

Manual concerning Interception of Civil Aircraft

(Consolidation of Current ICAO Provisions
and Special Recommendations)

SECOND EDITION — 1990



*Approved by the Secretary General
and published under his authority*

INTERNATIONAL CIVIL AVIATION ORGANIZATION

FOREWORD

In accordance with a decision taken by the ICAO Council on 14 December 1983, this manual consolidates in a single document all the ICAO provisions and special recommendations relevant to the subject of interception of civil aircraft. The provisions and special recommendations have been extracted from the text of Annexes 2, 4, 6 (Parts I, II and III), 7, 10 (Volumes I and II), 11 and 15, the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS, Volume I, Doc 8168) and the *Procedures for Air Navigation Services — Rules of the Air and Air Traffic Services* (PANS-RAC, Doc 4444). The material so extracted is identified by the symbol # and “...” denotes text omitted. The source of the paragraphs and notes so designated is given in Appendix A. Paragraph references in the text refer to paragraph numbers in this manual unless otherwise indicated.

In accordance with a decision by the Air Navigation Commission on 23 June 1986, the second edition of the manual also contains guidance material in amplification of the various provisions and special recommendations relating to interception of civil aircraft contained in the first edition (1984). This guidance material has been developed with the assistance of an air navigation study group consisting of civil and military specialists. Attention is also drawn to a second and separate manual titled *Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft* (Doc 9554) which was also developed with the assistance of the same air navigation study group.

The purpose of this compilation of material from various ICAO documents and supplementary guidance material is to facilitate understanding and to provide a ready reference on the subject. It is hoped that it will also facilitate the implementation and application of the various provisions and special recommendations.

Contracting States are therefore requested to ensure that the material in this manual is brought to the attention of all civil and military administrative or operational personnel who may be concerned with the development and/or application of national practices and procedures relating to the identification and interception of civil aircraft.

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ICAO PROVISIONS AND SPECIAL RECOMMENDATIONS RELATING TO INTERCEPTION OF CIVIL AIRCRAFT

1. INTRODUCTION

1.1 TERMINOLOGY

1.1.1 The word “interception” when used in this manual does not include intercept and escort service provided, on request, to an aircraft in distress, in accordance with the *Search and Rescue Manual* (Doc 7333).

1.1.2 The terms “strayed aircraft” and “unidentified aircraft” when used in this manual have the following meanings:

Strayed aircraft. An aircraft which has deviated significantly from its intended track or which reports that it is lost.

Unidentified aircraft. An aircraft which has been observed or reported to be operating in a given area but whose identity has not been established.

Note.— An aircraft may be considered, at the same time, as a “strayed aircraft” by one unit and as an “unidentified aircraft” by another unit.

1.2 CIRCUMSTANCES IN WHICH INTERCEPTION MAY OCCUR

1.2.1 Pilots-in-command of civil aircraft should be aware that interception may take place in the event that military, customs or police authorities of a State:

- a) are unable to secure positive identification of an aircraft observed in or entering the sovereign airspace of the State by means other than visual inspection, i.e. by co-ordination with air traffic services units and/or by secondary surveillance radar;
- b) observe that an aircraft without proper authorization is about to enter, or has entered, an area in its territory in which civil flights are restricted or prohibited;
- c) observe that an aircraft within its airspace deviates from a designated air traffic services (ATS) route, or a flight plan route outside the ATS route network, without a known or apparent valid reason for the deviation; or
- d) suspect that an aircraft is engaged in illegal flight and/or transportation of illicit goods or persons, inconsistent with the aims of the Chicago Convention and contrary to the laws of said State.

1.2.2 Interception of civil aircraft may also take place if an aircraft:

- a) enters the sovereign airspace of a State without proper permission and fails to comply with instructions to land or to leave the airspace;
 - b) enters the sovereign airspace of a State through different positions or routes from those stated in the overflight permission; or
 - c) constitutes a hazard to other aircraft.
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2. GENERAL PRINCIPLES

2.1 Article 3 (a) of the Convention specifies that the Convention shall be applicable only to civil aircraft and shall not be applicable to State aircraft.

2.2 Article 3 (b) of the Convention specifies that aircraft used in military, customs and police services shall be deemed to be State aircraft.

2.3 Interception of civil aircraft shall be governed by appropriate regulations and administrative directives issued by Contracting States in compliance with the Convention on International Civil Aviation, and in particular Article 3 (d) under which Contracting States undertake, when issuing regulations for their State aircraft, to have due regard for the safety of navigation of civil aircraft. Accordingly, in drafting appropriate regulations and administrative directives, due regard shall be had to the principles in 2.5 below and the visual signals in 4.1.4.2 and 4.1.4.3.

2.4 Recognizing that it is essential for the safety of flight that any visual signals employed in the event of an interception which should be undertaken only as a last resort be correctly employed and understood by civil and military aircraft throughout the world, the Council of the International Civil Aviation Organization, when adopting the visual signals in 4.1.4.2 and 4.1.4.3, urged Contracting States to ensure that they be strictly adhered to by their State aircraft. As interceptions of civil aircraft are, in all cases, potentially hazardous, the Council has also formulated special recommendations which are included in this manual and which Contracting States are urged by the Council to apply in a uniform manner. The term “special recommendations” refers to all subsequent texts which have been extracted from Annex 2, Attachment A (see Appendix A).

Principles to be observed by States

2.5 To achieve the uniformity in regulations which is necessary for the safety of navigation of civil aircraft, due regard shall be had by Contracting States to the following principles when developing regulations and administrative directives:

- a) interception of civil aircraft will be undertaken only as a last resort;
- b) if undertaken, an interception will be limited to determining the identity of the aircraft, unless it is necessary to return the aircraft to its planned track, direct it beyond the boundaries of national airspace, guide it away from a prohibited, restricted or danger area or instruct it to effect a landing at a designated aerodrome;
- c) practice interception of civil aircraft will not be undertaken;
- d) navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established; and
- e) in the case where an intercepted civil aircraft is required to land in the territory overflown, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned.

2.6 Contracting States shall publish a standard method that has been established for the manoeuvring of aircraft intercepting a civil aircraft. Such method shall be designed to avoid any hazard for the intercepted aircraft.

Note.— *Special recommendations regarding a method for the manoeuvring are contained in 4.1.2.*

2.7 Contracting States shall ensure that provision is made for the use of secondary surveillance radar, where available, to identify civil aircraft in areas where they may be subject to interception.

2.8 To eliminate or reduce the need for interception of civil aircraft, it is important that:

- a) all possible efforts be made by intercept control units to secure identification of any aircraft which may be a civil aircraft, and to issue any necessary instructions or advice to such aircraft, through the appropriate air traffic services units. To this end, it is essential that means of rapid and reliable communications between intercept control units and air traffic services units be established and that agreements be formulated concerning exchanges of information between such units on the movements of civil aircraft, in accordance with the provisions of 3.1.7 and 3.1.8;
- b) areas prohibited to civil flights and areas in which civil flight is not permitted without special authorization by the State be clearly promulgated in aeronautical information publications (AIP) in accordance with the provisions of Annex 15, together with the risk, if any, of interception in the event of penetration of such areas. When delineating such areas in close proximity to promulgated ATS routes, or other frequently used tracks, States should take into account the availability and over-all systems accuracy of the navigation systems to be used by civil aircraft and their ability to remain clear of the delineated areas; and
- c) the establishment of additional navigation aids be considered where necessary to ensure that civil aircraft are able safely to circumnavigate prohibited or, as required, restricted areas.

2.9 To eliminate or reduce the hazards inherent in interceptions undertaken as a last resort, all possible efforts should be made to ensure co-ordinated actions by the pilots and ground units concerned. See also 4.1.1.2.

