider constructing parallel taxiways as part of future developments to increase aerodrome efficiency.

4. Stakeholders should submit an Airspace Change Proposal for a corridor through R574 between Port Macquarie and Lord Howe Island.

5. Airservices should address the charting errors and omissions.

13. **Next Step**

Stakeholders are requested to provide feedback on the study to oar@casa.gov.au no later than 18 July 2014. CASA will consider feedback received to be public information and will normally attribute feedback, however requests to remain anonymous will be considered.

\(^{15}\) Refer to Annex C for a more detailed description of the CA/GRS.
14. References


- Airspace Act, 2007

- Airspace Regulations


- Operations at non-towered aerodromes booklet (CASA)

- Aeronautical Information Publication – effective 30 May 2013.

- En Route Supplement Australia – effective 30 May 2013.

- En Route Chart Low 3 – effective 30 May 2013.


- SkyVector Aeronautical Charts: http://skyvector.com/

- Federal Aviation Administration, Passenger Boarding and All-Cargo Data for U.S. Airports:
  http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/

- Federal Aviation Administration, Air Traffic Activity System (ATADS) – Airport Operations:
  http://aspm.faa.gov/opanet/sys/Airport.asp

- Port Macquarie Airport Master Plan 2010

- Kempsey Airport Redevelopment 2013

Annexes:

