NAM-CATS 65: Air Traffic Service Personnel Licensing

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INTRODUCTION

1. General

Section 22A of the Aviation Act, 1962 (as amended by section 5 of the Aviation Laws Amendment Act, 1996) empowers the Director for Civil Aviation to issue technical standards for civil aviation on the matters which are prescribed by regulation.

2. Purpose

Document NAM-CATS 65 contains the standards, rules, requirements, methods, specifications, characteristics and procedures which are applicable in respect of cabin crew licensing.

Each reference to a technical standard in this document, is a reference to the corresponding regulation in the Civil Aviation Regulations, 2001, for example, technical standard 65.02.16 refers to regulation 16 of Subpart 02 of Part 65 of the Regulations.

The abbreviation “NAMCARs” or “NAMCAR” is used throughout this document when referring to the Civil Aviation Regulations of 2001 or to any such regulation.

The abbreviation “TS” refers to any technical standard.

3. Schedules and notes

Guidelines and recommendations in support of any particular technical standard are contained in schedules to, and/or notes inserted throughout the technical standards.

65.01.3 CONVERSION OF LICENCE OR RATING ISSUED BY APPROPRIATE AUTHORITY

1. Application for conversion of licence and rating issued by an appropriate authority

The application form FSS PEL 65-04 must be completed for the issuing of the conversion of an air traffic service licence.

2. Requirements and conditions for the issue of a conversion

(a) Any valid foreign air traffic service licence and rating may be converted by the Director subject to the following conditions –

(1) the applicant must pass an examination in air law conducted by the holder of an aviation training organization approval, issued in terms of Part 141;

(2) the applicant must pass a competency assessment conducted by a validation examiner designated by the Director;

(3) the applicant must have held a valid rating in the position for which the conversion is sought for at least one year; and

(4) the rating referred to in (3) above must have been valid within the 6 months immediately prior to application.

3. Issuing of a conversion

(1) Once all requirements have been met, a conversion of an air traffic service licence and rating must be issued by the Director, if he or she is satisfied that:

(a) the applicant complies with the requirements referred to in regulation 65.02.1.

(b) the applicant is a fit and proper person to exercise the privileges of the conversion in accordance with the provisions of the Act, and

(c) the issuing of the conversion is not contrary to the interests of aviation safety..

(2) In instances where an air traffic service licence holder has renewed his conversion for a period of more than 2 years, the Director may consider issuing a Namibian air traffic service licence to the holder of the conversion, should no Namibian licence holders with the applicable ratings be available.

(3) A conversion will be valid for as long as the original licence and rating is valid.

4. Renewal of a conversion issued by the Director

The Director may renew the conversion of an air traffic service licence where he or she is satisfied:

(1) that the holder has, for the duration of the conversion exercised the privileges of the air traffic service licence and rating to which the conversion refers, in accordance with the provisions of the Act, the Regulations and this Document;

(2) that the holder is a fit and proper person to exercise the privileges of the renewed conversion in accordance with the provisions of the Act, and;

the renewal of the conversion is not contrary to the interests of aviation safety..

5. Compliance

The reference to Document NAM-CATS 65 in NAMCAR 65.01.3 means the appropriate standards, rules, requirements, methods, specifications, characteristics and procedures contained in this Document.

6 Form of conversion

The form of the conversion must be determined by the Director

65.01.5 MAXIMUM HOURS OF DUTY

1. Maximum hours of duty

(1) The maximum hours of duty for air traffic service personnel are governed by the Labour Act, 2007 (Act 11 of 2007): Provided that in the case of an air traffic controller –

(a) a shift on operational duty may not exceed eight hours including meal intervals;

(b) the aggregate periods of operational duty, including such duty in overtime, may not exceed 180 hours in any shift cycle;

(c) the duty time referred to in subparagraph (1)(a) may be extended by a maximum of three hours of overtime to a maximum of 10 hours overtime per week.

(2) Subject to subparagraph (6), the number of shifts to be worked by an air traffic controller or an air traffic service assistant in any shift cycle may not exceed 22 shifts.

(3) An air traffic controller or an air traffic service assistant must have been free of any duty for at least 10 hours before the commencement of any period of operational duty.

(4) Upon the conclusion of a period of night duty, an air traffic controller or an air traffic service assistant is entitled to an interval of at least 24 hours before the commencement of the next period of operational duty.

(5) An air traffic controller or an air traffic service assistant may not be required to work more than seven successive shifts of operational duty without an interval of at least 24 hours before the commencement of the next period of operational duty.

(6) The number of shifts in any shift cycle referred to in subparagraph (2), may be extended by two additional shifts to 24 shifts if unforeseen circumstances require such extension: Provided that –

(a) the extension must be reported in writing to the Director by the air traffic controller or the air traffic service assistant concerned and his or her employer within 30 days from the date on which the extension occurred, stating the reason for such extension; and

(b) the duration of such additional shifts may not be extended beyond eight hours per shift through overtime.

(7) If the Director is of the opinion that the extension of the number of shifts referred to in subparagraph (6) may jeopardise aviation safety, the Director may at any time take the appropriate steps which he or she deems necessary to prevent the recurrence of such extension.

(8) The form in which the reporting referred to in subparagraph (6) (a) must be done, is form FSS PEL 65-10.

65.01.9 DESIGNATION OF VALIDATION EXAMINERS AND RATING ASSESSMENT EXAMINERS

1. Conditions, rules, requirements, procedures or standards for designation (appointment) of validation examiner (operational)

(a) The appointee must hold a Namibian ATS licence with the appropriate valid rating(s) and a valid Namibian ATS Instructor rating.

(b) Such an appointee must have validated the rating(s) referred to in (a) at a Namibian ATSU, and have exercised the privileges of such rating(s) for a period of not less than two years per rating.

(c) Such an appointee should preferably be the standards officer of the relevant service provider as referred to in regulation 172.03.3 (1) (b).

(d) Application must be made to the Director on form FSS PEL 65-03.

(e) The appointee must be found suitable, and be appointed by the Director for Civil Aviation, in accordance with this regulation.

2. Conditions, rules, requirements, procedures or standards for designation (appointment) of rating assessment examiner (training organisation)

(a) The appointee must hold or have held a Namibian ATS licence with the rating(s) and an instructor certificate.

(b) Such an appointee must have validated the rating (s) referred to in (a) at a Namibian ATSU, and have exercised the privileges of such rating(s) for a period of not less than two years per rating.

(c) Such an appointee should preferably be the standards officer of the relevant service provider as referred to in regulation 172.03.3 (1) (b).

(d) Application must be made to the Director on form FSS PEL 65-03.

(e) The appointee must be found suitable, and be appointed by the Director for Civil Aviation, in accordance with this regulation.

65.01.13 CREDIT FOR MILITARY SERVICE

The application for credit for military service must be made in writing to the Director, containing the justification for the application and proof that the applicant held an ATS qualification in the Namibian Defence Forces (NDF) within the 60 months preceding the application for credit of military experience.

65.01.15 CHANGE OF NAME OR ADDRESS

The notification of change of Name or Address must be made on form FSS PEL-G01.

65.01.16 DUPLICATE AIR TRAFFIC SERVICE LICENCE

The application for a duplicate licence must be made on the respective licence application form for the initial issue of the licence.

65.02.2 TRAINING

1. Applicability

The following training standards apply to the issuing of –

(a) an air traffic service licence;

(b) an air traffic service assistant rating.

2. Course aim

The aim of ab initio training for air traffic service personnel is to provide the candidate with the necessary knowledge, skills and attitudes to enable him/her to undertake AIS clerical duties in support of AIS officers and technical officers and/or to obtain an ATS licence with the following rating –

(a) Air traffic service assistant

3. Course outcome

On completion of the ab initio training for air traffic controllers, the candidate must have the necessary knowledge and skills to commence operational and clerical AIS duties in support of AIS officers and technical officers and/or validation training for an air traffic service assistant

4. Licensing

On successful completion of all training pertaining to the air traffic service licence and the air traffic service assistant rating, and upon successful completion of the required validation training, the Director must issue an ATS licence with the rating.