2.10 The 25th Extraordinary Session of the ICAO Assembly on 10 May 1984 approved unanimously an amendment to the Convention incorporating the following new Article 3 *bis* into the Convention. The new article enters into force when the Protocol has been ratified by 102 Contracting States:

“Article 3 bis

- a) The Contracting States recognize that every State must refrain from resorting to the use of weapons against civil aircraft in flight and that, in case of interception, the lives of persons on board and the safety of aircraft must not be endangered. This provision shall not be interpreted as modifying in any way the rights and obligations of States set forth in the Charter of the United Nations.
- b) The Contracting States recognize that every State, in the exercise of its sovereignty, is entitled to require the landing at some designated airport of a civil aircraft flying above its territory; without authority or if there are reasonable grounds to conclude that it is being used for any purpose inconsistent with the aims of this Convention; it may also give such aircraft any other instructions to put an end to such violations. For this purpose, the Contracting States may resort to any appropriate means consistent with relevant rules of international law, including the relevant provisions of this Convention, specifically paragraph (a) of this Article. Each Contracting State agrees to publish its regulations in force regarding the interception of civil aircraft.
- c) Every civil aircraft shall comply with an order given in conformity with paragraph (b) of this Article. To this end each Contracting State shall establish all necessary provisions in its national laws or regulations to make such compliance mandatory for any civil aircraft registered in that State or operated by an operator who has his principal

place of business or permanent residence in that State. Each Contracting State shall make any violation of such applicable laws or regulations punishable by severe penalties and shall submit the case to its competent authorities in accordance with its laws or regulations.

- d) Each Contracting State shall take appropriate measures to prohibit the deliberate use of any civil aircraft registered in that State or operated by an operator who has his principal place of business or permanent residence in that State for any purpose inconsistent with the aims of this Convention. This provision shall not affect paragraph (a) or derogate from paragraphs (b) and (c) of this Article.”
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3. ELIMINATION OR REDUCTION OF THE NEED FOR INTERCEPTION

3.1 IDENTIFICATION OF CIVIL AIRCRAFT

3.1.1 General

3.1.1.1 The need for interception of civil aircraft can be significantly reduced if aircraft operators and pilots, air traffic services authorities and units, military authorities and intercept control units are thoroughly familiar with the following provisions and guidance material and if all take appropriate action to facilitate identification of all civil aircraft operating within given portions of airspace where national sovereignty and security are prime considerations.

3.1.1.2 The actions required include:

- submission and forward transmission of flight plans;
- transmission of related ATS messages;
- maintenance of two-way radio communications between aircraft and air traffic services units;
- transmission of position reports from aircraft and notification of significant deviations from planned flight track;
- provision of facilities for rapid and reliable communications between ATS units and between such units and intercept control units; and
- exchanges of information regarding civil flights either on a routine basis or on request.

3.1.2 Submission of flight plans

3.1.2.1 Annex 2 prescribes that a flight plan shall be submitted prior to operating:

- a) any flight or portion thereof to be provided with air traffic control service;
- b) any IFR flight within advisory airspace;
- c) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate the provision of flight information, alerting and search and rescue services;
- d) any flight within or into designated areas, or along designated routes, when so required by the appropriate ATS authority to facilitate co-ordination with appropriate military units or with air traffic services units in adjacent States in order to avoid the possible need for interception for the purpose of identification; and
- e) any flight across international borders.

3.1.2.2 The term “flight plan” is used in this context to mean variously, full information on all items comprised in the flight plan description, covering the whole route of a flight, or limited information required when the purpose is to obtain a clearance for a minor portion of a flight such as to cross an airway, to take off from, or to land at a controlled aerodrome.

3.1.2.3 The requirement in 3.1.2.1 d) above may originate in a decision by military authorities but will be promulgated by the appropriate ATS authority.

3.1.2.4 To give effect to the provision in 3.1.2.1 d), Annex 11 prescribes that air traffic services authorities shall designate any areas or routes where the requirements of Annex 2 concerning submission of flight plans apply to all flights to ensure that pertinent data are available in appropriate air traffic services units specifically for the purpose of facilitating identification of civil aircraft.

3.1.3 Air-ground communications and position reporting

3.1.3.1 An aircraft operated as a controlled flight shall maintain continuous listening watch on the appropriate radio frequency of, and establish two-way communication as necessary with, the appropriate air traffic control unit, except as may be prescribed by the appropriate ATS authority in respect of aircraft forming part of aerodrome traffic at a controlled aerodrome.

3.1.3.2 Although selective calling system (SELCAL) or similar automatic signalling devices satisfy the requirement to maintain a listening watch, such devices should be used with discretion in areas where there is a risk of interception.

3.1.3.3 Aircraft on long over-water flights, or on flights over designated areas over which the carriage of survival radio equipment or emergency location beacon — aircraft (ELBA) is required, shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.

3.1.3.4 Aircraft shall continuously guard the VHF emergency frequency 121.5 MHz in areas or over routes where the possibility of interception of aircraft or other hazardous situations exist, and a requirement has been established by the appropriate authority.

3.1.3.4.1 Aircraft on flights other than those specified in 3.1.3.3 and 3.1.3.4 should guard the emergency frequency 121.5 MHz to the extent possible.

3.1.3.5 Unless exempted by the appropriate ATS authority or by the appropriate air traffic services unit under conditions specified by that authority, a controlled flight shall report to the appropriate air traffic services unit, as soon as possible, the time and level of passing each designated compulsory reporting point, together with any other required information. Position reports shall similarly be made in relation to additional points when requested by the appropriate air traffic services unit. In the absence of designated reporting points, position reports shall be made at intervals prescribed by the appropriate ATS authority or specified by the appropriate air traffic services unit.

Note.— The conditions and circumstances in which secondary surveillance radar (SSR) Mode C transmission of pressure-altitude satisfies the requirement for level information in position reports are indicated in the PANS-RAC, Part II (Doc 4444).

3.1.3.6 Visual flight rules (VFR) flights shall comply with the provisions of 3.1.3.1 and 3.1.3.5 when operated in controlled airspace (instrument/visual).

3.1.3.7 A VFR flight operating outside controlled airspace (instrument/visual) but within or into areas, or along routes, designated by the appropriate ATS authority in accordance with 3.1.2.1 c) or d), shall maintain continuous listening watch on the appropriate radio frequency of, and report its position as necessary to, the air traffic services unit providing flight information service.

3.1.3.8 An instrument flight rules (IFR) flight operating outside controlled airspace but within or into areas, or along routes, designated by the appropriate ATS authority in accordance with 3.1.2.1 c) or d), shall maintain a listening watch on the appropriate radio frequency and establish two-way communication, as necessary, with the air traffic services unit providing flight information service.

3.1.3.9 An IFR flight operating outside controlled airspace and required by the appropriate ATS authority to:

- submit a flight plan,
- maintain a listening watch on the appropriate radio frequency and establish two-way communication, as necessary, with the air traffic services unit providing flight information service,

shall report position as specified in 3.1.3.5 for controlled flights.

3.1.3.10 Aircraft electing to use the air traffic advisory service whilst operating IFR within specified advisory airspace are expected to comply with the provisions of 3.1.3.1 and 3.1.3.5, except that the flight plan and changes thereto are not subjected to clearances and that two-way communication will be maintained with the unit providing the air traffic advisory service.

3.1.4 Co-ordination between ATS units

Co-ordination in respect of the provision of flight information service and alerting service

3.1.4.1 Where this is deemed necessary by the appropriate ATS authority or authorities, co-ordination between ATS units providing flight information service in adjacent flight information regions (FIRs) shall be effected in respect of IFR and VFR flights, in order to ensure continued flight information service to such aircraft in specified areas or along specified routes. Such co-ordination shall be effected in accordance with an agreement between the ATS units concerned.

