Civil Aviation Safety Authority
of Papua New Guinea

Advisory Circular

AC65-7.3

Air Traffic Service Personnel Licences and Ratings – Air Traffic Controller Ratings – Approach Control Surveillance Rating

Issue 1

31 October 2022

GENERAL

Civil Aviation Safety Authority Advisory Circulars (AC) 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.

An Advisory Circular may also include Guidance Material to facilitate compliance with the rule requirements. Guidance Material must not be regarded as an acceptable means of compliance.

PURPOSE

This Advisory Circular provides the syllabus for training and assessment for applicants for an approach control surveillance rating.

RELATED CAR

This AC relates specifically to Civil Aviation Rule Parts 65 Subpart C – 65.201(1)(iii).

CHANGE NOTICE

This AC replaces Initial Issue dated 30 November 2017.

APPROVAL

This AC has been approved for publication by the Director of Civil Aviation.

Published by Civil Aviation Safety Authority of Papua New Guinea

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Introduction

Civil Aviation Rule, Part 65 *Air Traffic Service Personnel Licences and Ratings* was issued on 1 January 2004. 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 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 65.201(1)(iii).

The Civil Aviation Safety Authority (CASA) 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 C – Air Traffic Controller Ratings

Approach Control Surveillance Rating

Rule 65.201 Purpose

Subpart C 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.

Rules 65.201(1)(iii) and (2) are specific to **approach control surveillance rating**.

Rule 65.203 Eligibility requirements

Rules 65.203(a)(2)(iii), (3)(ii) and (4) require an applicant for an approach control 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 radar, other surveillance systems and associated equipment; procedures for the provision of approach radar control services, as appropriate, including procedures to ensure appropriate terrain clearance.

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

Appendix A – Subject No 105 – Approach Control 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 and Airspace Management	
105.2	**General**
105.2.2	Explain the objectives of air traffic services.
105.2.4	State the categories air traffic services are divided into.
105.4	**Air traffic control service**
105.4.2	Define air traffic control service.
105.4.4	Explain the responsibility for the provision of an air traffic control service.
105.4.6	Define aerodrome control service.
105.4.8	Describe the requirements for the provision of a radar control service.
105.4.10	State the radar services that may be provided to an identified aircraft, including circumstances that may limit the provision of these services.
105.4.12	Describe the responsibilities and directives of an approach controller.
105.4.14	Describe the responsibilities and directives of planner controllers.
105.4.16	Describe the responsibilities and directives of radar controllers.
105.4.18	Describe the divisions of responsibility between aerodrome and approach control.
105.6	**Flight information service**
105.6.2	Define flight information service.
105.6.4	Describe the scope of the flight information service.
105.6.6	Explain the responsibility for the provision of the flight information service.
105.6.8	Describe the information passed to a flight on first contact.
105.6.10	Define traffic information.
105.6.12	State when traffic information is passed.
105.6.14	Explain ATS responsibilities for IFR traffic information in Class F airspace.
105.6.16	Describe traffic avoidance advice including relevant information to be passed.
105.6.18	State when traffic avoidance advice is passed.
105.6.20	Describe a radar flight information service.
105.6.22	Explain the requirements for the provision radar flight information service for the following: (a) traffic information; and (b) unknown aircraft; and (c) information on conflicting traffic.
105.6.24	Describe the requirements for exchange of movement data for non-controlled flights.

105.6.26 Explain the ATS procedures.

105.6.28 Describe the controller's actions and requirements on receiving pilot reports on significant weather.

105.8 Alerting service

105.8.2 Define alerting service.

105.8.4 Describe the scope of the alerting service.

105.8.6 Explain the responsibility for the provision of the alerting service.

105.8.8 Explain the actions taken in the provision of the alerting service.

105.8.10 Explain the alerting service emergency phases.

105.8.12 Derive, from an in-flight emergency response checklist, the controller's actions in the event of an in-flight emergency.

105.8.14 Explain the initial checks carried out to confirm the operational status of an aircraft.

105.8.16 Describe the action to be taken by radar controllers in the event of an aircraft emergency.

105.8.18 Define SARTIME.

105.8.20 Describe the process for RCC/ PNG Police/CAA or CA005 notification.

105.10 Airspace management

105.10.2 Describe the requirements for managing and prioritising workload in the provision of air traffic services.

105.10.4 Explain traffic priorities within controlled airspace.

105.10.6 Describe the procedures to follow when it becomes apparent air traffic demand will exceed the available capacity of the ATC system.

