CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

# Advisory Circular
# AC65–7.6

**Revision 1**

**06 February 2014**

## Air Traffic Service Personnel Licences and Ratings–Air Traffic Controller Ratings—Area Control Automatic Dependant Surveillance Rating

### General

Civil Aviation Authority Advisory Circulars contain information about standards, practices, and procedures that the Director has found to be an **Acceptable Means of Compliance (AMC)** with the associated rule.

An AMC is not intended to be the only means of compliance with a rule, and consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices, or procedures are found to be acceptable they will be added to the appropriate Advisory Circular.

This Advisory Circular also includes **Guidance Material (GM)** to facilitate compliance with the rule requirements. Guidance material must not be regarded as an acceptable means of compliance.

### Purpose

The Advisory Circular provides the syllabus for training and assessment for applicants for an Area Control Automatic Dependent Surveillance Rating.

### Related Rules

This Advisory Circular relates specifically to Civil Aviation Rules Part 65 *Subpart G Air Traffic Service Personnel licences and Ratings*

### Change Notice

Revision 1 makes editorial changes to text to reflect the changes to Appendix A which presents ‘Subject No 108 - Area Control Automatic Dependent Surveillance Rating’ syllabus in the objective performance verb format.

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# Introduction

Civil Aviation Rules, Part 65 – *Air Traffic Service Personnel Licences and Ratings* was issued on 1 April 1997. This Part prescribes rules governing the issue of air traffic service licences and ratings, the conditions under which those licences and ratings are necessary, and the privileges and limitations of those licences and ratings. The Part introduced changes that included the Area Control Automatic Dependant Surveillance Ratings, Instructor Ratings, Examiner Ratings, and Flight Service Operator Licences.

This Advisory Circular and the associated series of Advisory Circulars, one for each Part 65 Subpart and one for each rating where more than one rating is contained within a Subpart, support these rules.

## Advisory Circular Intent and Process

Guidance on how to comply with Civil Aviation Rule Part 65 Subpart G rule 65.301(1)(v) is contained within this Advisory Circular (AC) *Air Traffic Service Personnel Licences and Ratings– Area Control Automatic Dependant Surveillance Rating.*

The CAA is actively managing the development of syllabuses into specific objective format. This format specifies exactly what has to be covered, and to what standard, so that no matter who studies, who instructs, and who assesses, all are working to exactly the same standards.

# Subpart G — Air Traffic Controller Ratings – Area Control Automatic Dependant Surveillance Rating

## 65.301 Applicability

Subpart G prescribes rules governing the issue and validation of area control automatic dependant surveillance ratings, and the privileges and limitations of those ratings.

## 65.303 Eligibility requirements

Rule 65.303 requires an applicant for an area control automatic dependant surveillance rating to have satisfactorily completed a training course and to have passed examinations relevant to the rating and validation in airspace structure; applicable rules, procedures and sources of information; air navigation facilities; air traffic control equipment and its use; terrain and prominent landmarks; characteristics of air traffic and traffic flow; weather phenomena; emergency and search and rescue plans, principles, uses and limitations of automatic dependant surveillance systems and associated equipment; and procedures for the provision of area control automatic dependant surveillance services, including procedures to ensure appropriate terrain clearance. Refer to subparagraphs (a)(2)(iv) and (4) of the rule.

Successful assessment based on the syllabus given in Appendix A of this Advisory Circular would meet this requirement.

# APPENDIX A—Subject No 108–Area Control Automatic Dependent Surveillance Rating

## Syllabus

Each subject has been given a subject number and each topic within that subject a topic number. These reference numbers may be used on 'knowledge deficiency reports' and will provide valuable feed back to the examination candidate.

| Sub Topic | Syllabus Item |
|---|---|
| | **Air Traffic Services** |
| **108.2** | **General** |
| 108.2.2 | Explain the objectives of air traffic services. |
| 108.2.4 | State the categories air traffic services are divided into. |
| **108.4** | **Air Traffic Control Service** |
| 108.4.2 | Define an air traffic control service. |
| 108.4.4 | Explain the responsibility for the provision of an air traffic control service. |
| 108.4.6 | Define an area control service. |
| 108.4.8 | Describe the responsibilities of an area controller. |
| 108.4.10 | Describe an Auckland Oceanic FIR area controller's additional responsibilities. |
| 108.4.12 | Describe the components the integrity of an Oceanic Control Service depends on. |
| **108.6** | **Flight Information Service** |
| 108.6.2 | Define a flight information service. |
| 108.6.4 | Describe the scope of a flight information service. |
| 108.6.6 | Explain the responsibility for the provision of a flight information service. |
| 108.6.8 | Define traffic information. |
| 108.6.10 | Explain the requirements for the provision of an in-flight briefing service within the Auckland Oceanic FIR. |
| 108.6.12 | Describe the requirements for the provision of traffic information in the Auckland Oceanic FIR. |
| 108.6.14 | Describe the requirements for handling VFR flights in the Auckland Oceanic FIR, including appropriate phraseology. |
| **108.8** | **Alerting Service** |
| 108.8.2 | Define an alerting service. |
| 108.8.4 | Describe the scope of an alerting service. |
| 108.8.6 | Explain the responsibility for the provision of an alerting service. |
| 108.8.8 | Explain the actions taken in the provision of an alerting service. |
| 108.8.10 | Explain the alerting service emergency phases. |
| 108.8.12 | Derive from an in-flight emergency response checklist, controller actions in the event of an in-flight emergency. |
| 108.8.14 | Explain the initial checks carried out to confirm the operational status of an aircraft within the Auckland Oceanic FIR. |