ANNEX A – Abbreviations

ANNEX B – Australian Airspace Structure

ANNEX C – Definitions and Explanation of Terms

ANNEX D – Stakeholders invited to provide input
## ANNEX A – Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAPS</td>
<td>Australian Airspace Policy Statement 2012</td>
</tr>
<tr>
<td>Act</td>
<td>Airspace Act 2007</td>
</tr>
<tr>
<td>ADS-B</td>
<td>Automatic Dependant Surveillance Broadcast system</td>
</tr>
<tr>
<td>AFRU</td>
<td>Aerodrome Frequency Response Unit</td>
</tr>
<tr>
<td>AGL</td>
<td>Above Ground Level</td>
</tr>
<tr>
<td>AI</td>
<td>Airspace Infringement (previously known as Violation of Controlled Airspace)</td>
</tr>
<tr>
<td>AMSL</td>
<td>Above Mean Sea Level</td>
</tr>
<tr>
<td>AOPA</td>
<td>Aircraft Owners and Pilots Association</td>
</tr>
<tr>
<td>ARA</td>
<td>Airspace Research Application</td>
</tr>
<tr>
<td>ARM</td>
<td>Airspace Risk Model</td>
</tr>
<tr>
<td>ASIR</td>
<td>Aviation Safety Incident Report (recorded by ATSB)</td>
</tr>
<tr>
<td>ATC</td>
<td>Air Traffic Control</td>
</tr>
<tr>
<td>ATI</td>
<td>Air Transport Inspector</td>
</tr>
<tr>
<td>ATS</td>
<td>Air Traffic Service</td>
</tr>
<tr>
<td>ATSB</td>
<td>Australian Transport Safety Bureau</td>
</tr>
<tr>
<td>AusFIC</td>
<td>Australian Flight Information Centre</td>
</tr>
<tr>
<td>Avdata</td>
<td>Avdata Australia (aviation movement data provider)</td>
</tr>
<tr>
<td>AWIS</td>
<td>Automatic Weather Information Service</td>
</tr>
<tr>
<td>BoM</td>
<td>Bureau of Meteorology</td>
</tr>
<tr>
<td>BITRE</td>
<td>Bureau of Infrastructure, Transport and Regional Economics</td>
</tr>
<tr>
<td>CAR</td>
<td>Civil Aviation Regulation 1988</td>
</tr>
<tr>
<td>CASA</td>
<td>Civil Aviation Safety Authority</td>
</tr>
<tr>
<td>CASR</td>
<td>Civil Aviation Safety Regulation 1998</td>
</tr>
<tr>
<td>CTAF</td>
<td>Common Traffic Advisory Frequency</td>
</tr>
<tr>
<td>CTR</td>
<td>Control Zone</td>
</tr>
<tr>
<td>DAP</td>
<td>Departure and Approach Procedures</td>
</tr>
<tr>
<td>Defence</td>
<td>Department of Defence</td>
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<tr>
<td>DME</td>
<td>Distance Measuring Equipment</td>
</tr>
<tr>
<td>EPBC Act</td>
<td>Environment Protection and Biodiversity Conservation Act 1999</td>
</tr>
<tr>
<td>ERC</td>
<td>En-Route Chart</td>
</tr>
<tr>
<td>ERSA</td>
<td>En-Route Supplement Australia</td>
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<td>ESIR</td>
<td>Electronic Safety Incident Report (recorded by Airservices)</td>
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<td>FAA</td>
<td>Federal Aviation Administration</td>
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<td>FIA</td>
<td>Flight Information Area</td>
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<td>Flight Information Service</td>
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<td>FL</td>
<td>Flight Level</td>
</tr>
<tr>
<td>FNA</td>
<td>Fly Neighbourly Advice</td>
</tr>
<tr>
<td>FN-Curve</td>
<td>Frequency / Severity Risk curve</td>
</tr>
<tr>
<td>ft</td>
<td>feet</td>
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<tr>
<td>HF</td>
<td>High Frequency</td>
</tr>
<tr>
<td>HLS</td>
<td>Helicopter Landing Site</td>
</tr>
<tr>
<td>IAS</td>
<td>Indicated Air Speed</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IFR</td>
<td>Instrument Flight Rules</td>
</tr>
<tr>
<td>IFR (H)</td>
<td>IFR High – more than 38 passengers</td>
</tr>
<tr>
<td>IFR (L)</td>
<td>IFR Low – less than 10 passengers</td>
</tr>
<tr>
<td>IFR (M)</td>
<td>IFR Medium – between 10 and 38 passengers</td>
</tr>
<tr>
<td>IMC</td>
<td>Instrument Meteorological Conditions</td>
</tr>
<tr>
<td>m</td>
<td>metre(s)</td>
</tr>
<tr>
<td>MBZ</td>
<td>Mandatory Broadcast Zone</td>
</tr>
<tr>
<td>MOS</td>
<td>Manual of Standards</td>
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<tr>
<td>NAIIPS</td>
<td>National Aeronautical Information Processing System</td>
</tr>
<tr>
<td>NDB</td>
<td>Non-Directional Beacon (navigation aid)</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Explanation</td>
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<tr>
<td>--------------</td>
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</tr>
<tr>
<td>NM</td>
<td>Nautical Miles</td>
</tr>
<tr>
<td>NOTAM</td>
<td>Notice to Airmen</td>
</tr>
<tr>
<td>NPRM</td>
<td>Notice of Proposed Rule Making</td>
</tr>
<tr>
<td>OAR</td>
<td>Office of Airspace Regulation</td>
</tr>
<tr>
<td>p.a.</td>
<td>per annum</td>
</tr>
<tr>
<td>PAPI</td>
<td>Precision Approach Path Indicator</td>
</tr>
<tr>
<td>PT</td>
<td>Passenger Transport</td>
</tr>
<tr>
<td>QNH</td>
<td>An altimeter sub-scale to obtain local elevation or altitude</td>
</tr>
<tr>
<td>RA</td>
<td>Restricted Area</td>
</tr>
<tr>
<td>RA-Aus</td>
<td>Recreational Aviation Australia</td>
</tr>
<tr>
<td>RAAA</td>
<td>Regional Aviation Association of Australia</td>
</tr>
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<td>RAAF</td>
<td>Royal Australian Air Force</td>
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<tr>
<td>RNAV</td>
<td>Area Navigation</td>
</tr>
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<td>RPT</td>
<td>Regular Public Transport</td>
</tr>
<tr>
<td>SFC</td>
<td>Surface</td>
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<tr>
<td>SIIMS</td>
<td>Safety Investigation Information Management System</td>
</tr>
<tr>
<td>SIGMET</td>
<td>Significant Meteorological Information</td>
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<tr>
<td>SIS</td>
<td>Surveillance Information Service</td>
</tr>
<tr>
<td>SREP</td>
<td>Strategic Radar Enhancement Project</td>
</tr>
<tr>
<td>TAF</td>
<td>Aerodrome Forecast</td>
</tr>
<tr>
<td>TCAS</td>
<td>Traffic Alert and Collision Avoidance System (a proprietary term used in lieu of ACAS)</td>
</tr>
<tr>
<td>US</td>
<td>United States</td>
</tr>
<tr>
<td>VCA</td>
<td>Violation of Controlled Airspace (now known as an Airspace Infringement)</td>
</tr>
<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
</tr>
<tr>
<td>VHF</td>
<td>Very High Frequency</td>
</tr>
<tr>
<td>VMC</td>
<td>Visual Meteorological Conditions</td>
</tr>
<tr>
<td>WAC</td>
<td>World Aeronautical Chart</td>
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</table>
## ANNEX B – Australian Airspace Structure