105.10.8 Define air traffic management (ATM).

105.10.10 Define air traffic flow management (ATFM).

105.10.12 Explain the tools used for implementing ATFM.

105.12 Performance based navigation

105.12.2 Describe the components of an area navigation system.

105.12.4 Define the following terms:

(a) Performance based navigation (PBN); and

(b) RNAV; and

(c) RNP; and

(d) RNP AR.

105.12.6 Explain the use and limitations of GNSS.

105.12.8 Explain values used in association with RNP (and RNAV).

105.12.10 Explain the following procedures:

(a) RNAV SIDs; and

(b) RNAV STARs, and

(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.

105.12.12 Describe the ATC contingency procedures in the event of GNSS coverage/signal issue, or aircraft equipment failure.

Co-ordination, Clearances and Instructions

105.14 ATS movement and control messages

105.14.2 Describe air traffic service messages.

105.14.4 Describe the methods of message exchange for ATS messages.

105.14.6 Explain the movement and control messages for automatic distribution of flight plan data within the Flight Data Processor (FDP).

105.14.8 Explain the flight plan management process for filing and creation of flight plans.

105.14.10 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.

105.14.12 Describe the flight plan process for short term flight plans, including occasions used.

105.14.14 Explain the use of information attached to a correlated label on the situation display (SN).

105.14.16 Explain flight plan management procedures for:

(a) flights cancelling IFR and proceeding VFR; and

(b) flights cancelling VFR and proceeding IFR.

105.16 Co-ordination tools

105.16.2 Explain the automatic distribution of flight plan data within the Flight Data Processor (FDP).

105.16.4 State the various methods of co-ordination.

105.16.6 Explain the limitations of automatic exchange of ATS data in co-ordination.

105.16.8 Describe action to be taken when Flight Data Processor (FDP) cannot meet coordination time criteria.

105.16.10 Identify:

(a) when an approval request is required; and

(b) the associated phraseologies.

105.18 Co-ordination procedures

105.18.2 Describe the general co-ordination criteria for the provision of air traffic services, including:

(a) information about which agreement must be reached; and

(b) when co-ordination is required.

105.18.4 Explain the methods for confirmation of co-ordination.

105.18.6 State when a read back of co-ordination is mandatory.

105.18.8 State the time criteria prior to ETA at transfer of control point, within which coordination is required, for all flights between ATS sectors/units, including requirements to be met for a reduction in this time.

105.18.10 Describe the procedures relating to estimate messages, including:

(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.

105.20 Revisions

105.20.2 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 ETA; and

(c) revisions to level; and

(d) revisions to SSR code.

105.20.4 State the standard phraseologies for revisions.

105.22 Transfer of control and radio guard

105.22.2 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.

105.22.4 State when transfer of control shall be affected between approach and aerodrome control for departing and arriving aircraft.

105.22.6 Describe the following procedures for the transfer of radar control between radar sectors:

(a) transferring and accepting controller actions; and

(b) phraseologies; and

(c) methods used.

105.22.8 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.

105.22.10 Describe the following procedures associated with transfer of radio guard:

(a) standard RTF contact points; and

(b) accepting controller responsibility.

105.24 ATC clearances

105.24.2 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.

105.24.4 Describe the elements of an ATC clearance.

105.24.6 List the elements of an ATC clearance that must be read back in full by a pilot.

105.24.8 Describe the requirements for issuing clearances to IFR flights to enter or leave controlled airspace.

105.24.10 List the objectives for instructions contained in an ATC clearance for an IFR flight.

105.24.12 Describe the ATS services a clearance to a VFR flight will provide.

105.24.14 List the phrases to be used to authorise an aircraft to operate in controlled airspace.

105.24.16 Explain the term clearance limit.

105.24.18 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.

105.24.20 Describe the procedures associated with route instructions.

105.24.22 Describe the requirements for issuing direct routing to IFR flights within controlled airspace.

105.24.24 Describe the procedures associated with level instructions and identify appropriate phraseologies.

105.24.26 State the procedures for updating the current flight plan (CFP) 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.

105.24.28 Describe the procedures for the assignment of cruising levels to IFR flights, including RVSM requirements.

105.24.30 Explain IFR altimeter setting requirements, including pilot requirements for altimeter setting through the transition layer.

105.24.32 Define MFA, MSA, MRA and MEA, MDA and DA.

105.24.34 State the references that may be used when issuing a descent level to an arriving aircraft.

105.24.36 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.