5. Theoretical training

The ab initio training course for air traffic service personnel must consist of the following theoretical modules –

(a) Aerodynamics

On completion of this module, the candidate must have a basic knowledge of aerodynamics to enable him/her to understand the operations and performance of aircraft and those factors influencing such performance and operations.

(b) Aircraft instruments, navigation and approach aids

On completion of this module the candidate must have the necessary knowledge of the principles that are applicable to the functioning of aircraft instruments, navigation and approach aids.

(c) Air law

On completion of this module the candidate must have the necessary knowledge of national air law and its application relating to personnel licensing, aerodromes and aircraft operations.

(d) AIS general

On completion of this module the candidate must have the necessary knowledge of the specific documentation pertaining to AIS in order to effectively assist in the provision of AIS.

(e) AIS theory and procedures

On completion of this module the candidate must have an extensive knowledge of all the theoretical aspects and procedures pertaining to the provision of AIS in order to apply them in the execution of the operational and clerical duties of AIS.

(f) ATC theory and procedures

On completion of this module the candidate must be able to display the necessary knowledge on all aspects relating to the practices and procedures in the provision of air traffic services.

(g) International Civil Aviation Organisation (ICAO) procedures and documents

On completion of this module the candidate must have a basic knowledge of the ICAO and selected operating mechanisms.

(h) Meteorology

On completion of this module the candidate must have sound knowledge of various aspects of meteorology affecting aircraft operations and must be able to observe weather, interpret, assess and relay information provided by meteorological offices or other authorised sources.

(i) Navigation and maps

On completion of this module the candidate must have the necessary knowledge in order to –

(aa) explain the use of maps and charts in the provision of flight navigation assistance; and

(bb) explain and apply variation of selected positions on an aeronautical chart.

(j) Radio technical

On completion of this module the candidate must have the necessary knowledge of the operation, limitations and uses of radio and other electronic aids in the provision of air traffic services.

(k) Search and rescue

On completion of this module the candidate must have extensive knowledge of the search and rescue practices and procedures and alerting services in order to apply them efficiently while undertaking operational training; and when assisting in the provision of search and rescue and alerting services.

(l) Separation standards (not applicable to ATSA rating)

On completion of this module the candidate must be able to understand the separation standards applied by ATC, to the extent of solving simple separation problems.

(m) Human factors

On completion of this module the candidate must have a basic knowledge of and understanding of the importance of human factors in the ATS workplace.

(n) RVSM (not applicable to ATSA rating)

On completion of this subject the student must be equipped with the knowledge, skills and attitudes required to provide air traffic services within the designated RVSM and transition airspaces in the AFI region, in accordance with ICAO regional agreements.

(o) GNSS (not applicable to ATSA rating)

On completion of this subject the student must have knowledge of the current and future satellite navigation components and basic understanding of RNAV GNSS approach segments, associated fixes/waypoints, protected airspace and fix/waypoint naming.

6. Practical simulator training

In order to develop the practical operational skills of the candidate to the required standard, he/she must be required to apply the following procedures and principles in a simulated operational environment as appropriate for the rating being sought –

(a) Radio telephony procedures

(b) Co-ordination Service Procedures

(c) Clearance Delivery Service Procedures

(d) Flight information service procedures

(e) Aerodrome flight information service procedures

(f) Administrative procedures

(g) RVSM (not applicable to ATSA rating)

(h) GNSS (not applicable to ATSA rating).

6. Examination and pass requirements

(1) In order to pass the course the candidate must successfully undertake the following examinations to the prescribed standards.

EXAMINATION	REQUIRED PASS MARK
Aerodynamics	70%
Aircraft instruments, navigation and approach aids	70%
Air law	70%
AIS general	70%
AIS theory and procedures	70%
ATC theory and procedures	70%
ICAO, procedures and documents	70%
Meteorology	70%
Navigation and maps	70%
Radio technical	70%
Search and rescue	70%
Human factors	70%

(2) A once-off re-write in any two of the subjects may be permitted, provided that the candidate does not attain less than 20% below the required pass mark on the first attempt. A failure to achieve this must mean immediate failure of the course.

(3) Re-writes must be undertaken within 14 days of the first failed attempt.

(4) An average of 70% or more must be attained during the simulated practical assessments. A once-off re-evaluation in any two practical assessments may be allowed and must be undertaken within 14 days of the first failed attempt.

(5) Recognition of prior learning (RPL) may be accredited to a candidate who has successfully completed the examination requirement for any of the above modules as referred to in 65.02.2(5) within the preceding 24 months. Such Candidate may be exempted by a Designated Examiner (DE) from the examination requirement for that specific subject provided the candidate can demonstrate to the DE satisfactory knowledge and skills associated with the subject or credit is given for prior learning as per an ATO's approved training syllabus.

The conditions for an ATO to accredit RPL and the acceptable means for a candidate to demonstrate having satisfactory knowledge and skills to meet the requirements for exemption from the examination/assessment must be documented in the ATO's Training and Procedures Manual.

(6) In addition all ATS personnel must complete an English Language Proficiency examination in accordance with the requirements of the Director.

7. Validation training

(1) In order to validate the ATSA rating the candidate must successfully undertake the following evaluations as appropriate to the licence or rating being applied for –

(a) Progressive practical standards evaluations

(b) Final practical standards evaluation

(c) Written examinations on all aspects as specified in Station Standing Instructions

(d) Satisfy the Director as to his/her competency in the specific rating to be validated.

(2) In order to pass the validation training the candidate has to be successful in all evaluations.

(3) (a) In order to successfully validate an ATSA rating, the candidate has to comply with the requirements of regulation 65.03.5. –

(b) Obtain and maintain a sound knowledge of local practices and procedures as specified in Station Standing Instructions.

(c) Obtain and maintain a sound knowledge of the function and operation of local instruments and technical aids.

8. Syllabus

The ab initio ATS personnel training course must consist of the following modules:

(1) Aerodynamics

(a) Principles of flight

(b) Newton’s law of motion

(c) Lift, drag, weight, thrust (forces)

(d) Factors affecting lift

(e) Wing shapes

(f) Causes of drag

(g) Angle of attack, chordline, relative airflow

(h) Stalling

(i) Aileron, elevator, rudder

(j) Stability, dihedral, sweepback

(k) Flap systems, trim, airbrake

(l) Aircraft types and identification

(m) Aircraft performances

(2) Aircraft instruments, navigation and approach aids

(a) The atmosphere

(b) Pressure instruments

(c) Gyro/mechanical instruments

(d) Non-directional beacons

(e) VHF Omni-directional radio range

(f) Distance measuring equipment

(g) Instrument landing system

(h) Decca navigation system

(i) Doppler

(j) Direction finding

(k) Global positioning system

(3) Air law

(a) Explanation of legal documents

(b) Non-application of CAR

(c) Duties, powers and functions of Director

(d) Designation of authorised officers, inspectors and authorised persons

(e) Authority of authorised officers, inspectors and authorised persons

(f) Issue of licences, certificates and ratings

(g) Flights by night

(h) Meteorological reports

(i) Public transport category – rules

(j) Flying balloons

(k) Offences

(l) Categories of employment of aircraft

(m) Compliance with rules of the air

(n) Flight rules

(o) Authority of pilot-in-command

(p) Pre-flight action

(q) Airspace restrictions

(r) Negligent or reckless flying

(s) Use of liquor, narcotics or drugs

(t) Operation on and in the vicinity of aerodrome

(u) Helicopter operations

(v) Proximity and formation flying

(w) Right-of-way rules

(x) Minimum safe heights

(y) Flight over assemblies of persons

(z) Semi-circular rule

(aa) Aircraft speeds

(bb) Towing, dropping, spraying, etc.

