



Advisory Circular

AC65-7.4

Revision 1 (3)

Air Traffic Service Personnel Licences and Ratings—Air Traffic Controller Ratings—Area Control Procedural Rating

11 May 2016

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.

AMC means of compliance 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.

An advisory circular may also include **Guidance Material (GM)** to facilitate compliance with the rule requirements. GM must not be regarded as an acceptable means of compliance.

Purpose

This advisory circular provides guidance on general requirements related to air traffic service personnel licences and ratings.

This material is intended for applicants for air traffic service personnel licences and ratings, holders of air traffic service personnel licences and ratings, air traffic service instructors, air traffic service examiners, training organisations, and air traffic service organisations.

Related Rules

This advisory circular relates to Civil Aviation Rules Part 65 Subpart G – specifically rule 65.301(1)(iv).

Change Notice

Subject to “Memorandum for Technical Cooperation” between the CAA of Mongolia and New Zealand on mutual cooperation in implementation of Assembly Resolution A29-3: Global Rule Harmonization, 29th ICAO Assembly, 1992, which urges States to promote global harmonization of national rules, dated 6th of May, 1999, Mongolian Civil Aviation Safety Regulation has been reconciled to the Civil Aviation Regulation of New Zealand.

Amendment 164 of Annex 1 to the Chicago Convention on International Civil Aviation urges flight crew members, ATC personnel and aircraft maintenance engineers to comply with the language proficiency requirements; and

Under Article 14 of the Civil Aviation Law of Mongolia 1999, "Use of foreign language in civil aviation" the AC has been released in English version only, in order to prevent any mistranslation and misuse of the aviation safety related documents.

Table of Contents

Introduction..... 4

Advisory Circular Intent and Process..... 5

Subpart G — Air Traffic Controller Ratings..... 6

 Area control procedural rating 6

APPENDIX A — Subject No 106–Area Control Procedural Rating 7

 Syllabus..... 7

APPENDIX B — Subject No 108 – Area Control Procedural Rating 20

 Syllabus..... 20

Introduction

Civil Aviation Rule, Part 65 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 area control, automatic dependent surveillance ratings, instructor ratings, examiner ratings, and flight service operator licences.

This advisory circular forms part of a series of advisory circulars that support these rules - one for each required rating.

Advisory Circular Intent and Process

This advisory circular provides guidance on how to comply with rule 65.301(1)(iv).

The Civil Aviation Authority of Mongolia 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 procedural rating

65.301 Applicability

Subpart G prescribes rules governing the issue and validation of air traffic controller ratings, the privileges and limitations of those ratings, and where a person's air traffic controller rating refers.

65.301(1)(iv), 2 and (3)(iii) are specific to area control procedural rating.

65.303 Eligibility requirements

65.303(a)(2)(ii) and (4) require an applicant for an area control procedural 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; and emergency and search and rescue plans.

Successful assessment based on the syllabus content given in Appendix A of this advisory circular would meet this requirement.

The previous area control automatic dependent surveillance rating is now a subset of the area control procedural rating. During the transition period, training will be drawn from Appendix A and/or B in accordance with Part 141/172 organisation's exposition.

APPENDIX A — Subject No 106–Area Control Procedural 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 feedback to the examination candidate.

