

Section 4 Approach Control Services

Chapter 1 Approach Control

Note: This section should be read in conjunction with Section 2 (General ATS), Section 6 (Separation Methods and Minima) and Section 7 (ATS Surveillance Procedures).

1. Provision of Service

- 1.1 Approach control services within the Republic of South Africa's Flight Information Regions comprises of ATS surveillance system and procedural control in airspaces which is not under the jurisdiction of an Area control unit, aerodrome control unit or flight information service and any additional airspace which may be designated in the approved Station Standing Instruction Manual including temporary designated airspace as published in the IAIP.
- 1.2 An Approach Control Unit Shall Provide the following services:
- a) Approach Control Service;
 - b) Flight Information Service;
 - c) Alerting Service and assistance to organizations involved in SAR Actions;
 - d) Flow control co-ordination including demand and capacity balancing to all flights operating in controlled airspace.
- 1.3 The position indications presented on a situation display may be used to perform the following additional functions in the provision of an approach control service:
- a) Provide vectoring of arriving traffic on to pilot-interpreted final approach aids;
 - b) Provide flight path monitoring of parallel ILS approaches and instruct aircraft to take appropriate action in the event of possible or actual penetrations of the no transgression zone (NTZ);
 - c) Provide vectoring of arriving traffic to a point from which a visual approach can be completed;
 - d) Provide vectoring of arriving traffic to a point from which a precision radar approach or a surveillance radar approach can be made;
 - e) Provide flight path monitoring of other pilot-interpreted approaches;
 - f) In accordance with prescribed procedures, conduct:
 - i) Surveillance radar approaches;
 - ii) Precision radar (PAR) approaches; and

- g) Provide separation between:
 - i) Succeeding departing aircraft;
 - ii) Succeeding arriving aircraft; and
 - iii) A departing aircraft and a succeeding arriving aircraft.
- 1.3 An Approach control unit may be established as a separate or dedicated approach unit or combined with an aerodrome control unit or an Area Control unit when it is necessary to combine the relevant functions applicable to each unit under the responsibilities of one unit.

2. Responsibilities.

2.1 Within controlled airspace (Class A and C) and under the following local Aerodrome weather conditions an Approach Control unit shall provide an approach service to all aircraft whether IFR, VFR or Special VFR from the time and place at which:

2.1.1 During IMC:

2.1.1.1 Arriving aircraft are released by an area control unit until they have landed and vacated the runway in use.

2.1.1.2 Departing aircraft from the holding point prior to entering the runway in use, until they are either:

- a) Transferred to an area control unit, or
- b) They are clear of controlled airspace and separated from other flights afforded standard separation by the approach control unit.

2.1.2 During VMC:

2.1.2.1 Arriving aircraft are released by an area control unit until they have been released to an aerodrome control unit.

2.1.2.2 Departing aircraft are transferred from an aerodrome control unit until they are either:

- a) Transferred to an area control unit, or
- b) They are clear of controlled airspace and separated from other flights afforded standard separation by the approach control unit.

2.1.3 In All Weather Conditions:

2.1.3.1 Over flying flights are released from an area control unit until they are either:

- a) Transferred to an area control unit, or
- b) They are clear of controlled airspace and separated from other flights afforded standard separation by the approach control unit.

- 2.1.3.2 Aircraft arriving from uncontrolled airspace place themselves under control of the approach control service when they have entered controlled airspace. Prior to entering controlled airspace such flights shall be provided with an advisory service.
- 2.1.3.3 Unless the SACAA has approved a reduced separation (Deemer), Approach control shall provide standard separation to :
- a) All IFR flights;
 - b) Between all IFR and SVFR flights; and
 - c) All SVFR flights.
- 2.2 An approach control unit may delegate part of its functions to an aerodrome control unit. Normally this will be delegated to a specialist aerodrome unit and stipulated in the SSI Manual. Functions that could be delegated to the Aerodrome unit may include, amongst others:
- a) Control of the runway in use during IMC conditions;
 - b) Applying Aerodrome Control and separation to traffic operating within the aerodrome traffic circuit.
- 2.3 Aircraft within an ATZ Class C or CTR are required to comply with instructions from the applicable air traffic control unit. Flights in uncontrolled airspace outside an ATZ Class C or CTR are allowed without an ATC clearance. Flights that operate in the vicinity of an ATZ Class C or CTR and are in radio contact with the air traffic control unit are expected to comply with an air traffic control instructions unless otherwise stated by the pilot. Although it can be assumed that the pilot operating outside an ATZ Class C or CTR will still comply with an Air traffic control instruction, vigilance should be maintained that the pilot may not follow the instructions and may not advise the ATC unit.