| Sub Topic | Syllabus Item |
|---|---|
| 108.8.16 | Define SARTIME. |
| 108.8.18 | Describe the process for RCCNZ/ NZ Police/CAA notification. |
| 108.8.20 | Describe the action of an oceanic controller in the event of an aircraft needing assistance in addition to that outlined in an ATS operations manual. |
| 108.8.22 | State the role of scheduled position reports over waypoints in the provision of an alerting service for ADS-C equipped aircraft within the Auckland Oceanic FIR. |
| 108.8.24 | Describe the process for late or missing ADS-C reports. |
| 108.8.26 | Describe the appropriate response to overdue position reports within the Auckland Oceanic FIR. |
| 108.8.28 | Describe the appropriate response to an ADS emergency report. |
| 108.8.30 | State the information an alerting service for a departure from an aerodrome within the Auckland Oceanic FIR is based on. |
| **108.10** | **Airspace Management** |
| 108.10.2 | Describe the requirements for managing and prioritising workload in the provision of air traffic services. |
| 108.10.4 | Explain traffic priorities within controlled airspace. |
| 108.10.6 | Describe the procedures to follow when it becomes apparent air traffic demand will exceed the available capacity of the ATC system. |
| 108.10.8 | Define air traffic management (ATM). |
| 108.10.10 | Define air traffic flow management (ATFM). |
| 108.10.12 | Explain the tools used for implementing ATFM. |
| **108.12** | **FANS 1/A CNS/ATM** |
| 108.12.2 | Explain the use and limitations of satellite based GNSS. |
| 108.12.4 | Explain in general terms the FANS 1/A CNS/ATM system. |
| 108.12.6 | Describe the interoperability constraints imposed by the FANS 1/A environment. |
| 108.12.8 | Describe the ATC contingency procedures in the event of GNSS coverage/signal issue, or aircraft equipment failure. |
| | **Co-ordination, Clearances and Instructions** |
| **108.14** | **Co-ordination Procedures** |
| 108.14.2 | Explain the flight plan process for flight within the Auckland Oceanic FIR, including:<br>(a) ICAO flight plan formats;<br>(b) flight plan states;<br>(c) flight plan correction;<br>(d) flight plan route truncation;<br>(e) manual flight plan deletion;<br>(f) manual input of flight plans;<br>(g) request for or queries about flight plans. |
| 108.14.4 | State the means of coordination. |
| 108.14.6 | Describe the general co-ordination criteria for the provision of air traffic services, including: |

| Sub Topic | Syllabus Item |
|---|---|
| | (a) information about which agreement must be reached; and |
| | (b) when co-ordination is required. |
| 108.14.8 | Describe the automated coordination functions provided by the Oceanic Control System (OCS). |
| 108.14.10 | Explain the limitations of automatic exchange of ATS data in coordination. |
| 108.14.12 | State when a read back of coordination is mandatory. |
| 108.14.14 | State the time criteria prior to ETO at transfer of control point, within which co-ordination is required, for all flights between ATS sectors/units, including requirements to be met for a reduction in this time. |
| 108.14.16 | Describe the following procedures relating to estimate messages, including: |
| | (a) occasions when estimates shall be passed; |
| | (b) explanation of an information estimate; |
| | (c) requirements for the use of estimate messages; |
| | (d) elements of an estimate message, including for a departing aircraft; |
| | (e) responsibilities of a controller when accepting an estimate message; |
| | (f) standard phraseologies used. |
| 108.14.18 | Describe the requirements and automated coordination functions of the Oceanic Control System, including: |
| | (a) coordination window functions; |
| | (b) coordination variable system parameters; |
| | (c) coordinated profile; |
| | (d) aircraft position symbol/ flight strip indications; |
| | (e) inbound without confliction; |
| | (f) inbound with confliction; |
| | (g) inbound re-coordination; |
| | (h) inbound coordination with: |
| | i) block levels, |
| | ii) weather deviation, |
| | iii) speed restriction, |
| | iv) route changes, |
| | v) profile restrictions. |
| | (i) outbound re-coordination by system warning; |
| | (j) outbound re-coordination when initiating change; |
| | (k) back coordination; |
| | (l) appropriate use of function buttons in coordination window; |
| | (m) inhibiting automatic coordination; |
| | (n) appropriate response to system inhibiting coordination; |