105.24.38 State the minimum levels to be used under radar control, including:

(a) advice to pilots; and

(b) descent below the published vertical profile of a STAR.

105.24.40 Describe procedures available to enable flights to operate at safe levels.

105.24.42 Explain approved area MSA including any restrictions that may apply.

105.24.44 Describe procedures associated with departure and diversionary climb instructions and identify relevant phraseologies.

105.24.46 Explain oceanic transitions.

105.24.48 State the separation instructions issued when applying time separation.

105.24.50 Describe the separation and reporting instructions.

105.24.52 State the phraseologies for frequency change instructions.

105.24.54 State the different internal ATC release instructions issued to departing aircraft, including delivery instructions.

105.24.56 Demonstrate examples for the following:

(a) basic clearance formats; and

(b) entering controlled airspace; and

(c) leaving controlled airspace.

105.26 Holding instructions

105.26.2 Describe the reasons for issuing holding instructions, including where an aircraft may be instructed to hold.

105.26.4 State the elements of a clearance to hold for the following situations:

(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.

105.26.6 Explain the terms:

(a) onwards clearance time; and

(b) expected approach time.

Procedures and Control of Flights

105.28 IFR procedures

105.28.2 Define the following terms:

(a) IFR flight; and

(b) IMC; and

(c) instrument runway;

(d) exact and non-exact reporting points and waypoints; and

(e) instrument approach procedure; and

(f) visual reference; and

(g) visual departure; and

(h) visual approach; and

(i) visual arrival procedure; and

(j) holding patterns, including entry; and

(k) missed approach procedure.

105.28.4 Describe the position reporting requirements under IFR in the NZ FIR.

105.30 Arrival procedures

105.30.2 Describe standard instrument arrival procedures (STAR), including exceptions and appropriate phraseologies.

105.30.4 Describe the procedures for lateral diversions on a STAR, including appropriate phraseologies.

105.30.6 With regard to approach commencement:

(a) list the format for the approach procedure when the pilot is unfamiliar; and

(b) describe when an instrument approach can be issued including provisos; and

(c) explain the minimum initial approach altitude.

105.30.8 State the elements of an approach clearance.

105.30.10 State the requirements for identifying the nominated instrument approach, including appropriate clearance phraseology.

105.30.12 State the level restrictions when clearing an aircraft for descent prior to carrying out an instrument approach.

105.30.14 Explain circuit integration requirements.

105.30.16 Explain requirements for circling approaches.

105.30.18 State the requirements for an arriving aircraft to join a DME arc from the inside.

105.30.20 State the requirements for an aircraft when tracking via initial approach to intermediate approach hold, including appropriate phraseologies.

105.30.22 Explain the procedures for the protection of ILS critical areas, including operations in the case of inadvertent inclusions and agreement on protection of critical areas.

105.30.24 State the requirements to be met when radar vectoring an arriving aircraft for an instrument approach.

105.30.26 Describe the following procedures relating to a visual approach:

(a) pilot responsibilities; and

(b) imposing a level restriction on a visual approach.

105.30.28 Describe the requirements that must be met before:

(a) ATC can nominate a visual approach as the preferred IFR approach; and

(b) ATC can issue a visual approach clearance to an arriving IFR flight.

105.30.30 State the requirements to be met when radar vectoring an arriving aircraft for a visual approach.

105.30.32 Describe the requirements for missed approaches in the following cases:

(a) protection of the missed approach; and

(b) termination of the missed approach; and

(c) issuing instruction to amend the missed approach; and

(d) timing of the published missed approach procedure.

105.30.34 Describe the procedure for an aircraft leaving controlled airspace on an instrument approach, including the appropriate phraseology.

105.32. Oceanic flights

105.32.2 Describe the co-ordination procedures for flights departing from the PNG FIR planned to operate in the Oakland Oceanic FIR.

105.32.4 Describe the procedures for flights entering the PNG FIR from the Oakland Oceanic FIR, with respect to level information and SSR codes.

105.34. Military operations

105.34. 2 Describe the co-ordination and flight planning procedures to be followed for military operations.