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Chapter 2 Coordination and Transfer of Control Procedures

1 General

1.1 Aircraft receiving an Approach Control service shall not be permitted to enter the airspace of another Air traffic control unit or sector unless prior co-ordination has taken place. The responsibility for initiating co-ordination lies with the controller of the unit or sector transferring control, who shall comply with any conditions specified in the SSI Manual or letters of agreement (LOA) between the units or sectors.

2 Co-ordination With Other ATSU's or Sectors

2.1 Approach control shall co-ordinate with Aerodrome control in the following circumstances:

a) Aircraft Approaching to Land

- i. The aircrafts' estimated arrival time;
- ii. Proposed altitude or level over the aerodrome;
- iii. Pertinent information on all controlled arriving flights including type of flight (IFR, CVFR, SVFR or VFR);
- iv. The anticipated order in which control of these aircraft are to be transferred;
- v. Point at which control will be transferred;
- vi. The anticipated delay to departing flights together with the reason for such delays.

b) Arriving aircraft that shall be cleared to visual reporting/holding positions within the ATZ Class C or CTR;

c) Aircraft that will route through the aerodrome traffic circuit.

2.2 Aerodrome Control shall co-ordinate with approach control as stipulated in the SSI Manual in the following circumstances:

- a) Departing IFR Flights;
- b) Arriving aircraft that enter the ATZ Class C or CTR directly and make their first call on the tower frequency;
- c) Information concerning missed approaches;
- d) Where deemed necessary by the approach unit a statement when the first aircraft in an approach sequences is in communication with and is sighted by the aerodrome control tower and that reasonable assurance exists that a landing can be accomplished;

- e) Arrival and departure times;
 - f) All available information relating to overdue or unreported aircraft;
 - g) Information concerning aircraft that constitute essential local traffic to aircraft under the control of the unit providing approach control service.
- 2.3 Area control shall co-ordinate with approach control on arriving aircraft which is to be cleared to an aerodrome holding facility or visual holding position, instead of the normal holding facility as published in the relevant SSI Manual.
- 2.3.1 Approach control shall supply Area control with the following data:
- a) Runway in use;
 - b) The lowest level at the holding facility available for use by area control;
 - c) The average time interval between successive approaches (if different from the published interval);
 - d) Expected approach times (EAT) or onward clearance times (OCT) and revisions of these times if necessary;
 - e) Arrival times over the holding point if these vary from the estimate by 3 minutes or more;
 - f) ATD for outbound flights together with estimates for the transfer points;
 - g) Inbound clearances for arriving flights if such clearances shall differ from standard clearances as published in the SSI Manual, in the following sequence:
 - i. Revised Inbound clearance – Aircraft callsign;
 - ii. Clearance limit;
 - iii. Route or STAR;
 - iv. Level at holding facility including level at the entry point if applicable;
 - v. EAT/OCT (or if no delay is anticipated the words No-Delay).

Example: (Inbound clearance – SAA503 Cleared FAJS ST4A STAR FL160 to cross STV FL180 or below No delay).
 - h) Missed approaches when re-routing or diversion is entailed, in order that the subsequent actions may be co-coordinated;
 - i) All information relating to overdue aircraft;
 - j) Significant weather that may affect operations.

Note: *The above items may be published in the relevant SSI Manual or LOP as standard routine procedures and need not be co-coordinated individually for each aircraft.*

3 Transfer of control

3.1 The responsibility for control of an arriving aircraft shall be transferred from an approach control unit to an aerodrome control unit when the aircraft is :

- a) In the vicinity of the aerodrome; and
 - i. It is considered that the approach and landing will be completed with visual reference to terrain;
 - ii. The aircraft has reached uninterrupted visual meteorological conditions;
 - iii. The aircraft is entering the aerodrome traffic circuit; and
 - iv. In the case of consecutive visual approaches when the following aircraft has reported terrain in sight and that they are able to maintain separation from the preceding aircraft.

Note: *In these cases above the volume of traffic and aerodrome control workload must be such as to allow the use of one of the reduced separations permitted in the vicinity of aerodromes.*

- b) At a prescribed point or altitude/level as specified in the relevant SSI Manual;
- c) The aircraft has landed;
- d) IFR flights completing an instrument approach may be also instructed to establish communication with aerodrome control (for the purpose of obtaining landing clearance and essential aerodrome information) when the aircraft has become number one to approach and, for following aircraft, when they are established on final approach and have been provided with appropriate separation. Until such aircraft are flying with visual reference to terrain the responsibility for separation between them shall remain with approach control; aerodrome control shall not issue any instructions or advice which would reduce the separation established by approach control.