| Sub Topic | Syllabus Item |
|---|---|
| | (o) manual coordination. |
| 108.14.20 | Explain the specific coordination procedures for pre- departure coordination from aerodromes within the Auckland Oceanic FIR. |
| 108.14.22 | Explain the specific coordination procedures for pre-departure coordination with adjacent ATS units. |
| 108.14.24 | Explain the procedures for flight entering the Auckland Oceanic FIR from the NZ FIR, including the interface between Oceanic FDPS and domestic FDP. |
| 108.14.26 | Explain the Letter of Agreement requirements for FIR adjacent FIRs/ATS units to the Auckland Oceanic FIR including transfer of control and RTF points. |
| 108.14.28 | Describe the different types of air traffic services inter-facility data communications (AIDC) messages, including: |
| | (a) their purpose; |
| | (b) AIDC message identifiers; |
| | (c) sequence of AIDC messages |
| | (d) effects of not receiving any one of the expected AIDC messages. |
| 108.14.30 | Describe the requirements when oceanic controller has detected a conflict extending across FIR boundary, including appropriate phraseologies. |
| 108.14.32 | Describe the procedures for flights operating within 50 NM of a boundary. |
| 108.14.34 | State the responsibility requirements for detecting conflictions and providing separation for flights entering and/or leaving oceanic airspace. |
| 108.14.36 | Describe the procedures for flights entering the NZ FIR from the Auckland Oceanic FIR, with respect to level information and SSR codes. |
| 108.14.38 | Describe the coordination and communication requirements between air-ground operators and the oceanic controller. |
| 108.14.40 | Describe the procedures to follow when a PAC message is received from an aircraft departing within the Auckland Oceanic FIR and entering an adjacent FIR within 30 minutes of departure. |
| **108.16** | **Revisions** |
| 108.16.2 | Identify the requirements for revisions to estimates and current flight plan (CPL) messages in the following circumstances: |
| | (a) changes of routing, including appropriate phraseology; |
| | (b) revisions to ETO and/or ETA; |
| | (c) revisions to level; |
| | (d) revisions to SSR code. |
| 108.16.4 | State the standard phraseologies for revisions. |
| **108.18** | **Transfer of Control and Radio Guard** |
| 108.18.2 | Describe the procedures associated with transfer of control, including: |
| | (a) elements of a verbal transfer of control message and response; |
| | (b) accepting controller's responsibility; |
| | (c) separation responsibility- 'your separation'; |

| Sub Topic | Syllabus Item |
|---|---|
| | (d) early release requirements; |
| | (e) phraseologies. |
| 108.18.4 | Describe the following procedures associated with transfer of radio guard: |
| | (a) standard RTF contact points; |
| | (b) accepting controller responsibility. |
| **108.20** | **ATC Clearances** |
| 108.20.2 | Define an ATC clearance. |
| 108.20.4 | Describe the following conditions regarding an ATC clearance: |
| | (a) validity; |
| | (b) elements and what they are required to achieve; |
| | (c) who requires a clearance; |
| | (d) when it can be denied or withheld; |
| | (e) methods for issuing including relay through another agency. |
| 108.20.6 | List the elements of an ATC clearance that must be read back in full by a pilot. |
| 108.20.8 | Describe the requirements for issuing clearances to IFR flights to enter or leave controlled airspace. |
| 108.20.10 | List the objectives for instructions contained in an ATC clearance for an IFR flight. |
| 108.20.12 | State the air traffic services provided when a clearance is issued to a VFR flight. |
| 108.20.14 | State the elements of as ATC clearance issued to an IFR or VFR flight to operate enroute. |
| 108.20.16 | List the phrases to be used to authorise an aircraft to operate in controlled airspace. |
| 108.20.18 | Define the term clearance limit for an IFR flight. |
| 108.20.20 | Describe procedures to follow in the event of unavailability of route and/or cruise level elements of an ATC clearance, including the phraseologies to be used. |
| 108.20.22 | Describe the procedures associated with route instructions, including: |
| | (a) standard route clearances; |
| | (b) route description, use of flight planned route; |
| | (c) actions to be taken in the event of hazardous weather conditions; |
| | (d) revised route instructions; |
| | (e) direct routing and unevaluated routes. |
| 108.20.24 | Describe the procedures associated with level instructions and identify appropriate phraseologies, including: |
| | (a) obstacle clearance reference; |
| | (b) IFR cruising level requirements; |
| | (c) non-standard levels block levels, changes of level; |
| | (d) VFR levels. |
| 108.20.26 | Explain how to construct and deliver clearance in the following circumstances: |

| Sub Topic | Syllabus Item |
|---|---|
| | (a) processing HF request; |
| | (b) processing CPDLC request; |
| | (c) processing a departure request; |
| | (d) processing a clearance request; |
| | (e) conditional clearance; |
| | (f) clearance acknowledgment. |
| 108.20.28 | Describe the clearance requirements using CPDLC, including: |
| | (a) altitude change clearances; |
| | (b) issuing conditional altitude change clearances; |
| | (c) level report requirements for climb or descent clearances; |
| | (d) clearances into block levels; |
| | (e) cancelling block altitude clearances; |
| | (f) requesting an aircrafts speed; |
| | (g) advising a wake turbulence offset; |
| | (h) direct tracking-UPR aircraft. |
| 108.20.30 | Describe the requirements to be considered in the event of multi element requests, including: |
| | (a) avoiding multiple element clearance requests; |
| | (b) responding to multiple element clearance requests; |
| | (c) multiple clearance requests in one message: all approved; |
| | (d) multiple clearance requests in one message: all not approved; |
| | (e) multiple clearance requests in one message: some approved/some not approved; |
| | (f) multi- element uplink messages; |
| | (g) combining multiple elements into a single message; |
| | (h) time dependent clearance. |
| 108.20.32 | Explain the automated flight following and profile conformance monitoring in the Auckland Oceanic environment. |
| 108.20.34 | Describe the appropriate response to requests that cannot be approved. |
| 108.20.36 | Explain the process when a request for cruise climb is made. |
| 108.20.38 | Explain the general procedures for the issuance of a clearance by an oceanic controller, including constraints. |
| 108.20.40 | Explain the process for relaying a clearance. |
| 108.20.42 | State the standard clearances to be used for delivery of descent clearance/traffic information, including occasions when they can be abbreviated. |
| 108.20.44 | Describe the process for issuing departure clearances to air ground from the oceanic FDP. |
| 108.20.46 | Explain the requirements for weather deviations. |