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
<th>Summary of Services/Procedures/Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>All airspace above Flight Level (FL) 180 (east coast) or FL 245</td>
<td>- Instrument Flight Rules (IFR) only. All aircraft require a clearance from Air Traffic Control (ATC) and are separated by ATC. Continuous two-way radio and transponder required. No speed limitation.</td>
</tr>
<tr>
<td>B</td>
<td>Not currently used in Australia. May be used in control zones (CTRs) of defined dimensions and control area steps generally associated with major capital city controlled aerodromes.</td>
<td>- IFR and Visual Flight Rules (VFR) flights only. All aircraft require a clearance from ATC and are separated by ATC. Continuous two-way radio and transponder required.</td>
</tr>
<tr>
<td>C</td>
<td>In control zones (CTRs) of defined dimensions and control area steps generally associated with controlled aerodromes</td>
<td>- All aircraft require a clearance from ATC to enter airspace. All aircraft require continuous two-way radio and transponder. - IFR separated from IFR, Visual Flight Rules (VFR) and Special VFR (SVFR) by ATC with no speed limitation for IFR operations. - VFR receives traffic information on other VFR but are not separated from each other by ATC. SVFR are separated from SVFR when visibility (VIS) is less than Visual Meteorological Conditions (VMC). - VFR and SVFR speed limited to 250 knots (kt) Indicated Air Speed (IAS) below 10,000 feet (ft) Above Mean Sea Level (AMSL)*.</td>
</tr>
<tr>
<td>D</td>
<td>Towered locations such as Bankstown, Jandakot, Archerfield, Parafield and Alice Springs.</td>
<td>- All aircraft require a clearance from ATC to enter airspace. For VFR flights this may be in an abbreviated form. As in Class C airspace all aircraft are separated on takeoff and landing. All aircraft require continuous two-way radio and are speed limited to 200 kt IAS at or below 2,500 ft within 4 NM of the primary Class D aerodrome and 250 kt IAS in the remaining Class D airspace. - IFR are separated from IFR, SVFR, and are provided with traffic information on all VFR. - VFR receives traffic on all other aircraft but are not separated by ATC. - SVFR are separated from SVFR when VIS is less than VMC.</td>
</tr>
<tr>
<td>E</td>
<td>Controlled airspace not covered in classifications above</td>
<td>- All aircraft require continuous two-way radio and transponder. All aircraft are speed limited to 250 kt IAS below 10,000 ft AMSL*. - IFR require a clearance from ATC to enter airspace and are separated from IFR by ATC, and provided with traffic information as far as practicable on VFR. - VFR do not require a clearance from ATC to enter airspace and are provided with a Flight Information Service (FIS). On request and ATC workload permitting, a Surveillance Information Service (SIS) is available within surveillance coverage.</td>
</tr>
<tr>
<td>F</td>
<td>Not currently used in Australia.</td>
<td>- Clearance from ATC to enter airspace not required. - All aircraft are speed limited to 250 kt IAS below 10,000 ft AMSL*. - IFR require continuous two-way radio and receive a FIS, including traffic information on other IFR. - VFR receive a FIS. On request and ATC workload permitting, a SIS is available within surveillance coverage. VHF radio required above 5,000 ft AMSL and at aerodromes where carriage and use of radio is required.</td>
</tr>
<tr>
<td>G</td>
<td>Non-controlled</td>
<td>- Not applicable to military aircraft. * If traffic conditions permit, ATC may approve a pilot’s request to exceed the 200 kt speed limit to a maximum limit of 250 kt unless the pilot informs ATC a higher minimum speed is required.</td>
</tr>
</tbody>
</table>