3.2 A unit providing approach control service shall retain control of arriving aircraft until such aircraft have been transferred to the aerodrome control tower and is in communications with the aerodrome control tower. Not more than one arrival shall be cleared to a unit providing aerodrome control service during IMC at a time, except when prior arrangements have been made by the appropriate ANSP and where appropriate specified in the SSI Manual.

3.3 Approach may authorise an aerodrome control tower to release an aircraft for take-off subject to the discretion of the aerodrome control tower with respect to arriving aircraft.

3.4 Aerodrome control towers shall obtain approval from the unit providing approach control service prior to authorising operations of special VFR flights.

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Chapter 3 Procedures for Departing Aircraft

1 General

- 1.1 Clearances for departing aircraft issued by an approach control unit shall specify, when necessary for the separation of aircraft:
- a) Runway for take-off;
 - b) Direction of turn after take-off; or the designator of the assigned SID, if applicable;
 - c) Clearance limit;
 - d) Altitude/Level of flight and changes of level;
 - e) Allocated SSR code.
- 1.2 The following items may be included as necessary:
- a) Track to be made good before turning onto desired heading;
 - b) Time, point and/or rate at which changes of level should be made;
 - c) Time, point and /or rate at which a level change shall be made;
 - d) Any other necessary manoeuvres consistent with safe operation of the aircraft.
- 1.3 At aerodromes where SIDs has been established, departing aircraft should normally be cleared to follow the appropriate SID.
- 1.3.1 When a departing aircraft on a SID is cleared to climb to a level higher than the initially cleared level or the level(s) specified in a SID, the aircraft shall follow the published vertical profile of a SID, unless such restrictions are explicitly cancelled by ATC.
- 1.4 Aircraft operating on an IFR flight plan shall normally request start-up clearance before starting their engines.
- 1.4.1 Such clearances will be obtained through the Approach control planner and this will imply that there will be a minimum delay on departure. Start clearances shall also only be issued considering any air traffic flow management procedures in force (Flow restrictions, slots etc.)
- 1.5 Unless prescribed by the relevant SSI Manual, approach control shall obtain an area control clearance for all outbound controlled flights. These clearances will be passed to the aircraft concerned along with the relevant approach clearance and pilots shall read these clearances back correctly before they are permitted to take-off.

Note: *For piston-engine aircraft, area control clearances will normally be obtained while the aircraft is taxiing out. Whenever possible, approach control should anticipate aircraft requests for area control clearance.*

- 1.6 At stations where more than one approach frequency is available or where, due to unservicability, the normal approach frequency is not in operation, approach shall advise aerodrome control of the frequency to be used by departing flights.
- 1.7 Departing aircraft may be expedited by suggesting a take-off direction which is not into wind. However, it is the responsibility of the pilot to decide between making such a take-off or waiting for normal take-off in a preferred direction.
- 1.8 Flights will normally be cleared in the order in which they call for clearance; however, discretion may be used by approach control in varying this order to reduce overall traffic delay. Approach control should advise operating companies when the anticipated delay in departing aircraft, due to traffic conditions, is likely to exceed 15 minutes.

2 Loss of Communication

- 2.1 Approach control shall be responsible for initiating action to establish communications if an aircraft has not contacted him within three (3) minutes after departure.

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Chapter 4 Procedures for Arriving Aircraft

1 General

- 1.1 When it becomes evident that delays of more than twenty (20) minutes will be encountered by arriving aircraft, operators or designated representatives shall, to the extent practicable be notified and kept informed on any changes in such expected delays

2 Information to Arriving Aircraft

- 2.1 After an arriving aircraft has made initial contact with an approach control unit, the following information shall be passed as soon as practicable to the aircraft (Unless such information has already been passed by the area control unit and is still valid/current).

- a) ATC clearance (STAR, routing heading to fly etc) including clearance limit;
- b) Cleared level;
- c) EAT.

Note 1: *The assigned level in the inbound clearance to arriving aircraft shall not be below the initial approach altitude even though pilots are responsible for ensuring their own terrain clearance under procedural control.*

Note 2: When an arriving aircraft on a STAR is cleared to descend to a level lower than the level or the level(s) specified in a STAR, the aircraft shall follow the published vertical profile of a STAR, unless such restrictions are explicitly cancelled by ATC. Published minimum levels based on terrain clearance shall always be applied.