| Sub Topic | Syllabus Item |
|---|---|
| 108.20.48 | Explain the requirements for lateral offset. |
| 108.20.50 | Explain the requirements for issuing successive clearances. |
| 108.20.52 | Describe the process to be followed prior to issuing planned descent clearances. |
| 108.20.54 | Explain IFR altimeter setting requirements, including pilot requirements for altimeter setting through the transition layer. |
| 108.20.56 | Define MFA, MSA, MRA and MEA. |
| 108.20.58 | Define the altimeter setting procedures within the following areas:<br>(a) Rarotonga TMA/C;<br>(b) Norfolk Island (YSNF) ARP;<br>(c) Samoa, Faleolo CTA;<br>(d) Tonga, Fua'amotu CTA. |
| 108.20.60 | Describe the agreed procedure when issuing levels to southbound Antarctic flights. |
| 108.20.62 | State the separation instructions issued when applying time separation. |
| 108.20.64 | Describe the separation instructions issued when applying vertical separation. |
| 108.20.66 | List the phraseologies for SSR Code allocation and frequency change instructions. |
| 108.20.68 | Demonstrate examples for the following:<br>(a) basic clearance formats;<br>(b) entering controlled airspace;<br>(c) leaving controlled airspace. |
| **108.22** | **Position Reporting** |
| 108.22.2 | Describe the position reporting requirements for an IFR flight in the Auckland Oceanic FIR. |
| 108.22.4 | Describe the process of position reporting in the Auckland Oceanic FIR, including:<br>(a) HF position reports;<br>(b) ADS-C position reports;<br>(c) CPDLC position reports;<br>(d) FMC position reports;<br>(e) radar position reports;<br>(f) manual entry;<br>(g) discrepancies between ADS-C and CPDLC estimates. |
| 108.22.6 | Describe the position report processing interface with the Oceanic FDP, including:<br>(a) effect of position report processing;<br>(b) in conformance;<br>(c) out of conformance;<br>(d) incorrectly sequenced ADS position reports. |
| 108.22.8 | Explain the position reporting requirements outside the Auckland Oceanic FIR. |

| Sub Topic | Syllabus Item |
|---|---|
| 108.22.10 | Define navigational error. |
| 108.22.12 | Explain the position reporting requirement in the CPDLC environment, including:<br>(a) downlink of position report;<br>(b) user preferred route (UPR) position reports;<br>(c) first position report;<br>(d) sending of ATC waypoints only;<br>(e) updating a waypoint estimate/non-compulsory waypoints;<br>(f) non-receipt of a scheduled position reports;<br>(g) sequencing “abeam” waypoints in excess of FMS parameters;<br>(h) ARINC 424 Fix names. |
| 108.22.14 | Explain the good operating practice followed when receiving a time out of conformance position report. |
| **108.24** | **Holding Instructions** |
| 108.24.2 | Describe the reasons for issuing holding instructions, including where an aircraft may be instructed to hold. |
| 108.24.4 | State the elements of a clearance to enter a holding pattern for the following situations:<br>(a) published holding pattern;<br>(b) two navigation aids same name;<br>(c) when holding at a DME distance on a VOR radial;<br>(d) published significant point on an ATS route or arrival procedure;<br>(e) other than in an established and published holding pattern;<br>(f) pilot unfamiliar with pattern. |
| 108.24.6 | Explain the following terms:<br>(a) onwards clearance time;<br>(b) expected approach time. |
| 108.24.8 | State how controllers can protect a holding aircraft in the Auckland Oceanic FIR. |
| | **Auckland Oceanic Control** |
| **108.26** | **Auckland Oceanic FIR** |
| 108.26.2 | Describe the lateral limits of the Auckland Oceanic FIR, including:<br>(a) vertical dimensions;<br>(b) easternmost and westernmost boundaries. |
| 108.26.4 | Describe the general weather patterns within the Auckland Oceanic FIR. |
| 108.26.6 | Define the area of responsibility for Auckland Oceanic Control. |
| 108.26.8 | Derive from appropriate maps and charts relevant information, including:<br>(a) controlled airspace and airspace classification;<br>(b) route system; |

| Sub Topic | Syllabus Item |
|---|---|
| | (c) aerodromes within the Auckland Oceanic FIR; |
| | (d) special use airspace; |
| | (e) adjacent ATS units airspace and FIRs, including vertical dimensions; |
| | (f) most commonly used routes; |
| | (g) frequencies; |
| | (h) navigation aids. |
| 108.26.10 | Describe the portion of the Auckland Oceanic FIR that is certified as RNP airspace. |
| **108.28** | **Automatic Dependent Surveillance** |
| 108.28.2 | Explain in general terms the difference between radar and ADS. |
| 108.28.4 | Explain the operation of ADS-C, including: |
| | (a) the periodic contract; |
| | (b) the event contract; |
| | (c) cancelling ADS contracts; |
| | (d) ADS-C report; |
| | (e) the on demand contract; |
| | (f) the Oceanic FDP default ADS-C contracts. |
| 108.28.6 | Explain the factors to be considered when using ADS-C, including: |
| | (a) vertical and lateral variations; |
| | (b) figure of merit (FOM) data in ADS-C reports; |
| | (c) flight crew modification of active route. |
| 108.28.8 | Describe the procedures for the management of the ADS-C connection, including: |
| | (a) priority for the connection; |
| | (b) allocation of ADS-C connections; |
| | (c) monitoring of an aircraft operating close to an airspace boundary; |
| | (d) other ground facilities requesting ADS-C contracts; |
| | (e) ADS-C connections not available; |
| | (f) termination of ADS-C connections. |
| 108.28.10 | Describe the occasions when a change to the default reporting rate may be considered. |
| 108.28.12 | Explain in general terms ADS-C equipped aircraft navigation within the Auckland Oceanic FIR, including: |