3.1.4.2 Where co-ordination of flights is effected in accordance with 3.1.4.1 above, this shall include transmission of the following information on the flight concerned:

- a) appropriate items of the current flight plan; and
- b) the time at which last contact was made with the aircraft concerned.

3.1.4.3 This information shall be forwarded to the air traffic services unit in charge of the next flight information region in which the aircraft will operate prior to the aircraft entering such flight information region.

3.1.4.4 When so required by agreement between the appropriate ATS authorities to assist in the identification of strayed or unidentified aircraft and thereby eliminate or reduce the need for interception, flight plan and flight progress information for flights along specified routes or portions of routes in close proximity to flight information region boundaries shall also be provided to the air traffic services units in charge of the flight information regions adjacent to such routes or portions of routes.

Co-ordination in respect of the provision of air traffic advisory service

3.1.4.5 ATS units providing air traffic advisory service shall apply the co-ordination procedures specified in 3.1.4.6 to 3.1.4.19 with respect to such aircraft having elected to use this type of service.

Co-ordination between units providing area control service within contiguous control areas

3.1.4.6 Area control centres shall forward from centre to centre, as the flight progresses, necessary flight plan and control information.

Note.— See also 3.1.4.4.

3.1.4.7 The information specified in 3.1.4.6 shall be transmitted in sufficient time to permit reception and analysis of the data by the receiving centre and necessary co-ordination between the two centres concerned.

3.1.4.8 If the departure aerodrome of an aircraft is not a sufficient distance from the boundary of an adjacent control area to permit transmission of the necessary flight plan and control information to the accepting centre after take-off and allow adequate time for reception, analysis and co-ordination, the transferring centre shall, prior to clearing the aircraft, forward the data required by 3.1.4.6 to the accepting centre together with a request for acceptance in accordance with 3.1.4.10.

3.1.4.8.1 In the case of an aircraft in flight requiring an initial clearance at a similar distance from the boundary of an adjacent control area, the aircraft shall be held within the transferring centre's area until flight plan and control information can be forwarded and co-ordination can be effected with the adjacent centre.

3.1.4.8.2 In the case of an aircraft requesting a change in its current flight plan, or of a transferring centre proposing to change the current flight plan of an aircraft in the vicinity of the boundary in circumstances similar to that described, the revised clearance shall be withheld pending acceptance of the proposal by the adjacent centre.

3.1.4.9 When boundary estimate data are to be transmitted in the circumstances mentioned in 3.1.4.8, the time in respect of an aircraft not yet departed shall be based upon the estimated time of departure as determined by the ATC unit at the departure aerodrome. In respect of an aircraft in flight requiring an initial clearance, the time shall be based on the estimated elapsed time from the holding point to the boundary plus the time expected to be needed for co-ordination.

3.1.4.10 With regard to the information provided by the transferring centre in accordance with 3.1.4.6 and 3.1.4.8, the accepting centre shall notify the transferring centre either that it is able to accept the aircraft concerned under the conditions specified or it shall specify to the transferring centre which changes to the flight plan are required so that the aircraft can be accepted; however, where special arrangements exist between the ATC units concerned, this notification shall only be required if the aircraft cannot be accepted as offered by the transferring centre.

3.1.4.11 The primary responsibility for the control of air traffic remains with the area control centre in whose control area the aircraft is operating until the time the aircraft is estimated to cross the boundary of that control area, even when control of one or more aircraft is exercised under delegation by other air traffic control units. It is emphasized that the accepting centre which is in communication with an aircraft not yet having reached the incoming transfer of control point shall not alter the clearance of such aircraft without the prior approval of the transferring centre.

Note.— When so agreed between the area control centres concerned, the transfer of control point may be a point other than the control area boundary.

3.1.4.12 In order to effect the transfer of control of an aircraft, the transferring centre shall, except as provided in 3.1.4.13 and in 3.1.4.13.1, notify the accepting centre that the aircraft is in position to be handed over to it, and that the responsibility for control should be assumed by the accepting centre, either forthwith or, if a specified transfer of control point has been established, at the time when the aircraft passes that point. If the SSR mode and code currently radiated by the aircraft are known, and the accepting centre is able to make use of these data, they should be included in such notification. If transfer of radar control is to be effected, such notification shall also include information regarding the position (and track and speed, if required) of the radar target of the aircraft. Such notification shall also include significant changes in the data transmitted in accordance with 3.1.4.6 which have not been previously forwarded.

3.1.4.13 Where special arrangements exist between two area control centres which are not equipped with radar and which do not employ automatic data processing equipment, the notification in 3.1.4.12 need only be made in circumstances where it is appropriate to forward a revision to previously transmitted current flight plan and control data at the time when the aircraft is in a position to be handed over to the accepting centre.

3.1.4.13.1 Except when transfer of radar control is to be effected, non-radar separation shall be established by a radar controller before an aircraft under radar control reaches the limits of that controller's area of responsibility, or before the aircraft leaves the area of radar coverage.

3.1.4.14 Where non-radar separation minima are being applied, the transfer of air-ground communications of an aircraft from the transferring to the accepting centre shall be made five minutes before the time at which the aircraft is estimated to reach the common control area boundary, unless otherwise agreed between the two area control centres concerned.

3.1.4.15 In circumstances where radar separation minima are being applied at the time of transfer of control, the transfer of air-ground communications of an aircraft from the transferring to the accepting centre shall be made immediately after the accepting centre has agreed to assume control unless the provisions of 3.1.4.13.1 are applied.

3.1.4.16 A notification from the transferring centre that the aircraft will be cleared or has already been cleared to establish radiocommunications with the accepting centre is only required in those cases where this has been agreed between the two area control centres concerned.

3.1.4.17 The accepting centre shall notify the transferring centre that radiocommunication has been established with the aircraft being transferred and control of the aircraft has been assumed, unless otherwise specified by agreement between the area control centres concerned.

3.1.4.18 In cases where a portion of a control area is so situated that the time taken by aircraft to traverse it does not permit the application of control by the centre concerned, agreement should be reached to provide for direct transfer between the centres responsible for the adjacent control areas, provided that the intermediate centre is fully informed of such traffic; it may also require the other centres to comply with any necessary requests to obviate interference with its own traffic.

3.1.4.19 In the case where a flight ceases to be operated as a controlled flight, i.e. by leaving controlled airspace or by cancelling its IFR flight and proceeding on VFR in airspace where VFR flights are not controlled, the area control centre concerned shall ensure that appropriate information on the flight is forwarded to ATS unit(s) responsible for the provision of flight information and alerting services for the remaining portion of the flight, in order to ensure that such services will, in fact, be provided to the aircraft.

3.1.5 Transmission of ATS messages

Filed flight plan (FPL) messages

3.1.5.1 Unless repetitive flight plan procedures are being applied or current flight plan messages are being employed, FPL messages shall be transmitted for all flights for which a flight plan has been submitted with the object of being provided with air traffic control service, flight information service or alerting service along part or the whole of the route of flight.

3.1.5.2 An FPL message shall be originated and addressed as follows by the air traffic services unit serving the departure aerodrome or, when applicable, by the air traffic services unit receiving a flight plan from an aircraft in flight:

- a) an FPL message shall be sent to the area control centre or flight information centre serving the control area or flight information region within which the departure aerodrome is situated;

- b) unless basic flight plan data are already available as a result of arrangements made for repetitive flight plans, an FPL message shall be sent to all centres in charge of each flight information region or upper flight information region along the route, which are unable to process current data. In addition, an FPL message shall be sent to the aerodrome control tower at the destination aerodrome. If so required, an FPL message shall also be sent to flow management centres responsible for ATS units along the route;
- c) when a potential reclearance in flight request (RIF) is indicated in the flight plan, the FPL message shall be sent to the additional centres concerned and to the aerodrome control tower of the revised destination aerodrome;
- d) where it has been agreed to use current flight plan (CPL) messages but where information is required for early planning of traffic flow, an FPL message shall be transmitted to the area control centres concerned;
- e) for a flight along routes where flight information service and alerting service only are provided, an FPL message shall be addressed to the centre in charge of each flight information region or upper flight information region along the route and to the aerodrome control tower at the destination aerodrome.