(cc) Parachute descents

(dd) Simulated instrument flying

(ee) Flight instruction

(ff) Aerobatics flight

(gg) Flight plans

(hh) Mandatory radio – controlled/advisory airspace

(ii) Reporting positions

(jj) Fuel/oil reserves

(kk) VFR/VMC

(ll) IFR

(mm) Light to be displayed by aircraft

(nn) Search and rescue

(oo) Taxi rules

(pp) Light endangering aircraft

(qq) AFTN services

(rr) Accidents investigation

(ss) Overflight regulations

(4) AIS general

(a) General

(b) Scope of information handled by AIS

(c) Establishment of a sound organisational base

(d) Organisation of structures and resources

(e) Publication of aeronautical information

(f) Aeronautical fixed services

(g) Aeronautical broadcasting services

(h) ATS Messages

(i) Distress and urgency communication procedures

(j) Aerodrome and other landing surfaces

(k) Flight documents

(5) AIS theory and procedures

(a) Pre and post flight information

(b) Airspaces

(c) Types of flight

(d) Altimeter setting procedures

(e) Semi-circular rule

(f) Flight plans

(g) Flight progress strips

(h) Radio telephony procedures, codes and abbreviations

(6) ATC theory and procedures

(a) ATC general

(b) Altimeter setting procedures (including basic altimetry)

(c) ATC clearances and position reports

(d) Composition of ATS broadcasts

(e) Emergencies: General

(f) Aerodrome Control

(g) AFIS/CLD/FIS (as appropriate for the rating being sought)

(h) ATC responsibilities re radio failure

(i) Responsibilities and scope of FIS

(j) Administration and documentation

(7) ICAO, procedures and documents

(a) Introduction

(b) The Five Freedoms of the Air; International Air Services Transit Agreement and International Air Transport Agreement

(c) Membership of ICAO

(d) Aims and objectives of ICAO

(e) Representative bodies of ICAO

(f) ICAO publications

(g) ICAO publications relevant to AIS

(8) Meteorology

(a) Authority, organisation and responsibility for the provision of meteorological services

(b) Types of services provided and information for pre-flight briefings

(c) Meteorological codes and terminology

(d) Composition of the atmosphere

(e) Types of cloud

(f) Fronts

(g) Wind

(h) Thunderstorms

(i) Meteorological instruments

(j) The atmosphere

(k) Pressure

(l) Insulation

(m) Sublimation

(n) Visibility

(o) Winds

(p) Clouds

(q) Precipitation

(9) Navigation and maps

(a) Frequencies

(b) Navigation aids

(c) General

(d) Computer

(10) Radio technical

(a) Characteristics

(b) Frequencies

(c) Antennae and microphones

(11) Search and rescue

Practices and procedures

(12) Human factors

(a) Introduction to human factors and resource management

(b) Sensory and Perceptual mechanisms

(c) Errors

(d) Human factors and team resource management within the organisational quality/safety management system

(e) Stress Management

(13) RVSM (Overview)

(a) RVSM in the AFI region

(b) RVSM Approval process

(c) Aircraft requirements and approval

(d) Safety monitoring

(e) Flight planning

(f) Operational procedures

(g) R/T Phraseology.

(14) GNSS (Overview)

(a) Satellite Navigation System

(b) GNSS receiver and augmentation

(c) GNSS equipment operational requirement and approval

(d) GNSS Approach

(e) ATC separation based on GNSS

(f) Other GNSS Procedures

(g) R/T Phraseology.

65.02.3 THEORETICAL KNOWLEDGE EXAMINATION

1. Written examination

The written examination referred to in CAR 65.02.3, is the written examination contained in paragraph 6 of TS 65.02.2.

65.02.4 APPLICATION FOR AIR TRAFFIC SERVICE LICENCE

1. Form of application

The application for an ATS licence must be made on form FSS PEL 65-01.

2. Certificate of competency

The certificate of competency issued by the rating assessment examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.02.5 ISSUING OF AN AIR TRAFFIC SERVICE LICENCE

The form of the air traffic service licence must be in the format determined by the Director.

65.02.7 PRIVILEGES

1. Requirements and standards

The requirements and standards referred to in CAR 65.02.7(a), are the Standards and Procedures for the Provision of Service referred to in TS 172.03.12 in Document NAM-CATS 172.

65.03.2 TRAINING

1. Training standards

The training standards for the issuing of an air traffic service assistant rating referred to in CAR 65.03.2, are the training standards contained in TS 65.02.2.

65.03.3 APPLICATION FOR AIR TRAFFIC SERVICE ASSISTANT RATING

1. Form of application

The application for an ATSA rating must be made on form FSS PEL 65-01.

2. Certificate of competency

The certificate of competency issued by the rating assessment examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.03.4 ISSUING OF AIR TRAFFIC SERVICE ASSISTANT RATING

The rating must be issued in the form determined by the Director

65.03.6 APPLICATION FOR VALIDATION OF AIR TRAFFIC SERVICE ASSISTANT RATING

1. Form of application

The application for an ATSA rating must be made on form FSS PEL 65-01

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.03.07 VALIDATION OF AIR TRAFFIC SRVICE ASSISTANT RATING

The rating must be validated in the form determined by the Director.

65.03.8 PRIVILEGES OF AIR TRAFFIC SERVICE ASSISTANT RATING

1. Requirements and standards

The requirements and standards referred to in CAR 65.03.8(a), are the procedures for the provision of service contained in in TS 172.03.12 Document NAM-CATS 172.

65.03.10 REVALIDATION OF AIR TRAFFIC SERVICE ASSISTANT RATING

1. Proficiency check

The proficiency check for the renewal of an ATSA validation is the annual competency assessment conducted by a validation examiner.

2. Certificate of competency

The certificate of competency is the certificate required in TS 65.03.6.

65.04.2 TRAINING

1. Course aim

The aim of the Aerodrome Control Course is to provide the candidate with the necessary knowledge, skills and attitudes to enable him/her to obtain an aerodrome control rating.

2. Licensing

On completion of the Aerodrome Control Course and the successful completion of aerodrome control validation training, the Director must issue an aerodrome control rating.

3. Theoretical training

The Aerodrome Control Course consists of the following theoretical modules –

(1) Aerodrome control procedures

On completion of this module, the candidate must have the necessary knowledge with respect to aerodrome control practices and procedures, in order to apply them efficiently during the practical simulator training.

(2) Air law

On completion of this module, the candidate must be able to display the necessary knowledge of national air law relating to personnel licensing, aerodromes and aircraft operations in order to provide an aerodrome control service to the required standard.

(3) Theory and procedures

On completion of this module, the candidate must be able to display the necessary knowledge on all aspects relating to the practices and procedures in the provision of air traffic services.

(4) Navigation

On completion of this module, the candidate must have the necessary knowledge in order to –

(a) effectively utilise maps and charts to provide flight navigation assistance;

(b) use advanced plotting methods to plot aircraft positions; and

(c) interpret flight plans.

(5) Meteorology

On completion of this module, the candidate must have a sound knowledge of various aspects of meteorology affecting aircraft operations in the vicinity of an aerodrome and must be able to observe weather, interpret, assess and relay information provided by meteorological offices or other authorised sources.

(6) Technical and navigation aids

On completion of this module, the candidate must have the necessary knowledge of the principles that are applicable to the operation and functioning of technical instruments, radios and electronic navigation aids used in the provision of an aerodrome control service.

(7) Search and rescue

On completion of this module, the candidate must have the necessary knowledge of the search and rescue practices and procedures and alerting services in order to apply them efficiently in the provision of an aerodrome control service and when assisting as a search mission coordinator.

4. Practical simulator training

In order to develop the practical controlling skills of the candidate to the required standard, he/she must be required to apply the following procedures and principles in a simulated operational environment –

(a) Radio telephony procedures

(b) Aerodrome control procedures

(c) Separation standards

(d) Emergency procedures

(e) Flight progress strip marking

5. Examination and pass requirements

(1) In order to pass the course the candidate must successfully undertake the following examinations to the prescribed standards –

EXAMINATION	REQUIRED PASS MARK
Aerodrome control	70%
Air law	70%
ATC theory and procedures	70%
Navigation	70%
Meteorology	70%
Technical and navigation aids	70%
Search and rescue	70%
Simulated aerodrome control assessments	70%

(2) A once-off re-write in any two of the subjects may be permitted, provided that the candidate does not attain less than 20% below the required pass mark on the first attempt.