| Sub Topic | Syllabus Item |
|---|---|
| | (a) aircraft in heading select mode; |
| | (b) sequencing subsequent waypoints. |
| **108.30** | **Oceanic Control System** |
| 108.30.2 | Explain the characteristics of the OCS system architecture. |
| 108.30.4 | Explain the characteristics of the OCS Data transmission process. |
| 108.30.6 | Explain the correct workstation ergonomic setup. |
| 108.30.8 | Describe the components of the controller workstation. |
| 108.30.10 | Describe the components of the maintenance control position. |
| 108.30.12 | Explain the requirements for processing weather data and updating weather. |
| 108.30.14 | Explain the queue management system. |
| 108.30.16 | Describe the OCS reservation window functions for hazardous operations. |
| 108.30.18 | Describe the requirements and process for OCS sectorisation, including: |
| | (a) sectorisation window functions; |
| | (b) re-assignment of airspace to spare workstation; |
| | (c) configuring control sectors internal/external; |
| | (d) consolidating/de-consolidating control sectors. |
| 108.30.20 | Describe the requirements for OCS airspace reservation, including: |
| | (a) airspace reservation window functions; |
| | (b) types of airspace reservation; |
| | (c) separation from airspace reservation; |
| | (d) activating and de-activating airspace reservation; |
| | (e) modifying and updating an existing airspace reservation; |
| | (f) creating a new airspace reservation; |
| | (g) flight plan that creates an airspace reservation. |
| 108.30.22 | Describe the process for extending a protected profile for an aircraft beyond its ETA at destination, including any requirements. |
| 108.30.24 | Describe the OCS process of message transmissions, including: |
| | (a) message review correct compose (MRCC) window functions; |
| | (b) message templates; |
| | (c) compose and correct messages; |

| Sub Topic | Syllabus Item |
|---|---|
| | (d) enter and send messages; |
| | (e) send messages internally and externally. |
| 108.30.26 | Describe the process oceanic controllers should follow when actioning queues. |
| 108.30.28 | Describe the requirements for the display and dissemination of NOTAM and SIGMETS. |
| 108.30.30 | Describe how to manage aircraft profile and the types of aircraft profiles. |
| 108.30.32 | Describe in general terms the strip processing for OCS, including: |
| | (a) airspace reservation strips; |
| | (b) visual indicators on the strip; |
| | (c) use of correct separation and navigation flags; |
| | (d) strip deletion; |
| | (e) flight strip window functions; |
| | (f) flight strip layout and data; |
| | (g) flight strip menus. |
| 108.30.34 | Explain the use of the auto-route function and associated rules. |
| 108.30.36 | Explain the use of the assume control function. |
| **108.32** | **Data Link and CPDLC** |
| 108.32.2 | Explain the operation of data link in Auckland Oceanic FIR. |
| 108.32.4 | Describe the process for the pre-flight phase for data link, including: |
| | (a) identifying data link aircraft; |
| | (b) registration number. |
| 108.32.6 | Define the term CPDLC. |
| 108.32.8 | Describe the AFN LOGON process, including: |
| | (a) pre requisite for CPDLC and or ADS-C connection; |
| | (b) initiation of AFN LOGON; |
| | (c) purpose of an AFN LOGON; |
| | (d) response to an AFN LOG ON; |
| | (e) AFN LOGON triggered by address forwarding; |
| | (f) purpose and procedure; |
| | (g) an aircraft transferring from one data link area to another; |

| Sub Topic | Syllabus Item |
|---|---|
| | (h) aircraft transiting data link areas. |
| 108.32.10 | Explain the purpose of the CPDLC connection, including: |
| | (a) active and inactive CPDLC connections; |
| | (b) establishing an active CPDLC connection. |
| 108.32.12 | Describe CPDLC capability including: |
| | (a) downlink messages; |
| | (b) uplink messages; |
| | (c) armable messages. |
| 108.32.14 | Explain the use of pre-formatted and free text messages, including: |
| | (a) preferred use of pre-formatted messages; |
| | (b) standardised free text messages; |
| | (c) storing free text. |
| 108.32.16 | Describe the requirements for the exchange of CPDLC messages, including: |
| | (a) message assurance; |
| | (b) ambiguous dialogues; |
| | (c) interruption of a CPDLC dialogue. |
| 108.32.18 | Describe the appropriate response to requests, clearances and instructions, including: |
| | (a) affirmative response to a clearance/instruction; |
| | (b) negative response to a clearance request; |
| | (c) conditions relating to a specific clearance; |
| | (d) affirmative response to a negotiation request; |
| | (e) negative response to a negotiation request; |
| | (f) offering alternative clearances to downlink requests. |
| 108.32.20 | Describe the time period between receiving and responding to a message, including: |
| | (a) delays in responding; |
| | (b) delay expected after receiving a standby message. |
| 108.32.22 | Describe the process of re-sending messages, including: |
| | (a) re-sending a message when no alert received; |
| | (b) re-sending a message when an alert has been received; |
| | (c) second identical request after an uplink standby message; |