* Not applicable to military aircraft.
** If traffic conditions permit, ATC may approve a pilot's request to exceed the 200 kt speed limit to a maximum limit of 250 kt unless the pilot informs ATC a higher minimum speed is required.
ANNEX C – Definitions and Explanation of Terms

Automatic Dependant Surveillance Broadcast: Automatic Dependant Surveillance-Broadcast (ADS-B) is a broadcast surveillance system different to that of conventional radar. ADS-B aircraft equipment broadcasts identification, position, altitude, velocity and other data automatically at regular intervals. The broadcast data is taken from a combination of other aircraft systems and fed through the ADS-B avionics. ADS-B ground stations receive the aircraft broadcast and the data is relayed to the air traffic control system.

Aerodrome Frequency Response Unit: An Aerodrome Frequency Response Unit (AFRU) is an electronic, ground based, aviation safety enhancement device, intended for use on the CTAF frequency at non-controlled aerodromes. AFRU transmissions are triggered when the Unit detects aircraft transmissions on the correct aerodrome frequency. This response capability is intended to reduce the incidence of incorrect VHF radio frequency channel selection by pilots. The confirming AFRU transmission will be either a short pre-recorded voice message (e.g. aerodrome name followed by CTAF, or a short (300 millisecond) tone burst. An AFRU may also have an optional facility incorporated to allow pilot activation of the runway lights during hours of reduced light and darkness.

Flight Information Service (FIS): A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

Certified Air/Ground Radio Service (CA/GRS): A CA/GRS is a non-controlled aerodrome based third-party radio information service. Third-party entities that wish to provide the CA/GRS service must be certified by CASA under Civil Aviation Safety Regulation (CASR) Part 139. The primary purpose of a CA/GRS is to enhance the safety of air transport aircraft operations at a particular non-controlled aerodrome by the provision of relevant traffic information. Unless operating under an exemption from CASA, the CA/GRS must be operating during the arrival and departure of aircraft engaged in PT or charter operations where the passenger seating capacity is greater than 29 seats. In accordance with Part 139 Manual of Standards (MOS), a CA/GRS must provide the following services to aircraft within airspace as a designated non-controlled aerodrome:

a. advice of relevant air traffic in the vicinity of the non-controlled aerodrome; and
b. aerodrome weather and operational information, including:
   (i) wind speed and direction;
   (ii) the runway preferred by wind or noise abatement requirements;
   (iii) runway surface conditions;
   (iv) QNH;
   (v) temperature;
   (vi) cloud base and visibility;
   (vii) present weather;
   (viii) other operational information;
   (ix) for departing aircraft, a time check;
   (x) call-out of the aerodrome emergency services; and
   (xi) provide aerodrome information to pilots who contact the service.
A CA/GRS operator may also provide other information requested by pilots. The decision to use, or not to use, information provided by a CA/GRS rests with the pilot in command.