(3) Re-writes must be undertaken within 14 days of the first failed attempt.

(4) An average of 70% or more must be attained during the simulated practical assessments. A once-off re-evaluation in any two practical assessments may be allowed and must be undertaken within 14 days of the first filed attempt.

(5) Recognition of prior learning (RPL) may be accredited to a candidate who has successfully completed the examination requirement for any of the above modules as referred to in 65.04.2(5) within the preceding 48 months and who has held a valid Air Traffic Service License with in the preceding 24 months. Such Candidate may be exempted by a Designated Examiner (DE) from the examination requirement for that specific subject provided the candidate can demonstrate to the DE satisfactory knowledge and skills associated with the subject or credit is given for prior learning as per an ATO’s approved training syllabus.

The conditions for an ATO to accredit RPL and the acceptable means for a candidate to demonstrate having satisfactory knowledge and skills to meet the requirements for exemption from the examination/assessment must be documented in the ATO's Training and Procedures Manual.

6. Validation training

(1) In order to validate the aerodrome control rating, the candidate must successfully undertake the following evaluations –

(a) Progressive practical standards evaluations

(b) Final practical standards evaluation

(c) Written examinations on all aspects as specified in Station Standing Instructions

(d) Satisfy the Director as to his/her competency in the specific rating to be validated.

(2) In order to pass the validation training, the candidate has to be successful in all evaluations.

(3) In order to successfully validate the aerodrome control rating, the candidate has to comply with the requirements of regulation 65.04.5.

7. Syllabus

The aerodrome control course must consist of the following modules:

(1) ATC theory and procedures

(a) Communications

(b) Responsibilities in respect of military aircraft

(c) Approach control

(d) Approach control procedures

(e) Separation standards used by approach

(f) Delaying actions

(g) Emergencies

(h) Liaison

(i) Instrument and approach procedures

(2) Aerodrome control

(a) General

(b) Extent of responsibility

(c) Loss of communication

(d) Runways and circuits

(e) Control of aerodrome traffic, vehicles and persons

(f) Aerodrome traffic separation

(g) Rules applicable to pilots

(h) Aerodrome and lighting serviceabilities

(i) Aerodrome physical

(j) Runway markings

(k) Taxiway markings

(l) Lighting aids

(m) Runway lighting

(n) Obstruction restriction, removal and marking

(3) Air law

(a) Rules of the air

(b) Authority of pilot-in-command of an aircraft

(c) Pre-flight action

(d) Airspace restrictions

(e) Prohibited areas

(f) Restricted areas

(g) Negligent and reckless flying

(h) Consumption of alcohol or drugs

(i) Operation on and in the vicinity of an aerodrome

(j) Helicopter operations

(k) Proximity

(l) Right-of-way

(m) Minimum safe heights

(n) Flights over open-air assemblies of persons

(o) Aircraft speed

(p) Towing objects

(q) Dropping objects, spraying or dusting

(r) Picking up objects

(s) Parachute descents

(t) Simulated instrument flights

(u) Flight instruction

(v) Acrobatic flight (including spinning)

(w) Lights to be displayed by aircraft

(x) Visual distress and urgency signals

(y) Ground and light signals for control of aerodrome traffic

(z) Taxi rules

(aa) Lights which endanger

(4) Navigation

(a) Direction

(b) Variation and deviation

(c) Units of measurement

(d) Latitude and longitude

(e) Georef system

(f) Time

(g) Sped and velocity

(h) Triangle and velocity

(i) Air pilot

(j) One-in-sixty rule

(k) Scale

(l) Map construction

(m) Plotting charts

(n) Special purpose maps and charts

(o) Relief

(p) Computer

(q) Elementary plotting

(r) Vector triangles

(s) Advanced plotting (practical)

(t) GNSS

(5) Meteorology

(a) Introduction

(b) Wind

(c) Clouds

(d) Thunderstorms

(e) Visibility

(f) Ocean currents

(g) Climate of south Africa

(6) Search and rescue (SAR)

(a) The search and rescue organisation

(b) Types of SAR and flights to which they pertain

(c) Declaration of phases when emergency is known

(d) General Administration

(7) Technical and navigation aids

(a) Workings, advantages and disadvantages of VOR, ILS, NDB, DME, VDF, TACAN, VORTAC, GPS

(b) VDF procedure

(8) Aerodrome control practical simulator training

Practical application of knowledge and skills.

65.04.3 APPLICATION FOR AERODROME CONTROL RATING

1. Form of application

The application for an Aerodrome Control rating must be made on form FSS PEL 65-01.

2. Certificate of competency

The certificate of competency issued by the rating assessment examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.04.04 ISSUING OF AERODROME CONTROL RATING

The rating must be issued in the form determined by the Director.

65.04.6 APPLICATION FOR AERODROME CONTROL RATING VALIDATION

1. Form of application

The application for an Aerodrome Control rating validation must be made on form FSS PEL 65-01 simultaneous to the application for the issuance of the rating.

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.04.7 VALIDATION OF AN AERODROME CONTROL RATING

The rating must be validated in the form determined by the Director.

65.04.8 PRIVILEGES OF AERODROME CONTROL RATING

1. Requirements and standards

The requirements and standards referred to in CAR 65.04.8(a), are the procedures for the provision of service contained in TS 172.03.12 in Document NAM-CATS 172.

65.04.10 REVALIDATION OF AERODROME CONTROL RATING

1. Proficiency check

The proficiency check for the renewal of an Aerodrome Control rating validation is the annual competency assessment conducted by a validation examiner.

2. Certificate of competency

The certificate of competency is the certificate required in TS 65.03.6.

65.05.2 TRAINING

1. Course aim

The aim of the Approach Control Course is to provide the candidate with the necessary knowledge, skills and attitudes to enable him/her to obtain an approach control rating.

2. Licensing

On completion of the Approach Control Course and successful completion of approach control procedural validation training, the Director must issue an approach control rating.

3. Theoretical training

The approach control course consists of the following theoretical modules –

(1) General ATC procedures

On completion of this module, the candidate must be able to display the necessary knowledge of ATS relevant to approach control to enable him/her to efficiently provide the ATS required of an approach controller.

(2) Approach control

On completion of this module, the candidate must have the necessary knowledge with respect to approach control practices and procedures, in order to apply them efficiently during the practical simulator training.

(3) Separation standards

On completion of this module, the candidate must have an extensive knowledge of separation standards as applied in the provision of an approach control service, enabling him/her to provide an approach control service applying the correct separation standards.

(4) Meteorology

On completion of this module, the candidate must have a sound knowledge of various aspects of meteorology pertinent to approach control and affecting aircraft operations under the jurisdiction of approach control.

4. Practical simulator training

In order to develop the practical controlling skills of the candidate to the required standard, he/she must be required to apply the following procedures and principles in a simulated operational environment –

(a) Radio telephony procedures

(b) Approach control procedures

(c) Separation standards

(d) Emergency procedures

(e) Emergency progress strip marking

5. Examination and pass requirements

(1) In order to pass the course, the candidate must successfully undertake the following examinations to the prescribed standards –

EXAMINATION	REQUIRED PASS MARK
General ATC procedures	70%
Approach control	70%
Separation standards	70%
Meteorology	70%
Simulated procedural approach assessments	70%

(2) A once-off re-write in any two of the subjects may be permitted, provided that the candidate does not attain less than 20% below the required pass mark on the first attempt.

(3) Re-writes must be undertaken within 14 days of the first failed attempt.

(4) An average of 70% or more must be attained during the simulated practical assessments. A once-off re-evaluation in any two practical assessments may be allowed and must be undertaken within 14 days of the first failed attempt.