Sub Topic	Syllabus Item
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	Air Traffic Services and Airspace Management
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106.2	General
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106.2.2	Explain the objectives of air traffic services.
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106.2.4	State the categories air traffic services are divided into.
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106.4	Air traffic control service
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106.4.2	Define air traffic control service.
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106.4.4	Explain the responsibility for the provision of an air traffic control service.
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106.4.6	Define area control procedural service.
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106.4.8	Describe the responsibilities and directives of an area control procedural controller.
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106.6	Flight information service
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106.6.2	Define flight information service.
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106.6.4	Describe the scope of the flight information service.
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106.6.6	Explain the responsibility for the provision of the flight information service.
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106.6.8	Describe the information passed to a flight on first contact.
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106.6.10	Define traffic information.
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106.6.12	State when traffic information is passed.
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106.6.14	Describe traffic avoidance advice including relevant information to be passed.
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106.6.16	State when traffic avoidance advice is passed.
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106.6.18	Explain ATS responsibilities for IFR traffic information in Class G airspace.
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106.6.20	Describe the requirements for exchange of movement data for non-controlled flights.
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106.6.22	Explain the ATIS procedures.
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106.6.24	Describe the controller's actions and requirements on receiving pilot reports on significant weather.
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Sub Topic	Syllabus Item
106.8	Alerting service
106.8.2	Define alerting service.
106.8.4	Describe the scope of the alerting service.
106.8.6	Explain the responsibility for the provision of the alerting service.
106.8.8	Explain the actions taken in the provision of the alerting service.
106.8.10	Explain the alerting service emergency phases.
106.8.12	Derive from an in-flight emergency response checklist, the controller's actions in the event of an in-flight emergency.
106.8.14	Explain the initial checks carried out to confirm the operational status of an aircraft.
106.8.16	Define SARTIME.
106.8.18	Describe the process for RCC/ Mongolian Police/CAA notification.
106.10	Airspace management
106.10.2	Describe the requirements for managing and prioritising workload in the provision of air traffic services.
106.10.4	Explain traffic priorities within controlled airspace.
106.10.6	Describe the procedures to follow when it becomes apparent air traffic demand will exceed the available capacity of the ATC system.
106.10.8	Define air traffic management (ATM).
106.10.10	Define air traffic flow management (ATFM).
106.10.12	Explain the tools used for implementing ATFM.
106.12	Performance based navigation
106.12.2	Describe the components of an area navigation system.
106.12.4	Define the following terms: (a) Performance based navigation (PBN); and (b) RNAV; and (c) RNP; and (d) RNP AR.
106.12.6	Explain the use and limitations of GNSS.
106.12.8	Explain values used in association with RNP (and RNAV).
106.12.10	Explain the following procedures: (a) RNAV SIDs; and (b) RNAV STARs, and

Sub Topic	Syllabus Item
	(c) fly by/fly over waypoints; and
	(d) speed/level requirements at waypoints; and
	(e) RNAV approaches; and
	(f) RNP AR approaches and departures; and
	(g) flight plan requirements for RNAV; and
	(h) radar vectoring considerations.
106.12.12	Describe the ATC contingency procedures in the event of GNSS coverage/signal issue, or aircraft equipment failure.
	Co-ordination, Clearances and Instructions
106.14	ATS movement and control messages
106.14.2	Describe air traffic service messages.
106.14.4	Describe the methods of message exchange for ATS messages.
106.14.6	Explain the movement and control messages for automatic distribution of flight plan data within the Flight Data Processor (FDP).
106.14.8	Explain the flight plan management process for filing and creation of flight plans.
106.14.10	Explain the requirements for the following elements of a flight plan: (a) flight plan route field; and (b) mixed flight rules; and (c) use of full registration; and (d) aircraft types; and (e) flight plan other field.
106.14.12	Describe the flight plan process for short term flight plans, including occasions used.
106.14.14	Explain the use of information attached to a correlated label on the situation display (SN).
106.14.16	Explain flight plan management procedures for: (a) flights cancelling IFR and proceeding VFR; and (b) flights cancelling VFR and proceeding IFR.
106.16	Co-ordination tools
106.16.2	Explain the automatic distribution of flight plan data within the Flight Data Processor (FDP).
106.16.4	State the various methods of co-ordination.

Sub Topic	Syllabus Item
106.16.6	Explain the limitations of automatic exchange of ATS data in coordination.
106.16.8	Describe action to be taken when Flight Data Processor (FDP) cannot meet co-ordination time criteria.
106.16.10	Identify: <ul style="list-style-type: none">(a) when an approval request is required; and(b) the associated phraseologies.
106.18	Co-ordination procedures
106.18.2	Describe the general co-ordination criteria for the provision of air traffic services, including: <ul style="list-style-type: none">(a) information about which agreement must be reached; and(b) when co-ordination is required.
106.18.4	Explain the methods for confirmation of co-ordination.
106.18.6	State when a read back of co-ordination is mandatory.
106.18.8	State the time criteria prior to ETA 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.
106.18.10	Describe the procedures relating to estimate messages, including: <ul style="list-style-type: none">(a) occasions when estimates shall be passed; and(b) explanation of an information estimate; and(c) requirements for the use of estimate messages; and(d) elements of an estimate message, including for a departing aircraft; and(e) responsibilities of a controller when accepting an estimate message; and(f) standard phraseologies used.
106.20	Revisions
106.20.2	Identify the requirements for revisions to estimates and current flight plan (CPL) messages in the following circumstances: <ul style="list-style-type: none">(a) changes of routing, including appropriate phraseology; and(b) revisions to ETA; and(c) revisions to level; and(d) revisions to SSR code.
106.20.4	State the standard phraseologies for revisions.