3.1.5.3 In the case of a flight through intermediate stops, where flight plans for each stage of the flight are filed at the first departure aerodrome, the following procedure shall be applied:

- a) the air traffic services reporting office at the first departure aerodrome shall:
 - 1) transmit an FPL message for the first stage of flight in accordance with 3.1.5.2;
 - 2) transmit a separate FPL message for each subsequent stage of flight, addressed to the air traffic services reporting office at the appropriate subsequent departure aerodrome;
- b) the air traffic services reporting office at each subsequent departure aerodrome shall take action on receipt of the FPL message as if the flight plan has been filed locally.

3.1.5.4 When so required by agreement between the appropriate ATS authorities to assist in the identification of flights and thereby eliminate or reduce the need for interceptions in the event of deviations from assigned track, FPL messages for flights along specified routes or portions of routes in close proximity to flight information region boundaries shall also be addressed to the centres in charge of each flight information region or upper flight information region adjacent to such routes or portions of routes.

3.1.5.5 FPL messages shall normally be transmitted immediately after the filing of the flight plan. However, if a flight plan is filed more than 24 hours in advance of the estimated off-block time of the flight to which it refers, that flight plan shall be held in abeyance until at most 24 hours before the flight begins so as to avoid the need for the insertion of a date group into that flight plan. In addition, if a flight plan is filed early and the provisions of 3.1.5.2 b) or e) or 3.1.5.3 apply, transmission of the FPL message may be withheld until one hour before the estimated off-block time, provided that this will permit each air traffic services unit concerned to receive the information at least 30 minutes before the time at which the aircraft is estimated to enter its area of responsibility.

Current flight plan (CPL) messages

3.1.5.6 Unless basic flight plan data have already been distributed (FPL or RPL) which will be supplemented by co-ordination data in the estimate message, a CPL message shall be transmitted by each area control centre to the next area control centre and from the last area control centre to the aerodrome control tower at the destination aerodrome, for each controlled flight, and for each flight provided with air traffic advisory service along routes or portions of routes where it has been determined by the appropriate ATS authority that adequate point-to-point communications exist and that conditions are otherwise suitable for forwarding current flight plan information.

3.1.5.7 When an aircraft traverses a very limited portion of a control area where, by agreement between the appropriate ATS authorities concerned, co-ordination of air traffic through that portion of the control area has been delegated to and is effected directly by the two centres whose control areas are separated by that portion, CPLs shall be transmitted directly between such units.

3.1.5.8 A CPL message shall be transmitted in sufficient time to permit each air traffic services unit concerned to receive the information at least 20 minutes before the time at which the aircraft is estimated to pass the transfer of control point or boundary point at which it comes under the control of such unit, unless another period of time has been prescribed by the appropriate ATS authority. This procedure shall apply whether or not the ATS unit responsible for origination of the message has assumed control of, or established contact with, the aircraft by the time the transmission is to be effected.

3.1.5.9 When a CPL message is transmitted to a centre which is not using automatic data processing equipment, the period of time specified in 3.1.5.8 may be insufficient, in which case an increased lead-time shall be agreed.

3.1.5.10 A CPL message shall include only information concerning the flight from the point of entry into the next control area or advisory airspace to the destination aerodrome.

Departure (DEP) messages

3.1.5.11 Unless otherwise prescribed on the basis of regional air navigation agreements, a DEP message shall be transmitted immediately after the departure of an aircraft for which basic flight plan data have been previously distributed.

3.1.5.12 The DEP message shall be transmitted by the ATS unit serving the departure aerodrome to all recipients of basic flight plan data.

3.1.5.13 On the basis of regional air navigation agreement, DEP messages may be omitted for IFR flights operated within areas or along routes designated by mutual agreement between the States concerned, provided reliable ATS speech circuits exist between successive ATS units.

Estimate (EST) messages

3.1.5.14 When basic flight plan data for a flight have been provided, an EST message shall be transmitted by each area control centre or flight information centre to the next area control centre or flight information centre along the route of flight.

3.1.5.15 An EST message shall be transmitted in sufficient time to permit the air traffic services unit concerned to receive the information at least 20 minutes before the time at which the aircraft is estimated to pass the transfer of control point or boundary point at which it comes under the control of such unit, unless another period of time has been prescribed by the appropriate ATS authority. This procedure shall apply whether or not the area control centre or flight information centre responsible for origination of the message has assumed control of, or established contact with, the aircraft by the time the transmission is to be effected.

3.1.5.16 When an EST message is transmitted to a centre which is not using automatic data processing equipment, the period of time specified in 3.1.5.15 may be insufficient, in which case an increased lead-time shall be agreed.

3.1.6 Facilities for communications between ATS units

Note.— Indication by time of the speed with which the communication should be established is provided as a guide to communication services, particularly to determine the types of communication channels required, e.g. that “instantaneous” is intended to refer to communications which effectively provide for immediate access between controllers; “fifteen seconds” to accept switchboard operation and “five minutes” to mean methods involving retransmission.

Communications within a flight information region

3.1.6.1 A flight information centre shall have facilities for communications with the following units providing a service within its area of responsibility:

- a) the area control centre, unless collocated;
- b) approach control offices;
- c) aerodrome control towers.

3.1.6.2 An area control centre, in addition to being connected to the flight information centre as prescribed in 3.1.6.1, shall have facilities for communications with the following units providing a service within its area of responsibility:

- a) approach control offices;
- b) aerodrome control towers;
- c) air traffic services reporting offices, when separately established.

3.1.6.3 The communication facilities required under 3.1.6.1 and 3.1.6.2 shall include provisions for:

- a) communications by direct speech, whereby for the purpose of transfer of radar control the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds; and
- b) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes.

3.1.6.4 In all cases where automatic transfer of data to and/or from air traffic services computers is required, suitable facilities for automatic recording should be provided.

Note.— The requirements for communication between ATS units and military units are given in 3.1.8.

3.1.6.5 The communication facilities required in accordance with 3.1.6.1 and 3.1.6.2 should be supplemented, as and where necessary, by facilities for other forms of visual or audio communications, for example, closed circuit television or separate information processing systems.

3.1.6.6 All facilities for direct-speech communications between air traffic services units and between air traffic services units and appropriate military units shall be provided with automatic recording.

Communications between flight information regions

3.1.6.7 Flight information centres and area control centres shall have facilities for communications with all adjacent flight information centres and area control centres.

3.1.6.7.1 These communication facilities shall in all cases include provisions for messages in a form suitable for retention as a permanent record, and delivery in accordance with transit times specified by regional air navigation agreements.

3.1.6.7.2 Unless otherwise prescribed on the basis of regional air navigation agreements, facilities for communications between area control centres serving contiguous control areas shall, in addition, include provisions for direct-speech communications with automatic recording, whereby for the purpose of transfer of radar control the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds.

3.1.6.7.2.1 When so required by agreement between the States concerned in order to eliminate or reduce the need for interceptions in the event of deviations from assigned track, facilities for communications between adjacent flight information centres or area control centres other than those mentioned in 3.1.6.7.2 shall include provisions for direct-speech communications. The communication facilities shall be provided with automatic recording.

3.1.6.7.2.2 The communication facilities in 3.1.6.7.2.1 should permit communications to be established normally within fifteen seconds.