(5) Recognition of prior learning (RPL) may be accredited to a candidate who has successfully completed the examination requirement for any of the above modules as referred to in 65.05.2(5) within the preceding 48 months and who has held a valid Air Traffic Service License with in the preceding 24 months. Such Candidate may be exempted by a Designated Examiner (DE) from the examination requirement for that specific subject provided the candidate can demonstrate to the DE satisfactory knowledge and skills associated with the subject or credit is given for prior learning as per an ATO's approved training syllabus.

The conditions for an ATO to accredit RPL and the acceptable means for a candidate to demonstrate having satisfactory knowledge and skills to meet the requirements for exemption from the examination/assessment must be documented in the ATO's Training and Procedures Manual.

6. Validation training

(1) In order to validate the approach control rating, the candidate must successfully undertake the following evaluations –

(a) Progressive practical standards evaluations

(b) Final practical standards evaluation

(c) Written examinations of all aspects as specified in Station Standing Instructions

(2) In order to pass the validation training, the candidate has to be successful in all evaluations.

(3) In order to successfully validate any of the approach control ratings, the candidate has to comply with the requirements of regulation 65.05.5.

7. Syllabus

The approach control course must consist of the following modules –

(1) General ATC procedures

(a) Standard R/T procedures and inter unit phraseologies

(b) Communication failure procedures

(c) Radio failure in respect of VFR flights

(d) Interception of civilian aircraft

(e) Descents by supersonic aircraft due to solar cosmic radiation

(f) Division and classification of airspace

(g) ATC clearances

(h) Emergencies

(i) Diversion procedures

(j) Flight progress strips

(k) SAR procedures associated with approach and aerodrome control

(2) Approach control

(a) Provision of approach control services

(b) Responsibilities of approach control

(c) Coordination with other units

(d) Expected approach time

(e) Onward clearance time

(f) Control and communications

(g) Procedures for arriving aircraft

(h) Types of approach

(i) Suspension and resumption of VFR operations

(3) Separation standards

(a) Introduction and application

(b) Vertical separation

(c) Horizontal separation

(d) Lateral separation

(e) Longitudinal separation based on time

(f) Arrival/departure separation

(g) Sector separation

(4) Meteorology

(a) General circulation

(b) Winds

(c) Synoptic meteorology

(d) Cloud and weather

(e) Meteorological flying hazards

(f) Observations and conclusions

(g) Meteorological codes

(5) Approach control practical simulator training

Practical application of knowledge and skills.

65.05.3 APPLICATION FOR APPROACH CONTROL RATING

1. Form of application

The application for an Approach Control rating must be made on form FSS PEL 65-01

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.05.4 ISSUING OF APPROACH CONTROL RATING

The rating must be issued in the form determined by the Director.

65.05.6 APPLICATION FOR APPROACH CONTROL RATING VALIDATION

1. Form of application

The application for an Approach Control rating validation must be made on form FSS PEL 65-01, simultaneous with the application for the issuance of the rating.

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.05.7 VALIDATION OF AN APPROACH CONTROL RATING

The rating must be validated in the form determined by the Director.

65.05.8 PRIVILEGES OF APPROACH CONTROL RATING

1. Requirements and standards

The requirements and standards referred to in CAR 65.05.8(a), are the procedures for the provision of service contained in TS 172.03.12 in Document NAM-CATS 172.

65.05.10 REVALIDATION OF APPROACH CONTROL RATING

1. Proficiency check

The proficiency check for the renewal of an Approach Control rating validation is the annual competency assessment conducted by a validation examiner.

2. Certificate of competency

The certificate of competency is the certificate required in TS 65.05.6.

65.06.2 TRAINING

1. Course aim

The aim of the Area Control Course is to provide the candidate with the necessary knowledge, skills and attitudes to enable him/her to obtain an area control rating.

3. Licensing

On completion of the Area Control Course and on successful completion of area control validation training, the Director must issue an area control rating. .

4. Theoretical training

The area control course consists of the following theoretical modules –

(1) General ATC procedures

On completion of this module, the candidate must be able to display the necessary knowledge of ATS relevant to area control to enable him/her to efficiently provide the ATS required of an area controller.

(2) Area control

On completion of this module, the candidate must have the necessary knowledge with respect to area control procedural practices and procedures, in order to apply them efficiently during the practical simulator training.

(3) Separation standards

On completion of this module, the candidate must have an extensive knowledge of separation as applied in the provision of an area control service, enabling him/her to provide an area control service applying the correct separation standards.

(4) Meteorology

On completion of this module, the candidate must have a sound knowledge of various aspects of meteorology pertinent to area control and affecting aircraft operations under the jurisdiction of area control.

5. Practical simulator training

In order to develop the practical controlling skills of the candidate to the required standard, he/she must be required to apply the following procedures and principles in a simulated operational environment –

(a) Radio telephony procedures

(b) Area control procedures

(c) Separation standards

(d) Emergency procedures

(e) Flight progress strip marking

6. Examination and pass requirements

(1) In order to pass the course, the candidate must successfully undertake the following examinations to the prescribed standards –

EXAMINATION	REQUIRED PASS MARK
General ATC procedures	70%
Area control	70%

Separation standards	70%
Meteorology	70%
Simulated operational assessments	70%

(2) A once-off re-write in any two of the subjects may be permitted, provided that the candidate does not attain less than 20% below the required pass mark on the first attempt.

(3) Re-writes must be undertaken within 14 days of the first failed attempt.

(4) An average of 70% or more must be attained during the simulated practical assessments. A once-off re-evaluation in any two practical assessments may be allowed and must be undertaken within 14 days of the first failed attempt.

(5) Recognition of prior learning (RPL) may be accredited to a candidate who has successfully completed the examination requirement for any of the above modules as referred to in 65.06.2 (5) within the preceding 48 months and who has held a valid Air Traffic Service License with in the preceding 24 months. Such Candidate may be exempted by a Designated Examiner (DE) from the examination requirement for that specific subject provided the candidate can demonstrate to the DE satisfactory knowledge and skills associated with the subject or credit is given for prior learning as per an ATO's approved training syllabus.

The conditions for an ATO to accredit RPL and the acceptable means for a candidate to demonstrate having satisfactory knowledge and skills to meet the requirements for exemption from the examination/assessment must be documented in the ATO's Training and Procedures Manual.

7. Validation training

(1) In order to validate the area control rating, the candidate must successfully undertake the following evaluations –

(a) Progressive practical standards evaluations

(b) Final practical standards evaluation

(c) Written examinations on all aspects as specified in Station Standing Instructions

(2) In order to pass the validation training, the candidate has to be successful in all evaluations.

(3) In order to successfully validate the area control rating, the candidate has to comply with the requirements of regulation 65.06.5.

8. Syllabus

The area control course must consist of the following modules –

(1) General ATC procedures

- (a) Standard R/T procedures and inter unit phraseologies
- (b) Communication failure procedures
- (c) Radio failure in respect of VFR flights
- (d) Interception of civilian aircraft
- (e) Descents by supersonic aircraft due to solar cosmic radiation
- (f) Division and classification of airspace
- (g) ATC clearances
- (h) Emergencies
- (i) Diversion procedures
- (j) Flight progress strips
- (k) SAR procedures associated with approach and aerodrome control

(2) Area control

- (a) Introduction
- (b) Coordination
- (c) Coordination between area control and approach
- (d) Release and transfer of control and communication
- (e) Procedures for overflying flights, flying through remote TMAs and CTRs (IFR and VFR)
- (f) Information to be given to aircraft on first contact
- (g) Air traffic advisory service

(3) Separation standards

- (a) Introduction and application
- (b) Vertical separation
- (c) Horizontal separation
- (d) Lateral separation

(e) Longitudinal separation based on time

(4) Meteorology

(a) General circulation

(b) Winds

(c) Synoptic meteorology

(d) Cloud and weather

(e) Meteorological flying hazards

(f) Observations and conclusions

(g) Meteorological codes

(5) Area control practical simulator training

Practical application of knowledge and skills.