105.34.4 Describe the procedures for military aircraft with respect to level allocation.

105.38. Parachute operations and entry of RPAS, balloons, rockets etc. into controlled airspace

105.38.2 State the airspace or area within which parachute descents may be conducted.

105.38.4 State the requirements for parachute descents within controlled airspace.

105.38.6 Explain the procedures required for entry of RPAS, balloons, rockets etc. into controlled airspace.

Equipment

105.40 ATS equipment

105.40.2 Explain the working principles of PSR and SSR.

105.40.4 Explain the operation of aircraft transponders.

105.40.6 Explain the use of PSR/SSR in ATC.

105.40.8 Explain the link between PSR/SSR with automated ATC systems.

105.40.10 Explain in general terms the automated Flight Data Processor (FDP) Radar Data Processor (RDP) systems.

105.40.12 Describe the information displayed, including radar symbols, on the situation display (SN).

105.40.14 Explain in general terms the function of each piece of equipment, including information displayed, available on the controller work position (CWP).

105.40.16 Explain the working principles and use of:

(a) MLAT in ATC; and

(b) ADS-B in ATC; and

(c) Mode S in ATC.

105.42. ATS collision protection systems

105.42.2 Explain how Short Term Conflict Alert (STCA) operates.

105.42.4 Describe the controller's responsibilities in the event of a STCA.

105.42.6 Describe procedures for alert suppression of STCA.

105.42.8 Explain how Minimum Safe Altitude Warning (MSAW) operates.

105.42.10 Describe the actions and responsibilities of the controller in a MSAW event.

105.42.12 Describe procedures for the alert suppression of MSAW.

105.44 Airborne collision avoidance system (ACAS)

105.44.2 Describe how ACAS equipment operates.

105.44.4 State the actions taken by pilots and controllers in the event of a traffic advisory (TA) ACAS incident.

105.44.6 State the actions taken by pilots and controllers in the event of a resolution advisory (RA) ACAS incident.

105.44.8 State the procedures for the reporting of an ACAS event.

105.46 Use of surveillance systems in towers

105.46.2 State the policy for the use of surveillance systems in towers.

105.48 ATS equipment failure

105.48.2 Explain how to recognise system degradation or complete failure of ATS equipment, including but not limited to:

(a) Flight Data Processor (FDP); and

(b) Radar Data Processor (RDP); and

(c) navigation aids (NAVAID); and

(d) voice communication system; and

(e) main and standby power supply; and

(f) equipment on controller work position (CWP).

105.48.4 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

105.50 General

105.50.2 Describe the requirements for the provision of separation and methods applied.

105.50.4 Explain the scope for the provision of separation.

105.50.6 Describe the provision of separation to military aircraft.

105.50.8 Define same track, reciprocal tracks, and crossing tracks.

105.50.10 State when separation can be reduced or increased.

105.50.12 Describe the actions to be taken in the event of a loss of separation.

105.50.14 State the elements of essential traffic information.

105.52 Visual separation

105.52.2 Explain visual separation.

105.52.4 Define the terms used in the provision of visual separation.

105.52.6 Explain the requirements for the application of visual separation beyond the vicinity of aerodromes, including pilot responsibilities and appropriate phraseologies.

105.52.8 List the requirements before clearing an IFR flight to maintain own separation in VMC, including pilot responsibilities.

105.52.10 Explain the requirements for the application of visual separation within the vicinity of an aerodrome.

105.52.12 Explain the requirements for the application of composite visual separation.

105.52.14 Describe pilot responsibilities when ATC is applying visual separation.

105.52.16 Describe the information given when requiring a pilot to sight another aircraft for the application of visual separation.

105.54 Vertical separation

105.54.2 State the vertical separation minima.

105.54.4 State the vertical separation minima as it applies to the transition layer.

105.54.6 Describe the requirements to be met prior to clearing an aircraft to a level when the aircraft occupying that level reports vacating.

105.54.8 State the vertical separation standards and procedures for reduced vertical separation minima (RVSM).

105.54.10 Describe the requirements for non-RVSM operations.

105.54.12 Describe the ATS monitoring requirements for altitude deviations in RVSM airspace.

105.56 Lateral separation

105.56.2 Describe the types of lateral separations.

105.56.4 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.

105.54.6 Explain the use of the lateral separation table.

105.54.8 Describe geographical separation, including:

(a) methods of application; and

(b) restrictions on use.