3.1.6.8 Adjacent ATS units should be connected in all cases where special circumstances exist.

Note.— Special circumstances may be due to traffic density, types of aircraft operations and/or the manner in which the airspace is organized and may exist even if the control areas and/or control zones are not contiguous or have not (yet) been established.

3.1.6.9 Wherever local conditions are such that it is necessary to clear aircraft into an adjacent control area prior to departure, an approach control office and/or aerodrome control tower should be connected with the area control centre serving the adjacent area.

3.1.6.10 The communication facilities in 3.1.6.8 and 3.1.6.9 should include provisions for communications by direct speech with automatic recording, whereby for the purpose of transfer of radar control the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds.

3.1.6.11 In all cases where automatic exchange of data between air traffic services computers is required, suitable facilities for automatic recording should be provided.

3.1.6.12 Appropriate procedures for direct-speech communications should be developed to permit immediate connexions to be made for very urgent calls concerning the safety of aircraft, and the interruption, if necessary, of less urgent calls in progress at the time.

3.1.7 Co-ordination between military and ATS authorities/units

3.1.7.1 Air traffic services authorities shall establish and maintain close co-operation with military authorities responsible for activities that may affect flights of civil aircraft.

3.1.7.2 Co-ordination of activities potentially hazardous to civil aircraft shall be effected in accordance with Annex 11, 2.16.

3.1.7.3 Arrangements shall be made to permit information relevant to the safe and expeditious conduct of flights of civil aircraft to be promptly exchanged between air traffic services units and appropriate military units.

3.1.7.3.1 Air traffic services units shall, either routinely or on request, in accordance with locally agreed procedures, provide appropriate military units with pertinent flight plan and other data concerning flights of civil aircraft. In order to eliminate or reduce the need for interceptions, air traffic services authorities shall designate any areas or routes where the requirements of Annex 2 concerning flight plans, two-way communications and position reporting apply to all flights to ensure that all pertinent data are available in appropriate air traffic services units specifically for the purpose of facilitating identification of civil aircraft.

3.1.7.3.2 Special procedures shall be established in order to ensure that:

- a) air traffic services units are notified if a military unit observes that an aircraft which is, or might be, a civil aircraft is approaching, or has entered, any area in which interception might become necessary;
- b) all possible efforts are made to confirm the identity of the aircraft and to provide it with the navigational guidance necessary to avoid the need for interception.

3.1.7.3.3 A model operational Letter of Agreement between an ATS unit and a military unit is presented in Appendix B.

3.1.8 Facilities for communications between ATS units and military units

Note.— Indication by time of the speed with which the communication should be established is provided as a guide to communication services, particularly to determine the types of communication channels required, e.g. that “instantaneous” is intended to refer to communications which effectively provide for immediate access between controllers, “fifteen seconds” to accept switchboard operation and “five minutes” to mean methods involving retransmission.

3.1.8.1 A flight information centre and an area control centre shall have facilities for communications with appropriate military units providing a service within their respective area of responsibility.

3.1.8.2 An approach control office and an aerodrome control tower shall have facilities for communications with appropriate military units providing a service within their respective area of responsibility.

3.1.8.3 The communication facilities required under 3.1.8.1 shall include provisions for rapid and reliable communications between the air traffic services unit concerned and the military unit(s) responsible for control of interception operations within the area of responsibility of the air traffic services unit.

3.1.8.4 The communication facilities required under 3.1.8.1 shall include provisions for:

- a) communications by direct speech, whereby for the purpose of transfer of radar control the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds; and
- b) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes.

3.1.8.5 In all cases where automatic transfer of data to and/or from air traffic services computers is required, suitable facilities for automatic recording should be provided.

3.1.8.6 The communication facilities required in accordance with 3.1.8.1 and 3.1.8.2 should be supplemented, as and where necessary, by facilities for other forms of visual or audio communications, for example, closed circuit television or separate information processing systems.

3.1.8.7 The communication facilities required under 3.1.8.2 shall include provisions for communications by direct speech arranged for conference communications.

3.1.8.8 All facilities for direct-speech communications between air traffic services units and between air traffic services units and appropriate military units shall be provided with automatic recording.

3.1.8.9 Appropriate procedures for direct-speech communications should be developed to permit immediate connexions to be made for very urgent calls concerning the safety of aircraft, and the interruption, if necessary, of less urgent calls in progress at the time.

3.1.9 Action by ATS units in respect of unidentified aircraft

3.1.9.1 As soon as an air traffic services unit becomes aware of an unidentified aircraft in its area, it shall endeavour to establish the identity of the aircraft whenever this is necessary for the provision of air traffic services or required by the appropriate military authorities in accordance with locally agreed procedures. To this end, the air traffic services unit shall take such of the following steps as are appropriate in the circumstances:

- a) attempt to establish two-way communication with the aircraft;
- b) inquire of other air traffic services units within the flight information region about the flight and request their assistance in establishing two-way communication with the aircraft;
- c) inquire of air traffic services units serving the adjacent flight information regions about the flight and request their assistance in establishing two-way communication with the aircraft;
- d) attempt to obtain information from other aircraft in the area.

3.1.9.2 The air traffic services unit shall, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established.

Note.— Requirements for co-ordination between military authorities and air traffic services are specified in 3.1.7.

3.1.10 Identification by means of radar

Establishment of radar identity

3.1.10.1 Radar identification shall be achieved by at least one of the following methods:

- a) by correlating a particular radar target with an aircraft reporting its position over, or as bearing and distance from, a prescribed point displayed on the radar map, and by ascertaining that the track of the particular target is consistent with the aircraft path or reported heading;

Note 1.— Caution must be exercised when employing this method since a position reported in relation to a prescribed point may not coincide precisely with the radar target of the aircraft on the radar map. The appropriate ATS authority may, therefore, prescribe additional conditions for the application of this method, e.g.:

- i) *a level or levels above which this method should not be applied in respect of specified navigation aids;*

- ii) a distance from the radar site beyond which this method should not be applied;
- iii) position reports over fan marker beacons should be used for identification purposes only when the aircraft traverses the minor axis.

Note 2.— The term “a prescribed point” refers to a geographical point designated by the appropriate ATS authority as suitable for the purpose of radar identification. It is normally a reporting point defined by reference to a radio navigation aid or aids but it may be a prominent landmark.

b) by ascertaining the aircraft heading, if circumstances require, and following a period of track observation:

- instructing the pilot to execute one or more changes of heading of 30 degrees or more and correlating the movements of one particular radar target with the aircraft’s acknowledged execution of the instructions given; or
- correlating the movements of a particular radar target with manoeuvres currently executed by an aircraft having so reported.

When using these methods, the radar controller shall:

- i) verify that the movements of not more than one radar target correspond with those of the aircraft;
- ii) ensure that the manoeuvre(s) will not carry the target outside the coverage of the radar display;

Note 1.— Caution must be exercised when employing these methods in areas where route changes normally take place.

Note 2.— With reference to ii) above, see also 3.2.5.5 regarding radar vectoring of controlled aircraft.

- c) by correlating the position of an observed radar target with a Class A position (accurate within 9 km (5 NM)) of an aircraft obtained by direction-finding triangulation, superimposed on the radar map, and by ascertaining that the track of the observed radar target is consistent with the aircraft’s reported heading;
- d) by correlating an observed radar target with an aircraft which is known to have just departed, provided that the identification is achieved within 2 km (1 NM) from the end of the runway used;

Note.— Particular care should be taken to avoid confusion with aircraft holding over or overflying the aerodrome, or with aircraft departing from or making a missed approach over adjacent runways.

e) by transfer of radar identity (see 3.1.10.6 and 3.1.10.7).

3.1.10.2 Use should be made of direction-finding bearings to assist in radar identification of an aircraft. This method, however, should not be used as the sole means of establishing radar identity, unless so prescribed by the appropriate ATS authority for particular cases under specified conditions.