Sub Topic	Syllabus Item
106.20.6	Describe the requirements for confirmation messages when automatic message processing is unavailable for flights crossing the Flight Data Processor (FDP) boundary into the oceanic control system, including the appropriate phraseology.
106.22	Transfer of control and radio guard
106.22.2	Describe the procedures associated with transfer of control, including: (a) elements of a verbal transfer of control message and response; and (b) accepting controller's responsibility; and (c) separation responsibility - 'your separation'; and (d) early release requirements; and (e) phraseologies.
106.22.4	Describe the procedures and actions required by accepting and transferring controller, for transfers of radar control from radar sector to non-radar sector, including appropriate phraseologies.
106.22.6	Describe the following procedures associated with transfer of radio guard: (a) standard RTF contact points; and (b) accepting controller responsibility.
106.24	ATC clearances
106.24.2	Describe the general principles of an ATC clearance, including: (a) validity; and (b) who requires a clearance; and (c) when it can be denied or withheld; and (d) clearance issue, including relay through another agency.
106.24.4	Describe the elements of an ATC clearance.
106.24.6	List the elements of an ATC clearance that must be read back in full by a pilot.
106.24.8	Describe the requirements for issuing clearances to IFR flights to enter or leave controlled airspace.
106.24.10	List the objectives for instructions contained in an ATC clearance for an IFR flight.
106.24.12	Describe the ATS services a clearance to a VFR flight will provide.
106.24.14	List the phrases to be used to authorise an aircraft to operate in controlled airspace.
106.24.16	Explain the term clearance limit.

Sub Topic	Syllabus Item
106.24.18	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.
106.24.20	Describe the procedures associated with route instructions.
106.24.22	Describe the requirements for issuing direct routing to IFR flights within controlled airspace.
106.24.24	Describe the procedures associated with level instructions and identify appropriate phraseologies.
106.24.26	State the procedures for updating the current flight plan (CPL) level information for an aircraft: (a) prior to departure; and (b) in the climb; and (c) in the cruise; and (d) in the descent; and (e) operating under VFR.
106.24.28	Describe the procedures for the assignment of cruising levels to IFR flights, including RVSM requirements.
106.24.30	Explain IFR altimeter setting requirements, including pilot requirements for altimeter setting through the transition layer.
106.24.32	Define MFA, MSA, MRA and MEA, MDA and DA.
106.24.34	State the references that may be used when issuing a descent level to an arriving aircraft.
106.24.36	Explain requirements for issuing an IFR aircraft a cruising level or intermediate level in respect of terrain clearance for the following: (a) evaluated routes; and (b) unevaluated routes; and (c) direct routing; and (d) ATC advice of obstacle clearance.
106.24.38	Describe procedures available to enable flights to operate at safe levels.
106.24.40	Explain approved area MSA including any restrictions that may apply.
106.24.42	Describe procedures associated with departure and diversionary climb instructions and identify relevant phraseologies.
106.24.44	Explain oceanic transitions.
106.24.46	State the separation instructions issued when applying time separation.
106.24.48	Describe the separation and reporting instructions.

Sub Topic	Syllabus Item
106.24.50	State the phraseologies for frequency change instructions.
106.24.52	State the different internal ATC release instructions issued to departing aircraft, including delivery instructions.
106.24.54	Demonstrate examples for the following: <ul style="list-style-type: none">(a) basic clearance formats; and(b) entering controlled airspace; and(c) leaving controlled airspace.
106.26	Holding instructions
106.26.2	Describe the reasons for issuing holding Instructions, including where an aircraft may be instructed to hold.
106.26.4	State the elements of a clearance to enter a holding pattern for the following situations: <ul style="list-style-type: none">(a) published holding pattern; and(b) two navigation aids same name; and(c) when holding at a DME distance on a VOR radial; and(d) where the significant point is an instrument approach segment identifier; and(e) published significant point on an ATS route or arrival procedure; and(f) other than in an established and published holding pattern; and(g) pilot unfamiliar with pattern.
106.26.6	Explain the following terms: <ul style="list-style-type: none">(a) onwards clearance time; and(b) expected approach time.
	Procedures and Control of Flights
106.28	IFR procedures
106.28.2	Define the following terms: <ul style="list-style-type: none">(a) IFR flight; and(b) IMC; and(c) exact and non-exact reporting points and waypoints; and(d) holding patterns, including entry.
106.28.4	Describe the position reporting requirements under IFR in the UB FIR.
106.30	Arrival procedures
106.30.2	Describe standard instrument arrival procedures (STAR), including exceptions and appropriate phraseologies.