105.54.10 Explain track separation.

105.56 Longitudinal separation

105.56.2 State the longitudinal separation standards and procedures based on time.

105.56.4 Describe the methods of establishing longitudinal separation based on time.

105.56.6 State the longitudinal separation standards and procedures based on distance.

105.56.8 Describe the methods of establishing longitudinal separation based on distance.

105.58 Arrival and departure separations

105.58.2 State the departure separations available for successive IFR departures where tracks diverge by 30º or more.

105.58.4 State the different separations available for separating departing aircraft from arriving aircraft.

105.58.6 State the rules and procedures for separating successive IFR arrivals.

105.58.8 Explain the requirements that must be met before a second aircraft can be cleared for an instrument approach.

105.58.10 State the requirements for lateral separation from a DME or VORTAC arc.

105.58.12 State the separation requirements for protection of the missed approach, including when conditions are at or above the published circling minima.

105.58.14 Describe the protection of the missed approach procedure including criteria and restrictions.

105.60 Separation from aircraft in holding patterns

105.60.2 State the requirements for applying lateral separation from an aircraft in a holding pattern, including exceptions.

105.60.4 State the separation and requirements for aircraft leaving a navigation aid against aircraft holding over the navigation aid.

105.60.6 State the separation and requirements for aircraft approaching a navigation aid against aircraft holding over the navigation aid.

105.62 Wake turbulence separation

105.62.2 Explain the application of wake turbulence minima and any increase or reduction of wake turbulence separation required.

105.62.4 State the time based wake turbulence separations.

105.62.6 State the distance based wake turbulence separations.

105.62.8 State the vertical wake turbulence separations requirements.

105.64 Separation from special use airspace (SUA), general aviation areas (GAA), RPAS, parachute operations, fuel dumping and aerobatics.

105.64.2 State the vertical and horizontal (non-radar) separations from SUA and GAA, including exceptions.

105.64.4 State the separation levels above SUA/GAA/aerobatics for aircraft above 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.

105.64.6 State the separation requirements from parachute operations.

105.64.8 State the separation requirements from aircraft fuel dumping.

105.64.10 State the separation requirements from aerobatics in controlled airspace.

Radar Service

105.66 SSR procedures

105.66.2 Describe the following requirements for the operation of transponders:

(a) transponder mandatory airspace; and

(b) position reporting requirements for transponder equipped aircraft.

105.66.4 Explain SSR code management.

105.66.6 Describe the procedures for the use of formation SSR codes.

105.66.8 Describe the procedures for incorrect code or aircraft identity readout and decorrelation.

105.66.10 Describe the procedures for handling non-transponder equipped aircraft in transponder mandatory controlled airspace.

105.66.12 Describe the procedures and requirement for in-flight transponder failure.

105.68 Application of Mode C altitude display

105.68.2 State the use of Mode C for vertical separation.

105.68.4 Explain the application of Mode C altitude display, including:

(a) verification of Mode C derived level information; and

(b) determination of level occupancy; and

(c) transition layer; and

(d) use of QNH when operating in bypass mode.

105.68.6 List the standard phraseologies used for issuing instructions regarding the operation of transponders.

105.70 Radar emergencies

105.70.2 State the three emergency SSR codes and explain the circumstances for their use, including ATC response.

105.70.4 Describe the actions to be taken by a radar controller in the event of a communications failure.

105.70.6 Describe the action to be taken by radar controllers in the event of a radar failure.

105.70.8 Describe the action to be taken by radar controllers in the event of a ground radio failure.

105.72 Radar identification

105.72.2 State when radar identification shall be established and maintained.

105.72.4 Describe the procedures for the radar identification of aircraft using primary radar.

105.72.6 Describe the procedures for verification of correlation following primary radar identification.

105.72.8 Describe the procedures for the radar identification of aircraft using Secondary Surveillance Radar (SSR).

105.72.10 Describe the requirements when there has been a loss of radar identification or interruption to or unscheduled termination of a radar service.

105.72.12 Describe misidentification and required controller actions.

105.72.14 List the phraseologies associated with radar identification.

105.72.16 Describe the requirements and methods for transfer of radar identification, including appropriate phraseology.

105.72.18 State the occasions when a pilot should be informed of the aircraft's position.

105.74 Radar vectoring

105.74.2 Describe how radar vectoring is achieved and the procedures that apply.

105.74.4 Describe the factors affecting track changes, including:

(a) aircraft performance (rate of turn, angle of turn, aircraft speed); and

(b) effect of wind.

105.74.6 Describe the methods for predicting aircraft position, including:

(a) speed distance and time calculations; and

(b) use of situation display (SN) tools.

105.74.8 Describe the methods to be used for conflict assessment, including:

(a) line of constant bearing; and

(b) use of situation display range and bearing tool.