3.1.10.3 When two or more radar targets are observed in close proximity, or are observed to be making similar movements at the same time, or when doubt exists as to the identity of a radar target for any other reason, changes of heading should be prescribed or repeated as many times as necessary, or additional methods of identification should be employed, until all risk of error in identification is eliminated.

3.1.10.4 Where SSR is used, aircraft may be identified by one or more of the following procedures:

Note.— The procedures a) to d) below are not listed in order of preference.

- a) Observation of compliance with an instruction to operate the special position identification (SPI) feature.

Note.— Caution must be exercised when employing this method since:

- i) *excessive radar coverage caused by anomalous wave propagation in certain meteorological conditions may produce SPI-type responses originating in areas beyond the coverage of the display, and*
- ii) *nearly simultaneous requests for SPI transmission within the same area may give rise to errors in identification.*

- b) Observation of compliance with an instruction to set a specific code.

- c) Observation of compliance with an instruction to change mode.

- d) Recognition of an assigned individual code the setting of which has been verified.

Note 1.— The use of this procedure requires a system of code allotment which ensures that each aircraft in a given portion of airspace is assigned a distinct code (see 3.1.10.8 and 3.1.10.9).

Note 2.— When an individual (four-digit) code has been assigned to an aircraft a check must be made at the earliest opportunity to ensure that the code set by the pilot is identical to that assigned for the flight. Only after this verification check has been made may the individual code be used as a basis for identification.

Note 3.— If the code is assigned by an ATS unit not having 4 096 code capability, the first ATS unit with such a capability should check that the code setting is correct. Once the check has been made the individual code may be used continuously as a means of maintaining identity.

3.1.10.5 When no other means of establishing identification is available, instructions may be given to switch the transponder from “ON” to “STANDBY” and back to “ON” again, provided that the aircraft concerned is operating in an area of proven SSR coverage. Extreme caution should be used when employing this method since the same effect may be observed on the display as a result of:

- a) temporary antenna shadowing caused by a change in attitude of another aircraft in the area; or
- b) simultaneous use of the same procedure by another radar controller operating within the same geographical area.

Transfer of radar identity (see also 3.1.10.1 e))

3.1.10.6 Transfer of identity of a radar target from one radar controller to another should only be attempted when it is considered that the aircraft is within the coverage of the accepting controller’s radar display.

3.1.10.7 Transfer of radar identity shall be effected by one of the following methods:

- a) direct designation (pointing with the finger) of the radar target, if the two radar displays are adjacent, or if a common “conference” type of radar display is used;

Note.— Attention must be given to any errors which might occur due to parallax effects.

- b) designation of the radar target by reference to, or in terms of bearing and distance from, a geographical position or navigational facility accurately indicated on both radar displays, together with the track of the observed radar target if the route of the aircraft is not known to both controllers;

Note.— Caution must be exercised before establishing radar identity using this method, particularly if other radar targets are observed on similar headings and in close proximity to the aircraft under radar control. Inherent radar deficiencies, such as inaccuracies in bearing and distance of the targets displayed on individual radars and parallax errors, may cause the indicated position of an aircraft in relation to the known point to differ between the two radar displays. The appropriate ATS authority may, therefore, prescribe additional conditions for the application of this method, e.g.:

- i) a maximum distance from the common reference point used by the two controllers; and*
 - ii) a maximum distance between the position of the target as observed by the accepting controller and the one stated by the transferring controller.*
- c) designation of the radar target by an electronic marker or symbol, provided that only the one radar target is thereby indicated and there is no possible doubt of correct identification;

OR where SSR is used:

- d) instruction to the aircraft by the transferring controller to change code and the observation of the change by the accepting controller;
- e) instruction to the aircraft by the transferring controller to operate the SPI feature and observation of this response by the accepting controller;

Note.— Successful use of procedures d) and e) requires prior co-ordination between the controllers, since the indications to be observed by the accepting controller are of short duration.

- f) notification of the individual code of the aircraft.

Note.— See Note 1 following 3.1.10.4 d).

SSR codes

3.1.10.8 The specific codes to be applied should be agreed between the administrations concerned, taking into account other users of the system.

3.1.10.9 The appropriate ATS authority shall establish procedures for the allotment of SSR codes in conformity with regional air navigation agreements. These procedures should be based on the following principles:

3.1.10.9.1 The number of code changes required of a pilot should be kept to the minimum consistent with the essential needs of ATS.

3.1.10.9.2 Where there is a need for individual identification and ground equipment permits its employment, each aircraft should be assigned a different code.

3.1.10.9.3 The procedures (for code assignment) should be compatible with those practised in adjacent areas.

3.1.10.10 A controller shall only assign codes in accordance with the procedures laid down by the appropriate ATS authority.

3.1.10.11 Whenever a code is assigned to an aircraft, the setting of this code shall be verified by the controller at the earliest opportunity.

- # 3.1.10.12 Code 7700 shall be used on Mode A to provide recognition of an aircraft in an emergency.
- # 3.1.10.13 Code 7600 shall be used on Mode A to provide recognition of an aircraft with radiocommunication failure.
- # 3.1.10.14 Code 7500 shall be used on Mode A to provide recognition of an aircraft which is being subjected to unlawful interference.
- # 3.1.10.15 Appropriate provisions should be made in the ground equipment to ensure immediate recognition of Codes 7500, 7600, and 7700.
- # 3.1.10.16 Code 0000 should be reserved for allocation subject to regional agreement, as a general purpose code.
- # 3.1.10.17 Code 2000 shall be reserved for use on Mode A to provide recognition of an aircraft which has not received any instructions from air traffic control units to operate the transponder.

Transponder operating procedures

- # 3.1.10.18 To ensure the safe and efficient use of SSR, pilots and controllers should strictly adhere to published operating procedures. In particular, standard radiotelephony phraseology shall be used and the correct setting of modes and codes in transponders and ground decoding equipment shall be ensured at all times.
- # 3.1.10.19 When an aircraft carries a serviceable transponder, the pilot shall operate the transponder at all times during flight, regardless of whether the aircraft is within or outside airspace where SSR is used for ATS purposes.
 - 3.1.10.20 In the event of transponder failure, the pilot should inform the appropriate ATS units.
- # 3.1.10.21 Except as specified in 3.1.10.29, 3.1.10.30 and 3.1.10.31 in respect of emergency, radiocommunication failure or unlawful interference, the pilot shall:
 - a) operate the transponder and select modes and codes as individually directed by the ATC unit with which the pilot is in contact; or
 - b) operate the transponder on modes and codes as prescribed on the basis of regional air navigation agreements; or
 - c) in the absence of any ATC directions or regional air navigation agreements, operate the transponder on Mode A Code 2000.
- # 3.1.10.22 When the aircraft carries serviceable Mode C equipment, the pilot shall continuously operate this mode, unless otherwise directed by ATC.
- # 3.1.10.23 Whenever Mode C is operated, pilots shall, in air-ground voice communications wherein the transmission of level information is required, give such information by stating their level to the nearest full 30 m or 100 ft as indicated on the pilot's altimeter.
- # 3.1.10.24 When requested by ATC to specify the type of transponder carried aboard the aircraft, pilots shall indicate this by using the characters prescribed for insertion of this information in the flight plan, e.g. "TRANSPONDER C (spoken as Charlie)".
- # 3.1.10.25 When requested by ATC to "RECYCLE (mode, code)" the pilot shall reselect the assigned mode and code.

3.1.10.26 When requested by ATC to “CONFIRM THAT YOU ARE SQUAWKING ASSIGNED CODE [mode] (assigned code)” the pilot shall verify the mode and code setting on the transponder and confirm to ATC the setting displayed on the controls of the transponder.