Sub Topic	Syllabus Item
106.30.4	Describe the procedures for lateral diversions on a STAR, including appropriate phraseologies.
106.30.6	Describe the procedure for an aircraft leaving controlled airspace on an instrument approach, including the appropriate phraseology.
106.32.	Military operations
106.32.2	Describe the co-ordination and flight planning procedures to be followed for military operations.
106.32.4	Describe the procedures for military aircraft with respect to level allocation.
106.32.6	Describe the procedures to be used by Mongolian Air Force aircraft on surveillance patrols.
106.34.	Glider operations
106.34.2	State the airspace where glider operations require a clearance to enter.
106.34.4	State the requirements for glider flights in IMC.
106.36.	Parachute operations and entry of balloons, rockets etc. into controlled airspace
106.36.2	State the airspace or area within which parachute descents may be conducted.
106.36.4	State the requirements for parachute descents within controlled airspace.
106.36.6	Explain the procedures required for entry of balloons, rockets etc. into controlled airspace.
	Equipment
106.38	ATS equipment
106.38.2	Explain in general terms the automated Flight Data Processing System (FDPS).
106.38.4	Explain in general terms the function of each piece of equipment, including information displayed, available on the controller work position (CWP).
106.40	Airborne collision avoidances system (ACAS)
106.40.2	Describe how ACAS equipment operates.
106.40.4	State the actions taken by pilots and controllers in the event of a traffic advisory (TA) ACAS incident.
106.40.6	State the actions taken by pilots and controllers in the event of a resolution advisory (RA) ACAS incident.
106.40.8	State the procedures for the reporting of an ACAS event.

Sub Topic	Syllabus Item
106.42	SSR procedures
106.42.2	Explain flight plan SSR code management.
106.42.4	Describe the procedures for handling non-transponder equipped aircraft in transponder mandatory controlled airspace.
106.44	ATS equipment failure
106.44.2	Explain how to recognise system degradation or complete failure of ATS equipment, including but not limited to: (a) flight data processing system; and (b) navigation aids (NAVAID) including monitoring facilities; and (c) voice communication system; and (d) main and standby power supply; and (e) equipment on controller work position (CWP).
106.44.4	Describe the procedures to be followed in the event of failure or partial failure of ATS equipment including the location of supporting documentation to the Operations Manual.
	Procedural Separation
106.46	General
106.46.2	Describe the requirements for the provision of separation and methods applied.
106.46.4	Explain the scope for the provision of separation.
106.46.6	Describe the provision of separation to military aircraft.
106.46.8	Define same track, reciprocal tracks, and crossing tracks.
106.46.10	State when separation can be reduced or increased.
106.46.12	Describe the actions to be taken in the event of a loss of separation.
106.46.14	State the elements of essential traffic information.
106.48	Visual separation
106.48.2	Explain visual separation.
106.48.4	Define the terms used in the provision of visual separation.
106.48.6	Explain the requirements for the application of visual separation beyond the vicinity of aerodromes, including pilot responsibilities and appropriate phraseologies.
106.48.8	List the requirements before clearing an IFR flight to maintain own separation in VMC, including pilot responsibilities.
106.48.10	Describe pilot responsibilities when ATC is applying visual separation.

Sub Topic	Syllabus Item
106.48.12	Describe the information given when requiring a pilot to sight another aircraft for the application of visual separation.
106.50	Vertical separation
106.50.2	State the vertical separation minima.
106.50.4	State the vertical separation minima as it applies to the transition layer.
106.50.6	Describe the requirements to be met prior to clearing an aircraft to a level when the aircraft occupying that level reports vacating.
106.50.8	State the vertical separation standards and procedures for reduced vertical separation minima (RVSM).
106.50.10	Describe the requirements for Non-RVSM operations.
106.50.12	Describe the ATS monitoring requirements for altitude deviations in RVSM airspace.
106.52	Lateral separation
106.52.2	Describe the types of lateral separations.
106.52.4	Describe the procedures and application of lateral separations, including: (a) provisos for their use; and (b) definitions of lateral separation terms; and (c) how lateral separation points are depicted; and (d) use of GNSS.
106.52.6	Explain the use of the lateral separation table.
106.52.8	Explain track separation.
106.54	Longitudinal separation
106.54.2	State the separation standard for longitudinal separation between aircraft operating within the UB FIR.
106.54.4	State the longitudinal separation standards and procedures based on time.
106.54.6	Describe the methods of establishing longitudinal separation based on time.
106.54.8	State the longitudinal separation standards and procedures based on distance.
106.54.10	Describe the methods of establishing longitudinal separation based on distance.
106.54.12	Explain the methodology used for speed differential or comparison when required by longitudinal separations.