- d) Runway-in-use;
- e) Present weather or confirmation of ATIS broadcast;
- f) QNH;
- g) Transition Level.

- 2.2 Additional information may include the following:

- a) Current surface conditions e.g. surface water depth, braking action or other temporary hazards.
- b) Changes in the operational status of visual and non-visual aids essential for the approach and landing.
- c) Runway visual range.

2.3 Subsequent Changes of Information

2.3.1 Aircraft which have received the information above must be kept informed of the following until they have landed:-

- a) Significant changes in the meteorological and runway conditions.
- b) Additional operationally significant reports by pilots or aerodrome control unit, e.g. wind shear, standing water etc.
- c) Further changes in the operational status of approach or landing aids.

2.4 When an aircraft is in the concluding stages of an instrument approach, however, such information will only be passed if a marked deterioration has occurred which the ATC considers likely to affect the safety of the aircraft.

3 Aircraft in the Hold

3.1 Holding Procedures.

- a) Holding shall be accomplished in accordance with notified procedures. If the notified entry and holding procedures are not known to the pilot, the appropriate air traffic control unit shall describe the procedures to be followed.
- b) Levels at holding facilities shall be assigned so as to permit aircraft to approach in their correct order. Normally the first aircraft to arrive over a holding facility should be at the lowest level with following aircraft at successively higher levels.
- c) Departure times of aircraft from the holding facility shall be based on the published approach interval between aircraft landing. If the weather conditions are such that the pilot may encounter difficulty in completing the landing, the time interval may be increased to allow the first aircraft to land before the second aircraft commences descent of final approach.
- d) If a pilot advises that he is unable to comply with approach control holding or communication procedures, alternative procedures requested by him should be approved if traffic conditions permit.
- e) The aircraft at the lowest level in the holding stack will normally be the first aircraft cleared to commence approach. Approach control shall, whenever possible, clear aircraft into the holding stack at the lowest level available in the order in which they are estimated to arrive over the holding point. However, special priority may be given in accordance with the priorities as laid down in *Section 2, Chapter 8*. The second aircraft in the approach sequence may be instructed to descend to the level, or if lateral separation only was maintained, to proceed to the position previously occupied by the first aircraft after the first aircraft has reported leaving the level or position.

Note: *Care should be taken when clearing aircraft to the level which has just been vacated by a preceding aircraft that standard vertical separation is maintained.*

3.2 Approach Sequence

- 3.2.1 The approach sequence shall be established in a manner which will facilitate arrival of the maximum number of aircraft with the least average delay. Priority shall be given to:
- a) An aircraft which anticipates being compelled to land because of factors affecting the safe operation of the aircraft (engine failure, shortage of fuel, etc);
 - b) Hospital aircraft or aircraft carrying any sick or seriously injured person requiring urgent medical attention;
 - c) Aircraft engaged in SAR operations; and
 - d) Other aircraft as may be determined by the appropriate authority.
- 3.2.2 The second aircraft shall be cleared to leave the holding point at a specified time and to descend for approach when:
- a) The preceding aircraft has landed; or
 - b) Reported on final that he has the runway in sight and is able to complete his approach with visual reference to the runway and reasonable assurance exists that a normal landing can be accomplished; or
 - c) Is sighted by and is in communication with Aerodrome/Approach Control and reasonable assurance exists that a normal landing can be accomplished; or
 - d) Its position and level have been ascertained by means of an ATS surveillance system operating at the aerodrome and reasonable assurance exists that a normal landing can be accomplished; or
 - e) The required landing interval has been established or the preceding aircraft has crossed the facility on final approach.
- 3.2.3 When aircraft are given a time at which to leave the specified aerodrome holding facility, the departure time shall be passed sufficiently in advance to permit the pilot to arrange his flight path accordingly.
- 3.2.4 The first aircraft will descend from the lowest level of the holding stack and commence approach when instructed.
- 3.2.5 The second aircraft in the approach sequence may be instructed to descend to the level previously occupied by the first aircraft, after the first aircraft has reported vacating it. If, however, severe turbulence is known to exist, the instruction shall be withheld until the first aircraft has reported at least 1000 feet below the vacated level.
- 3.2.6 Provision shall be made to ensure that the aerodrome control tower is kept informed of the sequence in which aircraft will be established on final approach for landing as well as any instructions and restrictions which have been issued to such aircraft in order to maintain separation after transfer of control to the aerodrome controller.