3.1.10.27 Pilots shall not operate the SSR SPI feature unless requested by ATC.

Note.— Although a low sensitivity feature is not required in SSR airborne equipment by the specification of Annex 10, it is known that some equipment still in use does have this feature. Pilots of aircraft fitted with such equipment should not use the low sensitivity feature except when requested by ATC.

3.1.10.28 It should be noted that the use by civil aircraft of SSR transponders which do not conform to the specifications in Annex 10 may result in misidentification of the aircraft.

3.1.10.29 *Emergency procedures*

3.1.10.29.1 The pilot of an aircraft encountering a state of emergency shall set the transponder to Mode A Code 7700 except when previously directed by ATC to operate the transponder on a specified code. In the latter case the pilot shall maintain the specified code unless otherwise advised by ATC.

3.1.10.29.2 Notwithstanding the procedures at 3.1.10.29.1, a pilot may select Mode A Code 7700 whenever there is specific reason to believe that this would be the best course of action.

Note 1.— Attention is drawn to the fact that the use of Mode A Code 7700 in certain areas may result in the elimination of the SSR response of the aircraft from the ATC radar display in cases where the ground equipment is not provided with automatic means for its immediate recognition.

Note 2.— The requirement for automatic means of recognition of Mode A Code 7700 is contained in Annex 10, Volume I, 2.5.4.2.1.

3.1.10.30 *Radiocommunication failure procedures*

3.1.10.30.1 The pilot of an aircraft losing two-way communications shall set the transponder to Mode A Code 7600.

Note.— A controller observing a response on the radiocommunications failure code will ascertain the extent of the failure by instructing the pilot to operate the SPI feature or to change code. Where it is determined that the aircraft receiver is functioning, further control of the aircraft will be continued using code changes or SPI transmission to acknowledge receipt of clearances issued.

3.1.10.31 *Unlawful interference with aircraft in flight*

3.1.10.31.1 Should an aircraft in flight be subjected to unlawful interference, the pilot-in-command shall endeavour to set the transponder to Mode A Code 7500 to give indication of the situation unless circumstances warrant the use of Code 7700.

3.1.10.31.2 When a pilot has selected Mode A Code 7500 and is subsequently requested to confirm the code by ATC in accordance with 3.1.10.24 the pilot shall, according to circumstances, either confirm this or not reply at all.

Note.— The absence of a reply from the pilot will be taken by ATC as an indication that the use of Code 7500 is not due to an inadvertent false code selection.

3.1.11 Identification by visual means

3.1.11.1 In daytime and good visibility, identification of a civil aircraft is possible by observing the aircraft type and the nationality and registration marks painted on the aircraft or affixed by other means. At night and in reduced visibility conditions, the installation of a special spotlight on interceptor aircraft will greatly assist in locating and reading civil aircraft registration marks.

3.1.11.2 Annex 7 prescribes that the nationality and registration marks on lighter-than-air aircraft (other than balloons) shall be visible both from the sides and from the ground and that the height of the marks shall be at least 50 centimetres. On heavier-than-air aircraft, the Annex specifies that the marks shall appear once on the lower surface of the wing structure and either on each side of the fuselage or on the upper halves of the vertical tail surfaces, and that the height of the marks shall be at least 50 centimetres on the wings and at least 30 centimetres on the fuselage or tail surfaces.

3.1.11.3 Annex 7 specifies only the minimum size of the registration marks. However, it is necessary also to consider the size, colour contrast and precise position of the fuselage marking in relation to easy visual recognition by an intercepting aircraft from the Phase II intercept position.

3.1.11.4 At night and in poor visibility, identification of a civil aircraft may be enhanced by illumination of the airline logos and/or the nationality and registration marks. Operators whose aircraft operate in areas where there is a risk of interception should therefore consider equipping new aircraft with logo lights and requiring illumination of such lights, where fitted, at all times during flight or at least during periods of twilight, darkness and poor visibility and while flying in cloud.

3.1.11.5 The visibility of nationality and registration marks, and other markings which might identify the aircraft as civil, would be enhanced by the use of reflective paint or other marking material.

3.1.11.6 Pilots of intercepting aircraft should be aware that, due to the leasing of aircraft, flights conducted by an operator and using the radiotelephony call sign of that operator may be using aircraft carrying the logo of another operator, e.g. TRANSWORLD 20 may be using an aircraft carrying the logo of Pan American World Airways.

3.1.11.7 Identification of an aircraft as a civil aircraft may also be enhanced by switching on all cockpit and cabin lights.

3.2 NAVIGATION ASPECTS

3.2.1 General

3.2.1.1 Modern navigation systems are very accurate and reliable. However, experience shows that the superior performance of such systems may induce complacency, which, together with any lapse in the meticulous care required for operating such systems, may lead to serious navigation errors. Vigilance and adherence to established procedures are essential elements for accurate navigation and when combined with the provisions contained in this document will reduce the possibility of interception of civil aircraft.

3.2.1.2 Guidance relating to the use of long range navigation systems is contained in the North Atlantic MNPS Airspace Operations Manual and the NOPAC Operations Manual.

3.2.2 Airborne navigation equipment

Rules applicable to all IFR flights

3.2.2.1 Aircraft shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown.

International commercial aircraft

3.2.2.2 An aeroplane shall be provided with navigation equipment which will enable it to proceed:

- a) in accordance with its operational flight plan; and
- b) in accordance with the requirements of air traffic services;

except when, if not so precluded by the appropriate authority, navigation for flights under the visual flight rules is accomplished by visual reference to landmarks.

International general aviation aircraft

3.2.2.3 An aeroplane shall be provided with navigation equipment which will enable it to proceed:

- a) in accordance with the flight plan; and
- b) in accordance with the requirements of air traffic services;

except when, if not so precluded by the appropriate authority, navigation for flights under the visual flight rules is accomplished by visual reference to landmarks at least every 110 km (60 NM).

3.2.2.4 Aeronautical information publications specify the navigation equipment to be carried on particular routes.

3.2.3 Adherence to flight plan

3.2.3.1 Unless otherwise authorized or directed by the appropriate air traffic control unit, controlled flights shall, in so far as practicable:

- a) when on an established ATS route, operate along the defined centre line of that route; or
- b) when on any other route, operate directly between the navigation facilities and/or points defining that route.

3.2.3.2 Deviation from the requirements in 3.2.3.1 shall be notified to the appropriate air traffic services unit.

Inadvertent changes

3.2.3.3 In the event that a controlled flight inadvertently deviates from its current flight plan, the following action shall be taken:

- a) *Deviation from track*: if the aircraft is off track, action shall be taken forthwith to adjust the heading of the aircraft to regain track as soon as practicable.

...

3.2.4 Prohibited and restricted areas

3.2.4.1 Aircraft shall not be flown in a prohibited area, or in a restricted area, the particulars of which have been duly published, except in accordance with the conditions of the restrictions or by permission of the State over whose territory the areas are established.

3.2.4.2 The phrase “duly published” in this context is understood to mean published in accordance with the provisions of Annex 15.

3.2.5 Navigational assistance by ATS units

3.2.5.1 As soon as an air traffic services unit becomes aware of a strayed aircraft, it shall take all necessary steps as outlined in 3.2.5.1.1 and 3.2.5.1.2 to assist the aircraft and to safeguard its flight.

Note.— Navigational assistance by an air traffic services unit is particularly important if the unit becomes aware of an aircraft straying, or about to stray, into an area where there is a risk of interception or other hazard to its safety.

3.2.5.1.1 If the aircraft’s position is not known, the air traffic services unit shall:

- a) attempt to establish two-way communication with the aircraft, unless such communication already exists;
- b) use all available means to determine its position;
- c) inform other ATS units into whose area the aircraft may have strayed or may stray, taking into account all the factors which may have affected the navigation of the aircraft in the circumstances;
- d) inform, in accordance with locally agreed procedures, appropriate military units and provide them with pertinent flight plan and other data concerning the strayed aircraft;
- e) request from the units referred to in c) and d) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.