Sub Topic	Syllabus Item
106.56	Separation from aircraft in holding patterns
106.56.2	State the requirements for applying lateral separation from an aircraft in a holding pattern, including exceptions.
106.56.4	State the separation and requirements for aircraft leaving a navigation aid against aircraft holding over the navigation aid.
106.56.6	State the separation and requirements for aircraft approaching a navigation aid against aircraft holding over the navigation aid.
106.58	Wake turbulence separation
106.58.2	State the distance based wake turbulence separations.
106.60	Separation from special use airspace (SUA), general aviation areas (GAA), parachute operations, fuel dumping and aerobatics
106.60.2	State the vertical and horizontal separations from SUA and GAA, including exceptions.
106.60.4	State the separation levels above SUA/GAA/aerobatics for aircraft above 4,500 m (13,000ft) when the zone area QNH is: (a) above 1013 hPa; and (b) 1013 and below but above 980 hPa; and (c) 980 hPa or below.
106.60.6	State the separation requirements from parachute operations.
106.60.8	State the separation requirements from aircraft fuel dumping.
106.60.10	State the separation requirements from aerobatics in controlled airspace.
	Local Knowledge
106.62	Geography and airspace
106.62.2	Describe the geography and general weather of the area control sector environment, including: (a) topography and local weather patterns; and (b) locations of airfields and directions of runways; and (c) rivers, towns and prominent features.
106.62.4	Define the area of responsibility for the area control sector.
106.62.6	For the area control sector and adjacent area flight information and approach control sectors derive from appropriate maps and charts the following: (a) controlled airspace and airspace classification; and (b) general aviation areas and special use airspace; and (c) holding patterns, reporting points and navigation aids; and

Sub Topic	Syllabus Item
	(d) surveillance (radar) sites and performance; and (e) frequencies, including aerial sites locations.
106.64	Sector procedures
106.64.2	Explain the sector air traffic management procedures for IFR aircraft, including: (a) route structure, including SIDs, STARs, and SRCs; and (b) inbound/outbound traffic flow; and (c) holding requirements; and (d) descents, including minimum descents and terrain clearance; and (e) runway change procedures.
106.64.4	Describe the sector and position specific responsibilities including the operation of positions within the sector.
106.64.6	Describe the requirements for an adequate pre duty briefing.
106.64.8	Describe the procedures for opening or taking over a watch.
106.64.10	Describe the procedures for closing or handing over watch, including any sector specific handover techniques.
106.64.12	Describe the sector's equipment check requirements and use of ATS position log strip.
106.64.14	Describe the adjacent sectors and towers off watch procedures.
106.64.16	Explain the sectors use of flight progress strips/systems including strip marking.
106.64.18	Describe the flight progress board display of meteorological and NOTAM information on position.
106.64.20	Describe the recommended techniques used for scanning the controller work position.
106.66	Aircraft performance
106.66.2	Describe the performance characteristics of common aircraft operating within the area control sector, including: (a) rates of climb/descent and maximum/minimum speeds; and (b) deterioration/variation of weather effecting aircraft operations and separations; and (c) IFR training.
106.68	Co-ordination
106.68.2	Describe the sector coordination requirements with adjacent: (a) approach sectors; and

Sub Topic	Syllabus Item
	(b) area sectors; and
	(c) FIS areas.
106.70	Administration
106.70.2	Explain the procedures for: (a) determining hours of service; and (b) promulgating hours of service; and (c) extension to hours of service.
106.70.4	Describe the overall requirements for staffing at ATS operating positions.
106.70.6	Describe the Personnel Licensing requirements for the area control procedural rating including the training plan objectives.
106.70.8	Explain the feedback/ assessment mechanisms available for a trainee within the training plan for this area control procedural rating.
106.70.10	Describe the medical fitness requirements for exercising an area control procedural rating.
106.70.12	Describe the recent experience requirements for exercising an area control procedural rating.
106.70.14	Describe the ATS personal log book keeping requirements.
106.72	Emergencies
106.72.2	Explain actions taken by controllers in the event evacuation from work place is required, including traffic recovery.
106.72.4	State where you would locate documentation for handling unusual/emergency situations, such as bomb threat and evacuation.
106.72.6	State where you would locate information on procedures and initial actions for handling aviation accidents and incidents.