105.74.10 Describe recommended radar vectoring practices to resolve traffic conflictions in the following situations:

(a) climbing and/or descending on reciprocal tracks; and

(b) overtaking on the same track; and

(c) climbing and/or descending on crossing tracks.

105.74.12 State the airspace classification required for the provision of radar vectoring.

105.74.14 Describe the procedures and requirements for radar vectoring departing aircraft.

105.74.16 Describe the procedures and requirements for radar vectoring arriving aircraft.

105.74.18 State the requirements for the termination of radar vectoring.

105.74.20 State the minimum levels that can be used when radar vectoring.

105.74.22 Explain the advice given to pilots regarding obstacle clearance when radar vectoring, including giving descent below published vertical profile of a STAR.

105.74.24 Explain the objectives of radar monitoring.

105.74.26 Describe the recommended techniques used for scanning the situation display (SN).

105.74.28 Describe the recommended techniques used for scanning the controller work position (CWP).

105.74.30 Explain the use of interpolated tracks.

Radar Separation

105.76 Application of radar separation

105.76.2 State the radar separation standards.

105.76.4 Describe the general application of radar separation.

105.76.6 State the application of radar separation between the following:

(a) departing and other traffic; and

(b) departing and arriving aircraft; and

(c) aircraft on approach; and

(d) identified and unidentified aircraft on the same track; and

(e) identified and unidentified aircraft on reciprocal tracks; and

(f) identified and holding aircraft.

105.76.8 State the methods used for sequencing and spacing of aircraft on approach.

105.78 Speed control

105.78.2 State the types of speed restrictions applicable in controlled airspace.

105.78.4 Describe speed control consideration between aircraft at same or similar levels.

105.78.6 Describe the application of speed control in the following instances:

(a) clearance limit; and

(b) for arriving aircraft; and

(c) on a visual approach.

105.78.8 Describe the standard phraseologies used in the application of speed control.

Local Knowledge

105.80 Geography and airspace

105.80.2 Describe the geography and general weather of the approach 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.

105.80.4 Define the area of responsibility for the approach control sector.

105.80.6 For the approach control sector and adjacent area and aerodrome 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

(d) surveillance (radar) sites and performance; and

(e) frequencies, including aerial locations.

105.80.8 Derive from appropriate maps and charts information on the following:

(a) instrument approaches; and

(b) instrument departures; and

(c) VFR arrival procedures; and

(d) VFR departure procedures.

105.82 Sector procedures

105.82.2 Explain the sector 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.

105.82.4 Describe VFR procedures including control zone sectors and relevant geographic separations.

105.82.6 Describe the sector and position specific responsibilities including the operation of positions within the sector.

105.82.8 Describe the requirements for an adequate pre duty briefing.

105.82.10 Describe the procedures for opening or taking over a watch.

105.82.12 Describe the procedures for closing or handing over watch, including any sector specific handover techniques.

105.82.14 Describe the sector's equipment check requirements and use of ATS position log strip.

105.82.16 Describe the adjacent sectors and towers off watch procedures.

105.82.18 Explain the sectors use of flight progress strips/systems including strip marking.

105.82.20 Describe the flight progress board display of meteorological and NOTAM information on position.

105.84 Aircraft performance

105.84.2 Describe the performance characteristics of common aircraft operating within the approach 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.

105.86 Co-ordination

105.86.2 Describe the sector co-ordination requirements with adjacent:

(a) approach sectors; and

(b) area sectors; and

(c) FIS areas; and

(d) aerodrome control.

105.88 Administration

105.88.2 Explain the procedures for:

(a) determining hours of service; and

(b) promulgating hours of service; and

(c) extension to hours of service.

105.88.4 Describe the overall requirements for staffing at ATS operating positions.

105.88.6 Describe the Personnel Licensing requirements for the approach control surveillance rating including the training plan objectives.

105.88.8 Explain the feedback/ assessment mechanisms available for a trainee within the training plan for the approach control surveillance rating.

105.88.10 Describe the medical fitness requirements for exercising an approach control surveillance rating.

105.88.12 Describe the recent experience requirements for exercising an approach control surveillance rating.

105.88.14 Describe the ATS personal logbook keeping requirements.

105.90 Emergencies

105.90.2 Explain actions taken by controllers in the event evacuation from work place is required, including traffic recovery.

105.90.4 State where you would locate documentation for handling unusual/emergency situations, such as bomb threat and evacuation.

105.90.6 State where you would locate information on procedures and initial actions for handling aviation accidents and incidents.