**Aerodrome Flight Information Service (AFIS):**
An AFIS is the term used to describe the provision of information useful for the safe and efficient conduct of aerodrome traffic at those aerodromes where the provision of an aerodrome control service is not justified, or is not justified on a 24-hour basis.

The basic elements of information to be provided to aircraft by an AFIS unit should include, as appropriate, the following:

a) meteorological information for aircraft about to take off or to land, including SIGMET\(^{16}\) information. Such information should, to the extent possible, be the same as that provided to aerodrome traffic by aerodrome control towers, i.e. the current surface wind direction and speed, including significant variations;

b) information enabling the pilot to select the most suitable runway for use;

c) information on known aircraft, vehicles or personnel on or near the manoeuvring area or aircraft operating in the vicinity of the aerodrome, which may constitute a hazard to the aircraft concerned;

d) information on aerodrome conditions which is essential to the safe operation of aircraft. Such information should, to the extent possible, be the same as that provided to aerodrome traffic by aerodrome control towers;

e) information on changes in the operational status of non-visual navigation aids and visual aids essential for aerodrome traffic;

The primary purpose of a CA/GRS (or AFIS) is to enhance the safety of air transport aircraft operations at a particular non-controlled aerodrome by the provision of relevant traffic information. These services assist pilots to understand operational activities at the aerodrome.

**Danger Area:** The declaration of a Danger Area (DA) defines airspace within which activities dangerous to the flight of aircraft may exist at specified times. Approval for flight through a DA outside controlled airspace is not required. However, pilots are expected to maintain a high level of vigilance when transiting DAs. DAs are primarily established to alert aircraft on the following:

- Flying training areas where student pilots are learning to fly and / or gather in large numbers;
- Gliding areas where communications with airborne gliders might be difficult;
- Blasting on the ground at mine sites;
- Parachute operations;
- Gas discharge plumes; and
- Small arms fire from rifle ranges.

**Restricted Area:** The declaration of a Restricted Area (RA) creates airspace of defined dimensions within which the flight of aircraft is restricted in accordance with specified conditions. Clearances to fly through an active RA are generally only

\[^{16}\text{Significant Meteorological Information.}\]
withheld when activities hazardous to the aircraft are taking place, or when military activities require absolute priority. RAs are mainly declared over areas where military operations occur. However, RAs have also been declared to cater for communications and space tracking operations or to control access to emergency or disaster areas. RAs are generally promulgated at specified times and dates. For example, a temporary RA may be declared for special events where there may be a public safety issue – such as an Air Show or the Commonwealth Games.

**Surveillance Information Service:** A Surveillance Information Service (SIS) is an on-request service provided to aid pilots of VFR flights, within ATS surveillance system coverage in Class E and Class G airspace, to remain clear of other aircraft or to assist in navigation.
**ANNEX D – Stakeholders**

The following organisations were invited to provide input to the Study.