APPENDIX B — Subject No 108 – Area Control Procedural Rating

(Note: replacing the 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 feedback 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.
108.6	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 UB FIR.
108.6.12	Describe the requirements for the provision of traffic information in the UB FIR.
108.6.14	Describe the requirements for handling VFR flights in the UB 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.

Sub Topic	Syllabus Item
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 UB FIR.
108.8.16	Define SARTIME.
108.8.18	Describe the process for RCC/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 UB 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 UB 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 UB 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.

Sub Topic	Syllabus Item
	Co-ordination, Clearances and Instructions
108.14	Co-ordination procedures
108.14.2	Explain the flight plan process for flight within the UB FIR, including: <ul style="list-style-type: none">(a) ICAO flight plan formats; and(b) flight plan states; and(c) flight plan correction; and(d) flight plan route truncation; and(e) manual flight plan deletion; and(f) manual input of flight plans; and(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: <ul style="list-style-type: none">(a) information about which agreement must be reached; and(b) when co-ordination is required.
108.14.8	Describe the automated co-ordination functions provided by oceanic control system (OCS).
108.14.10	Explain the limitations of automatic exchange of ATS data in co-ordination.
108.14.12	State when a read back of co-ordination 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: <ul style="list-style-type: none">(a) occasions when estimates shall be passed; and(b) explanation of an information estimate; and(c) requirements for the use of estimate messages; and(d) elements of an estimate message, including for a departing aircraft; and(e) responsibilities of a controller when accepting an estimate message; and(f) standard phraseologies used.
108.14.20	Explain the specific co-ordination procedures for pre- departure co-ordination from aerodromes within the UB FIR.

Sub Topic	Syllabus Item
108.14.22	Explain the specific co-ordination procedures for pre-departure co-ordination with adjacent ATS units.
108.14.26	Explain the Letter of Agreement requirements for FIR adjacent FIRs/ATS units to the adjacent centers including transfer and RTF points.
108.14.28	Describe the different types of air traffic services inter-facility data communications (AIDC) messages, including: (a) their purpose; and (b) AIDC message identifiers; and (c) sequence of AIDC messages; and (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 conflicts and providing separation for flights entering and/or leaving oceanic airspace.
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 UB 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; and (b) revisions to ETO and/or ETA; and (c) revisions to level; and (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; and (b) accepting controller's responsibility; and (c) separation responsibility - 'your separation'; and (d) early release requirements; and

Sub Topic	Syllabus Item
	(e) phraseologies.
108.18.4	Describe the following procedures associated with transfer of radio guard: (a) standard RTF contact points; and (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; and (b) elements and what they are required to achieve; and (c) who requires a clearance; and (d) when it can be denied or withheld; and (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 an 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; and (b) route description, use of flight planned route; and (c) actions to be taken in the event of hazardous weather conditions; and (d) revised route instructions; and

Sub Topic	Syllabus Item
	(e) direct routing and unevaluated routes.
108.20.24	Describe the procedures associated with level instructions and identify appropriate phraseologies, including: <ul style="list-style-type: none">(a) obstacle clearance reference; and(b) IFR cruising level requirements; and(c) non-standard levels block levels, changes of level; and(d) VFR levels.
108.20.26	Explain how to construct and deliver clearance in the following circumstances: <ul style="list-style-type: none">(a) processing HF request; and(b) processing CPDLC request; and(c) processing a departure request; and(d) processing a clearance request; and(e) conditional clearance; and(f) clearance acknowledgment.
108.20.28	Describe the clearance requirements using CPDLC, including: <ul style="list-style-type: none">(a) altitude change clearances; and(b) issuing conditional altitude change clearances; and(c) level report requirements for climb or descent clearances; and(d) clearances into block levels; and(e) cancelling block altitude clearances; and(f) requesting an aircrafts speed; and(g) advising a wake turbulence offset; and(h) direct tracking-UPR aircraft.
108.20.30	Describe the requirements to be considered in the event of multi element requests, including: <ul style="list-style-type: none">(a) avoiding multiple element clearance requests; and(b) responding to multiple element clearance requests; and(c) multiple clearance requests in one message: all approved; and(d) multiple clearance requests in one message: all not approved; and(e) multiple clearance requests in one message: some approved/some not approved; and(f) multi- element uplink messages; and