| Sub Topic | Syllabus Item |
|---|---|
| | (d) multiple identical requests. |
| 108.32.24 | Describe the process of message closure, including: |
| | (a) answering an uplink free text; |
| | (b) dialogue commenced via CPDLC and continued via voice; |
| | (c) closure of the clearance window. |
| 108.32.26 | Explain the process of next data authority notification, including: |
| | (a) next data authority notification (NDA) message; |
| | (b) AFN LOGON triggered by address forwarding message; |
| | (c) sequence of the NDA and FN_CAD messages; |
| | (d) change of the NDA; |
| | (e) the process for abnormal cases relating to the NDA notification. |
| 108.32.28 | Describe the process for termination of CPDLC, including: |
| | (a) normal operations; |
| | (b) end service failure due pending up/downlink; |
| | (c) correct use of CPDLC messages; |
| | (d) retaining CPDLC guard through another airspace. |
| **108.34** | **General Operations** |
| 108.34. 2 | Describe the performance characteristics of common aircraft operating within the sector, including: |
| | (a) rates of climb/descent and maximum/minimum speeds; |
| | (b) deterioration/variation of weather effecting aircraft operations and separations; |
| | (c) PBN equipment. |
| 108.34.4 | Explain user preferred routes (UPR). |
| 108.34.6 | Describe the back coordination requirements for neighbouring FIRs and ATSUs. |
| 108.34.8 | Explain the coordination procedures with Auckland Oceanic radar sector. |
| 108.34.10 | Describe the requirements for the Norfolk Island mandatory traffic advisory frequency (MTAF), including: |
| | (a) airspace definition; |
| | (b) Norfolk Island alerting service; |
| | (c) flight plan termination; |

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| | (d) traffic information. |
| 108.34.12 | Describe the sector and position specific responsibilities including the operation of positions within the sector. |
| 108.34.14 | Describe the adjacent sectors/FIRs/ATSUs off watch procedures. |
| 108.34.16 | Describe the layout of the electronic flight progress board. |
| 108.34.18 | Describe the electronic flight progress strips, including: |
| | (a) flight details displayed; |
| | (b) processing of flight details data. |
| 108.34.20 | Describe the recommended handover technique, equipment checks and use of sign on strips. |
| 108.34.22 | Describe the requirements for an adequate pre-duty briefing. |
| 108.34.24 | Explain in general terms the operational documents relevant to the provision of an oceanic control service. |
| 108.34.26 | Describe the process for changes to FANS or OCS software. |
| **108.36** | **Air Ground Voice Communications** |
| 108.36.2 | Describe in general terms the responsibilities of the international air-ground radio operator. |
| 108.36.4 | Describe the requirements for operation of the airlog by air-ground operators, including: |
| | (a) OCS message processing; |
| | (b) out of conformance AIREP processing; |
| | (c) penultimate AIREPs; |
| | (d) message priorities. |
| 108.36.6 | Describe the requirements for relaying of instructions from oceanic controllers through air-ground operators. |
| 108.36.8 | Describe air-ground operator’s responsibilities in terms of ensuring readbacks. |
| 108.36.10 | State the main HF frequencies monitored by Auckland Radio. |
| 108.36.12 | Describe the process for clearance issue and coordination of flight departing from airfields within the Auckland Oceanic FIR. |
| 108.36.14 | Describe the process for flight arriving into aerodromes within the Auckland Oceanic FIR. |
| 108.36.16 | Describe in general terms the responsibilities and requirements of the aeronautical telecommunications system. |
| | **Separation within Auckland Oceanic FIR** |

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| **108.38** | **General** |
| 108.38.2 | Describe the requirements for the provision of separation and methods applied. |
| 108.38.4 | Explain the scope for the provision of separation. |
| 108.38.6 | Describe how separation can be reduced to military aircraft. |
| 108.38.8 | Define same track, reciprocal tracks, and crossing tracks. |
| 108.38.10 | Define same track reciprocal tracks and crossing tracks in the application of horizontal separation in OCS. |
| 108.38.12 | State when separation can be reduced or increased. |
| 108.38.14 | Describe the actions to be taken in the event of a loss of separation. |
| 108.38.16 | Describe the requirements for exemption from the standard process when OCS indicates that separation has been lost. |
| 108.38.18 | State the elements of essential traffic information. |
| 108.38.20 | Define the term common point. |
| 108.38.22 | Explain the use of ADS-C for separation, including:<br>(a) appropriate ADS-C reporting requirements;<br>(b) appropriate separation standard. |
| 108.38.24 | State the requirements for the provision of domestic separation. |
| 108.38.26 | State the requirements for the application of RNP separation. |
| 108.38.28 | State the vertical, longitudinal and lateral separation standards used by OCS and requirements for their application. |
| 108.38.30 | State the separation standards used in oceanic airspace but not supported by OCS. |
| 108.38.32 | State the separation standard when degraded RNP. |
| 108.38.34 | State the separation from reservation airspace. |
| **108.40** | **Vertical Separation** |
| 108.40.2 | State the vertical separation minima. |
| 108.40.4 | State the vertical separation minima within the Auckland Oceanic FIR. |
| 108.40.6 | Describe the requirements to be met prior to clearing an aircraft to a level when the aircraft occupying that level reports vacating. |
| 108.40.8 | State the vertical separation standards and procedures for reduced vertical separation minima (RVSM). |
| 108.40.10 | Describe what portion of the Auckland Oceanic FIR is certified for RVSM operations. |
| 108.40.12 | Describe the requirements for non-RVSM operations. |