<table>
<thead>
<tr>
<th>Position</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Aircraft Owners and Pilots Association</td>
</tr>
<tr>
<td>Regulatory Services Manager, Safety and Environment</td>
<td>Airservices Australia</td>
</tr>
<tr>
<td>Members</td>
<td>Airspace Consultative Forum</td>
</tr>
<tr>
<td>Chief Pilot</td>
<td>Arena International Aviation College</td>
</tr>
<tr>
<td>Chief Pilot</td>
<td>Australia By Seaplane</td>
</tr>
<tr>
<td>Manager</td>
<td>Australian Aircraft Kits</td>
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<tr>
<td>Secretary</td>
<td>Australian Airports Association</td>
</tr>
<tr>
<td>President</td>
<td>Australian and International Pilots Association</td>
</tr>
<tr>
<td>Technical Officer</td>
<td>Australian Balloon Federation</td>
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<tr>
<td>Technical Consultant</td>
<td>Australian Federation of Air Pilots</td>
</tr>
<tr>
<td>Director - Aircraft Operations</td>
<td>Australian Parachute Federation</td>
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<tr>
<td>Chief Pilot</td>
<td>Aviation Charters</td>
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<tr>
<td>Chief Pilot</td>
<td>Coastal Skydivers</td>
</tr>
<tr>
<td>Chief Instructor</td>
<td>Coffs City Skydivers</td>
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<td>Chief Executive Officer</td>
<td>Edwards Aviation Australia</td>
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<tr>
<td>Operator</td>
<td>Camden Haven Airfield</td>
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<tr>
<td>Airfields and Airspace Officer</td>
<td>Gliding Federation of Australia</td>
</tr>
<tr>
<td>Aerodrome Reporting Officer</td>
<td>Greater Taree City Council</td>
</tr>
<tr>
<td>President</td>
<td>Hang Gliding Federation of Australia</td>
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<tr>
<td>President</td>
<td>Hastings District Flying Club</td>
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<tr>
<td>Chief Pilot</td>
<td>High Adventure</td>
</tr>
<tr>
<td>Chief Pilot</td>
<td>Jet Fighter</td>
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<tr>
<td>Chief Pilot</td>
<td>Johnston Aviation Services</td>
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<td>President</td>
<td>Kempsey Flying Club</td>
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<td>Manager Economic Sustainability</td>
<td>Kempsey Shire Council</td>
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<tr>
<td>Manager</td>
<td>Light Aero Australia</td>
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<tr>
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<td>Macleay Aircraft Maintenance</td>
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<tr>
<td>Chief Pilot</td>
<td>Macquarie Air</td>
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<td>Manning River Aero Club</td>
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<td>Mid Coast Flying</td>
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<tr>
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<td>Mid North Coast Flyers Inc.</td>
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<td>Aerodrome Business Enterprise Manager</td>
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<td>Port Macquarie Rifle Club</td>
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<td>Head of Operations Capacity and Compliance</td>
<td>Qantas Airways Limited</td>
</tr>
<tr>
<td>Safety Compliance and Risk Manager</td>
<td>QantasLink Airways</td>
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<td>Regional Airspace and Procedures Advisory Committee</td>
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<td>– New South Wales</td>
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<tr>
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<td>Regional Airspace and Procedures Advisory Committee</td>
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<tr>
<td></td>
<td>– South Queensland</td>
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<tr>
<td>Position</td>
<td>Organisation</td>
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<tr>
<td>Chief Executive Officer</td>
<td>Regional Aviation Association of Australia</td>
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<td>Chief Pilot</td>
<td>Regional Express Airlines</td>
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<tr>
<td>Chief Pilot</td>
<td>Royal Flying Doctor Service (Queensland)</td>
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<tr>
<td>Quality and Safety Manager</td>
<td>Royal Flying Doctor Service South Eastern Section</td>
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<td>Chief Instructor</td>
<td>Skydiveing NSW Drop Zone</td>
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<td>Operator</td>
<td>South West Rocks Airfield</td>
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<td>Senior Instructor</td>
<td>Sydney Recreational Flying Club (Taree)</td>
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<td>Operator</td>
<td>The Lakes Airfield</td>
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<tr>
<td>Chief Executive Officer</td>
<td>Toll Priority</td>
</tr>
<tr>
<td>Manager Air Traffic Management and Meteorology</td>
<td>Virgin Australia</td>
</tr>
<tr>
<td>Manager Line Operations - East</td>
<td>Virgin Australia Regional Airlines (Skywest Airlines)</td>
</tr>
<tr>
<td>Aviation Safety Advisors</td>
<td>Civil Aviation Safety Authority</td>
</tr>
<tr>
<td>Flying Operations Inspectors</td>
<td>Civil Aviation Safety Authority</td>
</tr>
<tr>
<td>Aerodrome Inspectors</td>
<td>Civil Aviation Safety Authority</td>
</tr>
<tr>
<td>Defence/CASA Liaison Manager</td>
<td>Department of Defence</td>
</tr>
</tbody>
</table>