65.06.3 APPLICATION FOR AREA CONTROL RATING

1. Form of application

The application for an Area Control rating must be made on form FSS PEL 65-01

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.06.4 ISSUING OF AREA CONTROL RATING

The rating must be issued in the form determined by the Director.

65.06.6 APPLICATION FOR AREA CONTROL PROCEDURAL RATING VALIDATION

1. Form of application

The application for an Area Control rating validation must be made on form FSS PEL 65-01, simultaneous with the application for the issuance of the rating.

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.06.7 VALIDATION OF AN AREA CONTROL RATING

The rating must be validated in the form determined by the Director.

65.06.8 PRIVILEGES OF AREA CONTROL RATING

1. Requirements and standards

The requirements and standards referred to in CAR 65.06.8(a), are the procedures for the provision of services contained in Document NAM-CATS 172.

65.06.10 REVALIDATION OF AREA CONTROL RATING

1. Proficiency check

The proficiency check for the renewal of an Area Control rating validation is the annual competency assessment conducted by a validation examiner.

2. Certificate of competency

The certificate of competency is the certificate required in TS 65.06.6.

65.07.2 TRAINING

1. Course aim

The aim of the Approach Control Radar Course is to provide the candidate with the necessary knowledge, skills and attitudes to enable him/her to obtain an approach control Radar rating.

2. Licensing

On completion of the Approach Control Radar Course and on successful completion of approach control radar validation training, the Director must issue an Approach Control Radar what? –rating?.

3. Theoretical training

The approach control radar course consists of the following theoretical modules –

(1) General ATC procedures

On completion of this module, the candidate must be able to display the necessary knowledge of ATS relevant to approach control to enable him/her to efficiently provide the ATS required of an approach controller.

(2) Approach control

On completion of this module, the candidate must have the necessary knowledge with respect to approach control practices and procedures, in order to apply them efficiently during the practical simulator training.

(3) Surveillance theory and procedures

On completion of this module, the candidate must have an extensive knowledge of procedures and practices applied in the provision of an approach control (radar) service, enabling him/her to provide an approach control radar service applying the correct procedures and practices.

(4) Surveillance technical

On completion of this module, the candidate must have a sound knowledge of the operations and limitations of surveillance equipment and its application to air traffic control, including SSR.

(5) Meteorology

On completion of this module, the candidate must have a sound knowledge of various aspects of meteorology pertinent to approach control and affecting aircraft operations under the jurisdiction of approach control.

5. Practical simulator training

In order to develop the practical controlling skills of the candidate to the required standard, he/she must be required to apply the following procedure and principles in a simulated operational environment –

(a) Radio telephony procedures

(b) Approach control radar procedures

(c) Separation standards

(d) Emergency procedures

(e) Flight progress strip marking

6. Examination and pass requirements

(1) In order to pass the course, the candidate must successfully undertake the following examinations to the prescribed standards –

EXAMINATION	REQUIRED PASS MARK
General ATC procedures	70%
Approach control	70%
Surveillance theory and procedures	70%
Surveillance technical	70%
Meteorology	70%
Simulated approach assessments	70%

(2) A once-off re-write in any two of the subjects may be permitted, provided that the candidate does not attain less than 20% below the required pass mark on the first attempt.

(3) Re-writes must be undertaken within 14 days of the first failed attempt.

(4) An average of 70% or more must be attained during the simulated practical assessments. A once-off re-evaluation in any two practical assessments may be allowed and must be undertaken within 14 days of the first failed attempt.

(5) Recognition of prior learning (RPL) may be accredited to a candidate who has successfully completed the examination requirement for any of the above modules as referred to in 65.07.2(5) within the preceding 48 months and who has held a valid Air Traffic Service License with in the preceding 24 months. Such Candidate may be exempted by a Designated Examiner (DE) from the examination requirement for that specific subject provided the candidate can demonstrate to the DE satisfactory knowledge and skills associated with the subject or credit is given for prior learning as per an ATO's approved training syllabus.

The conditions for an ATO to accredit RPL and the acceptable means for a candidate to demonstrate having satisfactory knowledge and skills to meet the requirements for exemption from the examination/assessment must be documented in the ATO's Training and Procedures Manual.

6. Validation training

(1) In order to validate the approach control radar rating, the candidate must successfully undertake the following evaluations –

(a) Progressive practical standards evaluations

(b) Final practical standards evaluation

(c) Written examinations on all aspects as specified in Station Standing Instructions

(2) In order to pass the validation training, the candidate has to be successful in all evaluations.

(3) In order to successfully validate the approach control radar rating, the candidate has to comply with the requirements of regulation 65.07.5.

7. Syllabus

The approach control radar course must consist of the following modules –

(1) General ATC procedures

(a) Standard R/T procedures and inter unit phraseologies

(b) Communication failure procedures

(c) Radio failure in respect of VFR flights

(d) Interception of civilian aircraft

(e) Descents by supersonic aircraft due to solar cosmic radiation

(f) Division and classification of airspace

(g) ATC clearances

(h) Emergencies

(i) Diversion procedures

(j) Flight progress strips

(k) SAR procedures associated with approach and aerodrome control

(2) Approach control

(a) Provision of approach control services

(b) Responsibilities of approach control

(c) Coordination with other units

(d) Expected approach time

(e) Onward clearance time

(f) Control and communications

(g) Procedures for arriving aircraft

(h) Types of approach

(i) Suspension and resumption of VFR operations

(3) Surveillance theory and procedures

(a) Use of surveillance in the air traffic control service

(b) Surveillance separation minima

(c) SSR operations

(d) Identification, vectoring and transfer of aircraft

(e) Terrain clearance and emergencies

(f) Failure of airborne equipment

(g) Combined surveillance -procedural

(h) Use of surveillance in the approach control service

(i) General surveillance approach procedures

(j) Final approach procedures

(k) Surveillance phraseologies

(4) Meteorology

(a) General circulation

(b) Winds

(c) Synoptic meteorology

(d) Cloud and weather

(e) Meteorological flying hazards

(f) Observations and conclusions

(g) Meteorological codes

(5) Surveillance technical

(a) Surveillance – How does it work?

(b) Prefix summary

(c) Frequency bands

(d) Radiated power in free space

(e) Primary surveillance system

(f) SSR development

(g) Circular polarisation

(h) MTI-Radar

(i) Doppler effect

(j) Tangential fade

(6) Approach control radar practical simulator training

Practical application of knowledge and skills.

65.07.3 APPLICATION FOR APPROACH CONTROL RADAR RATING

1. Form of application

The application for an Approach Control Radar rating must be made on form FSS PEL 65-01

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.07.4 ISSUING OF APPROACH RADAR CONTROL RATING

The rating must be issued in the form determined by the Director.

65.07.6 APPLICATION FOR APPROACH CONTROL RADAR RATING VALIDATION

1. Form of application

The application for an Approach Control Radar rating validation must be made on form FSS PEL 65-01, simultaneous with the application for the issuance of the rating.

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.07.7 VALIDATION OF AN APPROACH RADAR CONTROL RATING

The rating must be validated in the form determined by the Director.

65.07.8 PRIVILEGES OF APPROACH CONTROL RADAR RATING

1. Requirements and standards

The requirements and standards referred to in CAR 65.07.8(a), are the procedures for the provision of service contained in TS 172.03.12 in Document NAM-CATS 172.

65.07.10 REVALIDATION OF APPROACH CONTROL RADAR RATING

1. Proficiency check

The proficiency check for the renewal of an Approach Control rating validation is the annual competency assessment conducted by a validation examiner.

2. Certificate of competency

The certificate of competency is the certificate required in TS 65.07.6.

65.08.2 TRAINING

1. Course aim

The aim of the Area Control Radar Course is to provide the candidate with the necessary knowledge, skills and attitudes to enable him/her to obtain an Area control Radar Rating.

2. Licensing

On completion of the Area Control Radar Course and on successful completion of area control Surveillance validation training, the Director must issue an Area Control Radar Rating.