Sub Topic	Syllabus Item
	(g) combining multiple elements into a single message; and (h) time dependent clearance.
108.20.32	Describe the appropriate response to requests that cannot be approved.
108.20.34	Explain the process when a request for cruise climb is made.
108.20.36	Explain the general procedures for the issuance of a clearance by an oceanic controller, including constraints.
108.20.38	Explain the process for relaying a clearance.
108.20.40	State the standard clearances to be used for delivery of descent clearance/traffic information, including occasions when they can be abbreviated.
108.20.42	Explain the requirements for weather deviations.
108.20.44	Explain the requirements for lateral offset.
108.20.46	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.
108.20.60	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: (a) basic clearance formats; and (b) entering controlled airspace; and (c) leaving controlled airspace.
108.22	Position reporting
108.22.2	Describe the position reporting requirements for an IFR flight.
108.22.4	Describe the process of position reporting in the UB FIR, including: (a) HF position reports; and (b) ADS-C position reports; and

Sub Topic	Syllabus Item
	(c) CPDLC position reports; and
	(d) FMC position reports; and
	(e) radar position reports; and
	(f) manual entry; and
	(g) discrepancies between ADS-C and CPDLC estimates.
108.22.10	Define navigational error.
108.22.12	Explain the position reporting requirement in the CPDLC environment, including: <ul style="list-style-type: none">a) downlink of position report; andb) user preferred route (UPR) position reports; andc) first position report; andd) sending of ATC waypoints only; ande) updating a waypoint estimate/non-compulsory waypoints; andf) non-receipt of a scheduled position reports; andg) sequencing “abeam” waypoints in excess of FMS parameters; andh) 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: <ul style="list-style-type: none">(a) published holding pattern; and(b) two navigation aids same name; and(c) when holding at a DME distance on a VOR radial; and(d) published significant point on an ATS route or arrival procedure; and(e) other than in an established and published holding pattern; and(f) pilot unfamiliar with pattern.
108.24.6	Explain the following terms: <ul style="list-style-type: none">(a) onwards clearance time; and(b) expected approach time.
108.24.8	State how controllers can protect a holding aircraft in the UB FIR.

Sub Topic	Syllabus Item
108.26	UB FIR
108.26.2	Describe the lateral limits of the UB FIR, including: (a) vertical dimensions; and (b) easternmost and westernmost boundaries.
108.26.4	Describe the general weather patterns within the UB FIR.
108.26.6	Define the area of responsibility for UB Control.
108.26.8	Derive from appropriate maps and charts relevant information, including: (a) controlled airspace and airspace classification; and (b) route system; and (c) aerodromes within the UB FIR; and (d) special use airspace; and (e) adjacent ATS units airspace and FIRs, including vertical dimensions; and (f) most commonly used routes; and (g) frequencies; and (h) navigation aids.
108.26.10	Describe the portion of the UB 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; and (b) the event contract; and (c) cancelling ADS contracts; and (d) ADS-C report; and (e) the on demand contract; and
108.28.6	Explain the factors to be considered when using ADS-C, including: (a) vertical and lateral variations; and (b) figure of merit (FOM) data in ADS-C reports; and (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; and (b) allocation of ADS-C connections; and

Sub Topic	Syllabus Item
	(c) monitoring of an aircraft operating close to an airspace boundary; and
	(d) other ground facilities requesting ADS-C contracts; and
	(e) ADS-C connections not available; and
	(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 UB FIR, including:
	(a) aircraft in heading select mode; and
	(b) sequencing subsequent waypoints.
108.30	Oceanic control system N/A
108.32	Data link and CPDLC
108.32.2	Explain the operation of data link in UB FIR.
108.32.4	Describe the process for the pre-flight phase for data link, including:
	(a) identifying data link aircraft; and
	(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; and
	(b) initiation of AFN LOGON; and
	(c) purpose of an AFN LOGON; and
	(d) response to an AFN LOG ON; and
	(e) AFN LOGON triggered by address forwarding; and
	(f) purpose and procedure; and
	(g) an aircraft transferring from one data link area to another; and
	(h) aircraft transiting data link areas.
108.32.10	Explain the purpose of the CPDLC connection, including:
	(a) active and inactive CPDLC connections; and
	(b) establishing an active CPDLC connection.
108.32.12	Describe CPDLC capability including:
	(a) downlink messages; and
	(b) uplink messages; and