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| 108.40.14 | Describe the requirements for altitude deviations in RVSM airspace. |
| 108.40.16 | Describe RVSM designated airspace in the South Pacific. |
| 108.40.18 | Explain the requirements for the approval for non-RVSM operations. |
| 108.40.20 | Describe the application of priorities within RVSM airspace. |
| 108.40.22 | Describe the requirements for climb and descent through RVSM airspace by non RVSM aircraft. |
| 108.40.24 | Describe the coordination required for non RVSM aircraft to enter NZ FIR airspace in the RVSM stratum. |
| 108.40.26 | State the conventional RVSM flight levels and any requirements. |
| 108.40.28 | Describe the occasions and requirements when RVSM operations shall be suspended. |
| 108.40.30 | State the occasions when non RVSM civil aircraft are permitted to file flight plans between F290 and F410. |
| 108.40.32 | Describe the requirements for the use of ADS-C in the application of vertical separation. |
| **108.42** | **Lateral Separation** |
| 108.42.2 | State the lateral separation standards and procedures. |
| 108.42.4 | State how lateral separation is achieved in oceanic airspace. |
| 108.42.6 | Describe the procedure and application of diversionary climbs and the general rules and considerations for their use. |
| 108.42.8 | Explain track separation. |
| 108.42.10 | Describe the requirements for track separation between aircraft transitioning into airspace where a larger lateral separation minimum applies. |
| 108.42.12 | State the lateral separation minima within the Auckland Oceanic FIR. |
| 108.42.14 | Describe the requirements for the use of ADS-C in the application of lateral separation. |
| 108.42.16 | Describe the areas within the Auckland Oceanic FIR where the ground-based NAVAID lateral separation table can be applied, including any provisos. |
| 108.42.18 | Describe the requirements for the provision of lateral separation from special use airspace. |
| 108.42.20 | Describe RNP lateral separation. |
| 108.42.22 | Explain the requirements for lateral weather deviations. |
| 108.42.24 | State which neighbouring states can apply 50 NM laterally between RNP 10 certified aircraft. |
| **108.44** | **Longitudinal Separation** |
| 108.44.2 | State the separation standard for longitudinal separation between aircraft within the |

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| | OCA and aircraft entering and/or within the NZ FIR from OCA. |
| 108.44.4 | State the longitudinal separation standards and procedures based on time. |
| 108.44.6 | Describe the methods of establishing longitudinal separation based on time. |
| 108.44.8 | State the longitudinal separation standards and procedures based on distance. |
| 108.44.10 | List the requirements for the application of longitudinal separation based on distance. |
| 108.44.12 | Calculate an accurate ETP for opposite direction traffic in a theoretical example. |
| 108.44.14 | Describe the process for the application of T10 separations. |
| 108.44.16 | Describe the requirements for the application of T5-9 separations. |
| 108.44.18 | Describe the use of ADS–C in the provision of longitudinal separation including:<br>(a) establishing longitudinal separation;<br>(b) using extrapolated or interpolated positions;<br>(c) validity of displayed information;<br>(d) time-based separation;<br>(e) distance-based separation. |
| 108.44.20 | State the RNP distance separation, including requirements and application. |
| 108.44.22 | State when adjacent FIRs can apply T10RNP separation between two aircraft in trail. |
| **108.46** | **Mach Number Technique** |
| 108.46.2 | Describe the term Mach number technique. |
| 108.46.4 | Explain the application of Mach number technique. |
| 108.46.6 | State the Mach number separation applicable in the Auckland Oceanic OCA/A. |
| 108.46.8 | Explain the methodology used for calculation of differences in speed in the use of Mach number technique. |
| **108.48** | **OCS Separation and Conflict Detection** |
| 108.48.2 | Explain the limitations of the conflict prediction and reporting process. |
| 108.48.4 | State the separation standards recognised by the OCS conflict detection. |
| 108.48.6 | State the oceanic controller’s responsibilities when applying domestic separation standards. |
| 108.48.8 | Describe the controller responsibilities when the OCS displays an imminent/actual conflict alert. |
| 108.48.10 | Describe the controller responsibilities when the OCS displays an advisory conflict alert. |