3. Theoretical training

The area control radar course consists of the following theoretical modules –

(1) General AT procedures

On completion of this module, the candidate must be able to display the necessary knowledge of ATS relevant to area control to enable him/her to efficiently provide the ATS required of an area controller.

(2) Area control

On completion of this module, the candidate must have the necessary knowledge with respect to approach control practices and procedures, in order to apply them efficiently during the practical simulator training.

(3) Surveillance theory and procedures

On completion of this module, the candidate must have an extensive knowledge of procedures and practices applied in the provision of an area control surveillance service, enabling him/her to provide an area control radar service applying the correct procedures and practices.

(4) Radar technical

On completion of this module, the candidate must have a sound knowledge of the operations and limitations of surveillance equipment and its application to air traffic control, including SSR.

(5) Meteorology

On completion of this module, the candidate must have a sound knowledge of various aspects of meteorology pertinent to area control and affecting aircraft operations under the jurisdiction of area control.

4. Practical simulator training

In order to develop the practical controlling skills of the candidate to the required standard, he/she must be required to apply the following procedures and principles in a simulated operational environment –

(a) Radio telephony procedures

(b) Area control radar procedures

(c) Separation standards

(d) Emergency procedures

(e) Flight progress

5. Examination and pass requirements

(1) In order to pass the course, the candidate must successfully undertake the following examinations to the prescribed standards –

EXAMINATION	REQUIRED PASS MARK
General ATC procedures	70%
Area control	70%
Surveillance theory and procedures	70%
Surveillance technical	70%
Meteorology	70%
Simulated surveillance area assessments	70%

(2) A once-off re-write in any two of the subjects may be permitted, provided that the candidate does not attain less than 20% below the required pass mark on the first attempt.

(3) Re-writes must be undertaken within 14 days of the first failed attempt.

(4) An average of 70% or more must be attained during the simulated practical assessments. A once-off re-evaluation in any two practical assessments may be allowed and must be undertaken within 14 days of the first failed attempt.

(5) Recognition of prior learning (RPL) may be accredited to a candidate who has successfully completed the examination requirement for any of the above modules as referred to in 65.12.2(5) within the preceding 48 months and who has held a valid Air Traffic Service License with in the preceding 24 months. Such Candidate may be exempted by a Designated Examiner (DE) from the examination requirement for that specific subject provided the candidate can demonstrate to the DE satisfactory knowledge and skills associated with the subject or credit is given for prior learning as per an ATO's approved training syllabus.

The conditions for an ATO to accredit RPL and the acceptable means for a candidate to demonstrate having satisfactory knowledge and skills to meet the requirements for exemption from the examination/assessment must be documented in the ATO's Training and Procedures Manual.

6. Validation training

(1) In order to validate the area control radar rating, the candidate must successfully undertake the following evaluations –

(a) Progressive practical standards evaluations

(b) Final practical standards evaluation

(c) Written examinations on all aspects as specified in Station Standing Instructions

(2) In order to pass the validation training, the candidate has to be successful in all evaluations.

(3) In order to successfully validate the area control radar rating, the candidate has to comply with the requirements of regulation 65.08.5.

7. Syllabus

The area control radar course must consist of the following modules:

(1) General ATC procedures

- (a) Standard R/T procedures and inter unit phraseologies
- (b) Communication failure procedures
- (c) Radio failure in respect of VFR flights
- (d) Interception of civilian aircraft
- (e) Descents by supersonic aircraft due to solar cosmic radiation
- (f) Division and classification of airspace
- (g) ATC clearances
- (h) Emergencies
- (i) Diversion procedures
- (j) Flight progress strips
- (k) SAR procedures associated with approach and aerodrome control

(2) Area control

- (a) Introduction
- (b) Coordination
- (c) Coordination between area control and approach
- (d) Release and transfer of control and communication
- (e) Procedures for overflying flights, flying through remote TMAs and CTRs (IFR and VFR)
- (f) Information to be given to aircraft on first contact
- (g) Air traffic advisory service

(3) Surveillance theory and procedures

(a) Use of surveillance in the air traffic control service

(b) Surveillance separation minima

(c) SSR operations

(d) Identification, vectoring and transfer of aircraft

(e) Terrain clearance and emergencies

(f) Failure of airborne equipment

(g) Combined radar-procedural

(h) Use of surveillance in the approach control service

(i) General surveillance approach procedures

(j) Final approach procedures

(k) Surveillance phraseologies

(4) Meteorology

(a) General circulation

(b) Winds

(c) Synoptic meteorology

(d) Cloud and weather

(e) Meteorological flying hazards

(f) Observations and conclusions

(g) Meteorological codes

(5) Surveillance technical

(a) Surveillance – How does it work?

(b) Prefix summary

(c) Frequency bands

(d) Radiated power in free space

(e) Primary surveillance system

(f) SSR development

(g) Circular polarisation

(h) MTI-Radar

(i) Doppler effect

(j) Tangential fade

(6) Area control radar practical simulator training

Practical application of knowledge and skills.

65.08.3 APPLICATION FOR AREA CONTROL RADAR RATING

1. Form of application

The application for an Area Control Radar rating must be made on form FSS PEL 65-01

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.08.4 ISSUING OF AREA RADAR CONTROL RATING

The rating must be issued in the form determined by the Director.

65.08.6 APPLICATION FOR AREA CONTROL RADAR RATING VALIDATION

1. Form of application

The application for an Area Control Radar rating validation must be made on form FSS PEL 65-01, simultaneous with the application for the issuance of the rating.

2. Certificate of competency

The certificate of competency issued by the validation examiner is the certificate contained in form FSS PEL 65-01or in a similar format accepted by the Director.

65.08.7 VALIDATION OF AN AREA RADAR CONTROL RATING

The rating must be validated in the form determined by the Director.

65.08.8 PRIVILEGES OF AREA CONTROL RADAR RATING

1. Requirements and standards

The requirements and standards referred to in CAR 65.08.8(a), are the procedures for the provision of services contained Document NAM-CATS 172.

65.08.10 REVALIDATION OF AREA RADAR CONTROL RATING

1. Proficiency check

The proficiency check for the renewal of an Area Control Radar rating validation is the annual competency assessment conducted by a validation examiner.

2. Certificate of competency

The certificate of competency is the certificate required in TS 65.08.6.

65.09.2 TRAINING

1. Training standards

(1) The training course should be designed for the applicant to be given adequate training in instructional techniques based upon established teaching methods.

(2) On successful completion of the training course and final test, the applicant must be issued with an ATS instructor (operational) rating permitting the holder to give training and instruction in any valid ratings held by the instructor.

(3) The training course should stress the role of the individual in relation to the importance of human factors in the man-machine environment. Special attention should be paid to the applicant's maturity and judgement, including an understanding of adults, their behavioural attitudes and variable levels of education.

(4) All the subject detail contained in the instructor training syllabus must be based on the training courses described in TS 65.03 to 65.8, whichever is applicable. The purpose of the course is to –

(a) refresh and bring up to date the technical knowledge of the student instructor;

(b) train the student instructor to teach the subjects;

(c) ensure that the student instructor's own operational performance is of a sufficiently high standard; and

(d) teach the student instructor the principles of basic instruction and to apply them at the air traffic service level.

(5) During the training course, the student instructor should be made aware of his or her attitude to the importance of aviation safety. The student instructor is the critical link in the training process and his or

her attitude towards safety has a major impact upon student air traffic service personnel. Improving safety awareness is therefore a fundamental objective throughout the training course. It will be of major importance for the training course to aim at giving the student instructor knowledge, skills and attitudes relevant to an air traffic service instructor's task.

2. Teaching and learning

(1) The learning process

(a) Motivation;

(b) perception and understanding;

(c) memory and its application;

(d) habits and transfer;

(e) obstacles to learning;

(f) incentives to learning;

(g) learning methods; and

(h) rates of learning.

(2) The teaching process

(a) Elements of effective teaching;

(b) planning of instructional activity;

(c) teaching methods;

(d) teaching from the "known" to the "unknown"; and

(e) use of "lesson plans".