Sub Topic	Syllabus Item
	(c) armable messages.
108.32.14	Explain the use of pre-formatted and free text messages, including: (a) preferred use of pre-formatted messages; and (b) standardised free text messages; and (c) storing free text.
108.32.16	Describe the requirements for the exchange of CPDLC messages, including: (a) message assurance; and (b) ambiguous dialogues; and (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; and (b) negative response to a clearance request; and (c) conditions relating to a specific clearance; and (d) affirmative response to a negotiation request; and (e) negative response to a negotiation request; and (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; and (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; and (b) re-sending a message when an alert has been received; and (c) second identical request after an uplink standby message; and (d) multiple identical requests.
108.32.24	Describe the process of message closure, including: (a) answering an uplink free text; and (b) dialogue commenced via CPDLC and continued via voice; and (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; and

Sub Topic	Syllabus Item
	(b) AFN LOGON triggered by address forwarding message; and
	(c) sequence of the NDA and FN_CAD messages; and
	(d) change of the NDA; and
	(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; and (b) end service failure due pending up/downlink; and (c) correct use of CPDLC messages; and (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; and (b) deterioration/variation of weather effecting aircraft operations and separations; and (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 Oceanic radar sector.
108.34.10	Describe the requirements for the mandatory traffic advisory frequency (MTAF), including: (a) airspace definition; and (b) flight plan termination; and (c) 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; and (b) processing of flight details data.
108.34.20	Describe the recommended handover technique, equipment checks and use of sign on strips.

Sub Topic	Syllabus Item
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) out of conformance AIREP processing; and (b) penultimate AIREPs; and (c) 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 UB radio.
108.36.12	Describe the process for clearance issue and coordination of flight departing from airfields within the UB FIR.
108.36.14	Describe the process for flight arriving into aerodromes within the UB FIR.
108.36.16	Describe in general terms the responsibilities and requirements of the aeronautical telecommunications system.
	Separation within UB FIR
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	State when separation can be reduced or increased.
108.38.12	Describe the actions to be taken in the event of a loss of separation.
108.38.14	State the elements of essential traffic information.
108.38.16	Define the term common point.
108.38.18	Explain the use of ADS-C for separation, including:

Sub Topic	Syllabus Item
	(a) appropriate ADS-C reporting requirements; and (b) appropriate separation standard.
108.38.20	State the requirements for the provision of domestic separation.
108.38.22	State the requirements for the application of RNP separation.
108.38.24	State the separation standard when degraded RNP.
108.38.26	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 UB 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 UB FIR is certified for RVSM operations.
108.40.12	Describe the requirements for non-RVSM operations.
108.40.14	Describe the requirements for altitude deviations in RVSM airspace.
108.40.16	Describe RVSM designated airspace.
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 UB 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.

Sub Topic	Syllabus Item
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 UB 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 UB FIR.
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.
108.44.18	Describe the use of ADS-C in the provision of longitudinal separation including: <ul style="list-style-type: none">(a) establishing longitudinal separation; and(b) using extrapolated or interpolated positions; and(c) validity of displayed information; and(d) time-based separation; and

Sub Topic	Syllabus Item
	(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.
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 N/A
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 UB Control Centre.
108.54.4	State the objective of the recovery phase.
108.54.6	State the time at which aircraft are permitted to enter the Auckland OCA during the recovery phase.
108.54.8	Describe the objective of the limited ATS phase and any restrictions.
108.54.10	Explain what is meant by third level contingency.

Sub Topic	Syllabus Item
108.54.12	Explain actions taken by controllers in the event evacuation from work place is required, including traffic recovery.
108.54.14	State where you would locate documentation for handling unusual/emergency situations, such as bomb threat and evacuation.
108.54.16	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 control system.
108.56.4	Describe in general terms how to respond to a complete failure of the ATC system.
108.56.6	Describe the actions a controller must take in the event of a potential stall or partial failure of the ATC main platform and ATC is without standby workstation or FDP.
108.56.8	Describe the difference between a hot start and a cold start when restarting the ATC main platform.
108.56.10	Describe how ATC 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 ATC reserve platform.
108.56.18	Describe the process for recovery back to ATC 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.

Sub Topic	Syllabus Item
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: (a) determining hours of service; and (b) promulgating hours of service; and (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 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.

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