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| 108.48.12 | Using examples indicate whether or not conflicts would be displayed on OCS in the situations represented. |
| 108.48.14 | State the separation standards that OCS does not recognise or apply. |
| 108.48.16 | Describe the operation of the OCS conflict detection across adjacent NZ FIR boundaries. |
| 108.48.18 | Describe the operation of the OCS conflict detection across adjacent International FIR boundaries. |
| 108.48.20 | Describe the operation of the OCS conflict probe for flights with routes ending with Oceanic Sectors. |
| 108.48.22 | Describe the procedures to follow when OCS detect a conflict extending across an international FIR boundary. |
| 108.48.24 | Describe the procedures to follow where OCS detects a conflict contained wholly within an adjacent FIR. |
| 108.48.26 | State the occasions oceanic controllers shall activate the conflict override and the procedures to follow. |
| 108.48.28 | State the requirements for applying lateral separation from an aircraft in a holding pattern within the Auckland Oceanic FIR. |
| 108.48.30 | Describe the visual indication of a conflict in the OCS. |
| 108.48.32 | Describe the conflict windows, including:<br>(a) types of conflict summary windows;<br>(b) conflict summary window fields;<br>(c) features of conflict report window;<br>(d) features of the reservation probe conflict summary window. |
| 108.48.34 | Explain the process for management of conflict alert, including:<br>(a) comprehensive analysis;<br>(b) appropriate resolution;<br>(c) appropriate use of conflict override function. |
| 108.48.36 | Explain the procedures for correcting CPAR disablements. |
| 108.48.38 | Explain the responsibility for separation calculations in the OCS environment. |
| 108.48.40 | Describe the controller responsibilities according to the OCS category for conflict resolution. |
| 108.48.42 | Describe the process to follow when OCS reports a conflict between aircraft in uncontrolled airspace. |
| 108.48.44 | Describe the process when OCS detects conflicts with VFR flights. |

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| **108.50** | **Airborne Collision Avoidance System (ACAS)** |
| 108.50.2 | Identify the meaning of acronyms associated with ACAS. |
| 108.50.4 | Describe how ACAS equipment operates. |
| 108.50.6 | State the actions taken by pilots and controllers in the event of a traffic advisory (TA) ACAS incident. |
| 108.50.8 | State the actions taken by pilots and controllers in the event of a resolution advisory (RA) ACAS incident. |
| 108.50.10 | State the procedures for the reporting of an ACAS event. |
| | **Emergencies** |
| **108.52** | **Emergency Procedures** |
| 108.52.2 | Describe the actions a controller should take in the event of a CPDLC or ADS-C emergency message. |
| 108.52.4 | Explain the process in the event of an emergency mode ADS-C. |
| 108.52.6 | Describe the requirements for confirmation of emergency, acknowledging emergency and executive control responsibility. |
| **108.54** | **Contingency Procedures** |
| 108.54.2 | Briefly describe what the duty controller should do in the event of a full evacuation of Auckland Oceanic Control Centre. |
| 108.54.4 | State the three OCS contingency phases. |
| 108.54.6 | State the objective of the recovery phase. |
| 108.54.8 | State the time at which aircraft are permitted to enter the Auckland OCA during the recovery phase. |
| 108.54.10 | Describe the objective of the limited ATS phase and any restrictions. |
| 108.54.12 | Explain what is meant by third level contingency. |
| 108.54.14 | Explain actions taken by controllers in the event evacuation from work place is required, including traffic recovery. |
| 108.54.16 | State where you would locate documentation for handling unusual/emergency situations, such as bomb threat and evacuation. |
| 108.54.18 | State where you would locate information on procedures and initial actions for handling aviation accidents and incidents. |
| **108.56** | **ATS Equipment Failure** |
| 108.56.2 | Explain how to recognise system degradation or complete failure of the OCS system. |
| 108.56.4 | Describe in general terms how to respond to a complete failure of the OCS system. |
| 108.56.6 | Describe the actions a controller must take in the event of a potential stall or partial |

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| | failure of the OCS main platform and OCS is without standby workstation or FDP. |
| 108.56.8 | Describe the difference between a hot start and a cold start when restarting the OCS main platform. |
| 108.56.10 | Describe how OCS failure conditions are categorised. |
| 108.56.12 | Explain in general terms how to transfer control between platforms. |
| 108.56.14 | Explain in general terms how to transfer air traffic control to a manual paper flight strip procedure and the control provided. |
| 108.56.16 | Describe the process for recovery to OCS reserve platform. |
| 108.56.18 | Describe the process for recovery back to OCS main platform. |
| 108.56.20 | Describe how to rebuild an aircraft's profile after an individual conflict prediction and reporting (CPAR) failure. |
| 108.56.22 | Describe the effects on operations of navigation aid degradation or failure and appropriate procedures to be followed. |
| 108.56.24 | Describe the procedures to be followed in the event of a partial or total ground-ground voice communication system (VCS) equipment failure. |
| 108.56.26 | Describe the effects on operation of a power failure, including reference to UPS/generator back up. |
| 108.56.28 | Describe in general terms the process in the event of failure of HF transmitters and/or receivers. |
| 108.56.30 | Describe in general terms the effect on operations of the total failure of the X25 ARINC gateways. |
| 108.56.32 | Describe in general terms the effect on operations of the total failure of the AFTN. |
| 108.56.34 | Describe in general terms the process for the air-ground operator to follow in the event of the failure of air log. |
| **108.58** | **Administration** |
| 108.58.2 | Explain the procedures for:<br>(a) determining hours of service;<br>(b) promulgating hours of service;<br>(c) extension to hours of service. |
| 108.58.4 | Describe the overall requirements for staffing at ATS operating positions. |
| 108.58.6 | Describe the Personnel Licensing requirements for the area control automatic dependent surveillance rating including the training plan objectives. |
| 108.58.8 | Explain the feedback/ assessment mechanisms available for a trainee within the training plan for the area control automatic dependent surveillance rating. |
| 108.58.10 | Describe the medical fitness requirements for exercising an area control automatic |

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| | dependent surveillance rating. |
| 108.58.12 | Describe the recent experience requirements for exercising an area control automatic dependent surveillance rating. |
| 108.58.14 | Describe the requirements for ATS personal log books. |