(3) Training philosophies

(a) Value of a structured training course;

(b) importance of a planned syllabus; and

(c) integration of theoretical and practical training.

(4) Techniques of applied instruction

(a) Classroom instruction techniques –

(i) Use of training aids;

(ii) group lectures;

(iii) individual briefings; and

(iv) student participation/discussion.

(b) Simulator instruction techniques –

(i) The work environment;

(ii) techniques of applied instruction; and

(iii) judgement and decision making.

(5) Student evaluation and testing

(a) Assessment of student performance –

(i) The function of progress tests;

(ii) recall of knowledge;

(iii) translation of knowledge into understanding;

(iv) development of understanding into actions; and

(v) the need to evaluate rate of progress.

(b) Analysis of student errors –

(i) Establish the reason for errors;

(ii) tackle major faults first, minor faults second;

(iii) avoidance of over criticism; and

(iv) the need for clear concise communication.

(6) Training programme development

(a) Lesson planning;

(b) preparation;

(c) explanation and demonstration;

(d) student participation and practice; and

(e) evaluation.

(7) Human performance and limitations relevant to instruction

(a) Physiological factors;

(b) psychological factors;

(c) human information procession;

(d) behavioural attitudes; and

(e) development of judgement and decision making.

(8) Hazards involved in simulating systems failures and malfunctions

(9) Training administration

(a) Training records;

(b) the training curriculum;

(d) study material;

(e) official forms;

(f) manuals and standard procedures; and

(i) the regulations applicable to an air traffic service licence and ratings and air traffic service instructor rating (both operational and ATO).

(10) Classroom training

The classroom training consists of the training course delivered by a competent person, and includes classroom lectures, tutorials, briefings and directed private study.

(11) Simulator training

The student instructor must practice the standards and procedures in a simulator that adequately simulates the work environment that is approved by the Director.

65.09.3 APPLICATION FOR AIR TRAFFIC SERVICE INSTRUCTOR (OPERATIONAL) RATING

1. Form of application

The application for an ATS instructor (operational) rating must be made on form FSS PEL 65-02.

2. Certificate of competency

The certificate of competency issued is the certificate contained in form FSS PEL 65-02 or in a similar format accepted by the Director.

65.09.4 ISSUING OF AIR TRAFFIC SERVICE INSTRUCTOR (OPERATIONAL) RATING

The rating must be issued in the form determined by the Director.

65.09.6 APPLICATION FOR VALIDATION OF AIR TRAFFIC SERVICE INSTRUCTOR (OPERATIONAL) RATING

1. Form of application

The application for an ATS instructor (operational) rating validation must be made on form FSS PEL 65-02, simultaneous with the application for the issuance of the rating.

2. Certificate of competency

The certificate of competency issued by the validation examiner must be made on form FSS PEL 65-02 or in a similar format accepted by the Director.

65.09.8 PRIVILEGES OF AN AIR TRAFFIC SERVICE INSTRUCTOR (OPERATIONAL) RATING

2. Certificate of competency

The certificate of competency is the certificate required in TS 65.09.6.

65.09.9 RENEWAL OF AN AIR TRAFFIC SERVICE INSTRUCTOR (OPERATIONAL) RATING.

1. The application for renewal must be made on form FSS PEL 65-02.

2. The form of the rating must be determined by the Director.

65.10.2 TRAINING

1. Training standards

. (1) The training course should be designed for the applicant to be given adequate training in instructional techniques based upon established teaching methods.

(2) On successful completion of the training course and final test, the applicant must be issued with an ATS instructor (ATO) certificate permitting the holder to give training and instruction towards the issuance of an ATS licence and ratings in any valid ratings held by the instructor.

(3) The training course should stress the role of the individual in relation to the importance of human factors in the man-machine environment. Special attention should be paid to the applicant's maturity and judgement, including an understanding of adults, their behavioural attitudes and variable levels of education.

(4) All the subject detail contained in the instructor training syllabus must be based on the training courses described in TS 65.03 to 65.8, whichever is applicable. The purpose of the course is to –

(a) refresh and bring up to date the technical knowledge of the student instructor;

(b) train the student instructor to teach the subjects;

(c) ensure that the student instructor's own operational performance is of a sufficiently high standard; and

(d) teach the student instructor the principles of basic instruction and to apply them at the air traffic service level.

(5) During the training course, the student instructor should be made aware of his or her attitude to the importance of aviation safety. The student instructor is the critical link in the training process and his or her attitude towards safety has a major impact upon student air traffic service personnel. Improving safety awareness is therefore a fundamental objective throughout the training course. It will be of major importance for the training course to aim at giving the student instructor knowledge, skills and attitudes relevant to an air traffic service instructor's task.

2. Teaching and learning

(1) The learning process

(a) Motivation;

(b) perception and understanding;

(c) memory and its application;

(d) habits and transfer;

(e) obstacles to learning;

(f) incentives to learning;

(g) learning methods; and

(h) rates of learning.

(2) The teaching process

(a) Elements of effective teaching;

(b) planning of instructional activity;

(c) teaching methods;

(d) teaching from the “known” to the “unknown”; and

(e) use of “lesson plans”.

(3) Training philosophies

(a) Value of a structured training course;

(b) importance of a planned syllabus; and

(c) integration of theoretical and practical training.

(4) Techniques of applied instruction

(a) Classroom instruction techniques –

(i) Use of training aids;

(ii) group lectures;

(iii) individual briefings; and

(iv) student participation/discussion.

(b) Simulator instruction techniques –

(i) The work environment;

(ii) techniques of applied instruction; and

(iii) judgement and decision making.

(5) Student evaluation and testing

(a) Assessment of student performance –

(i) The function of progress tests;

(ii) recall of knowledge;

(iii) translation of knowledge into understanding;

(iv) development of understanding into actions; and

(v) the need to evaluate rate of progress.

(b) Analysis of student errors –

(i) Establish the reason for errors;

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(iii) avoidance of over criticism; and

(iv) the need for clear concise communication.

(6) Training programme development

(a) Lesson planning;

(b) preparation;

(c) explanation and demonstration;

(d) student participation and practice; and

(e) evaluation.

(7) Human performance and limitations relevant to instruction

(a) Physiological factors;

(b) psychological factors;

(c) human information procession;

(d) behavioural attitudes; and

(e) development of judgement and decision making.

(8) Hazards involved in simulating systems failures and malfunctions

(9) Training administration

(a) Training records;

(b) the training curriculum;

(d) study material;

(e) official forms;

(f) manuals and standard procedures; and

(i) the regulations applicable to an air traffic service licence and ratings and air traffic service instructor rating (both operational and ATO).

(10) Classroom training

The classroom training consists of the training course delivered by a competent person, and includes classroom lectures, tutorials, briefings and directed private study.

(11) Simulator training

The student instructor must practice the standards and procedures in a simulator that adequately simulates the work environment that is approved by the Director.

65.10.3 APPLICATION FOR AIR TRAFFIC SERVICE INSTRUCTOR (AVIATION TRAINING ORGANISATION) CERTIFICATE

1. Form of application

The application for an ATS instructor (ATO) certificate must be made on form FSS PEL 65-02.

65.10.4 ISSUING OF AIR TRAFFIC SERVICE INSTRUCTOR (AVIATION TRAINING ORGANISATION) CERTIFICATE

The certificate must be issued in the form determined by the Director.

65.10.5 PRIVILEGES OF AN AIR TRAFFIC SERVICE INSTRUCTOR (AVIATION TRAINING ORGANISATION) CERTIFICATE

1. Certificate of competency

The certificate of competency is the certificate contained in form FSS PEL 65-02 or in a similar format accepted by the Director.

65.10.7 RENEWAL OF AIR TRAFFIC SERVICE INSTRUCTOR (AVIATION TRAINING ORGANISATION) CERTIFICATE

1. Form of application

The application for the renewal of an ATS instructor (ATO) certificate must be made on form FSS PEL 65-02.

2. Form of Certificate

The certificate must be issued in the form determined by the Director.