Note.— The requirements in d) and e) apply also to ATS units informed in accordance with c).

3.2.5.1.2 When the aircraft’s position is established, the air traffic services unit shall:

- a) advise the aircraft of its position and corrective action to be taken; and
- b) provide, as necessary, other ATS units and appropriate military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.

3.2.5.2 The information presented on a radar display may be used to perform the following functions in the provision of air traffic control service:

- a) maintain a watch on the progress of air traffic in order to provide the air traffic control unit concerned with:
 - i) improved position information regarding aircraft under control,

- ii) supplementary information regarding other traffic,
- iii) information regarding any significant deviations, by aircraft, from the terms of their respective air traffic control clearances, including their cleared routes;

Note.— Where tolerances regarding such matters as adherence to path, speed or time have been prescribed by the appropriate ATS authority, deviations are not considered significant until such tolerances are exceeded.

- b) maintain radar monitoring of air traffic in order to provide aircraft concerned with information or advice relative to any significant deviations from the terms of their air traffic control clearances, including their cleared routes;

Note.— See Note under 3.2.5.2 a) iii) above.

...

3.2.5.3 An identified controlled aircraft observed to deviate significantly from its intended route or designated holding pattern should be advised accordingly. Appropriate action should also be taken if, in the opinion of the controller, such deviation is likely to affect the control being exercised.

3.2.5.4 Except when transfer of radar control is to be effected, navigational assistance should normally be provided in such a manner as to ensure that the aircraft will not be less than 4.6 km (2.5 NM) from the limit of the controlled airspace unless local arrangements have been made so that separation minima would exist between radar-controlled aircraft operating in adjoining areas.

3.2.5.5 Controlled aircraft should not be vectored into uncontrolled airspace except in case of emergency or in order to circumnavigate severe weather (in which cases the pilot should be so informed), or at the specific request of the pilot.

Use of radar in the flight information service

3.2.5.6 The information presented on a radar display may be used to provide identified aircraft with information to assist the aircraft in its navigation.

...

3.2.6 Navigational assistance by military units

3.2.6.1 Special procedures shall be established in order to ensure that:

- a) air traffic services units are notified if a military unit observes that an aircraft which is, or might be, a civil aircraft is approaching, or has entered, any area in which interception might become necessary;
- b) all possible efforts are made to confirm the identity of the aircraft and to provide it with the navigational guidance necessary to avoid the need for interception.

3.2.6.2 It is expected that navigational guidance will be provided through the appropriate air traffic services unit.

Visual signals used to warn an unauthorized aircraft flying in, or about to enter a restricted, prohibited or danger area

3.2.6.3 By day and by night, a series of projectiles discharged from the ground at intervals of 10 seconds, each showing, on bursting, red and green lights or stars will indicate to an unauthorized aircraft that it is flying in or about to enter a restricted, prohibited or danger area, and that the aircraft is to take such remedial action as may be necessary.

3.3 PROMULGATION OF INFORMATION

3.3.1 Promulgation in aeronautical information publications (AIP)

Air traffic services system

3.3.1.1 Annex 15 requires a description in AIPs of the air traffic services provided and, where necessary, graphic portrayal of flight information regions, controlled airspaces, advisory areas, designated areas and designated routes.

3.3.1.2 A description in the RAC part of the AIP of the procedures governing the operation of SSR transponders, the system of SSR code assignment, and the specific code groups allocated for use within the State, will assist intercept control units in their attempts to identify radar responses as those of civil aircraft.

3.3.1.3 Annex 15 also requires a description or identification in AIPs of designated areas or routes where the requirements of Annex 2 concerning flight plans, two-way communications and position reporting apply to all flights in order to eliminate or reduce the need for interceptions.

Prohibited, restricted and danger areas

3.3.1.4 Description and graphic portrayal, where appropriate, of prohibited, restricted and danger areas shall be given in AIPs and shall include, as appropriate:

- a) identification;
- b) geographical co-ordinates, lateral and vertical limits;
- c) type of restriction or nature of hazard;
- d) risk of interception in the event of penetration;
- e) any other pertinent details.

3.3.2 Promulgation by NOTAM

3.3.2.1 A NOTAM shall be originated and issued promptly whenever the information to be disseminated is of a temporary nature, or is issued under the AIRAC system, or would not be made available with sufficient rapidity by the issue of, or amendment to, an AIP.

3.3.2.2 A NOTAM shall be originated and issued whenever the following information is of direct operational significance:

...

- n) establishment or discontinuance (including activation or de-activation) as applicable, or changes in the status of prohibited, restricted or danger areas;

...

3.3.2.3 *Information to be notified by AIRAC NOTAM*

3.3.2.3.1 The establishment, withdrawal of, and premeditated significant changes (including operational trials) to limits (horizontal and vertical), regulations and procedures applicable to:

- a) flight information regions;
- b) control areas;
- c) control zones;
- d) advisory areas;
- e) ATS routes;
- f) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and ADIZ.

3.3.2.3.2 The establishment and withdrawal of, and premeditated significant changes to temporary danger, prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft.

3.3.3 Depiction on aeronautical charts

Prohibited restricted and danger areas

3.3.3.1 In accordance with Annex 4, prohibited, restricted and danger areas shall be depicted with their identification and vertical limits on Enroute Charts — ICAO and Area Charts — ICAO. They shall also be shown on World Aeronautical Charts — ICAO 1:1 000 000 and Aeronautical Charts — ICAO 1:500 000.

3.3.3.2 Annex 4 recommends, in addition, that prohibited, restricted and danger areas should be shown on Aeronautical Navigation Charts — ICAO Small Scale, when considered to be of importance to air navigation.

Air traffic services system

3.3.3.3 In accordance with Annex 4, the components of the established air traffic services system shall be shown on Enroute Charts — ICAO, where appropriate, and on Area Charts — ICAO, Standard Departure Charts — Instrument (SID) — ICAO and Standard Arrival Charts — Instrument (STAR) — ICAO.

3.3.3.4 Annex 4 also prescribes that significant elements of the air traffic services system shall be shown on World Aeronautical Charts — ICAO 1:1 000 000 and Aeronautical Charts — ICAO 1:500 000 and shall include, where practicable, control zones, aerodrome traffic zones, control areas, flight information region boundaries, controlled airspace (instrument/visual), and other controlled airspace in which VFR flights operate.

3.3.3.5 Annex 4 further recommends that significant elements of the air traffic services system should be shown on Aeronautical Navigation Charts — ICAO Small Scale, when considered to be of importance to air navigation.

4. ELIMINATION OR REDUCTION OF HAZARDS IN THE EVENT OF INTERCEPTION

4.1 INTERCEPTION

4.1.1 Action by States

4.1.1.1 As interceptions of civil aircraft are, in all cases, potentially hazardous, the Council of ICAO has formulated special recommendations which Contracting States are urged to apply in a uniform manner. The term “special recommendations” refers to all subsequent texts which have been extracted from Annex 2, Attachment A (see source references in Appendix A).

4.1.1.2 To eliminate or reduce the hazards inherent in interceptions undertaken as a last resort, all possible efforts should be made to ensure co-ordinated actions by the pilots and ground units concerned. To this end, it is essential that Contracting States take steps to ensure that:

- a) all pilots of civil aircraft be made fully aware of the actions to be taken by them and the visual signals to be used, as specified in 4.1.3 and 4.1.4;
- b) operators or pilots-in-command of civil aircraft implement the provisions in 4.1.5.2 and 4.1.5.3 regarding the capability of aircraft to communicate on 121.5 MHz and the availability of interception procedures and visual signals on board aircraft;
- c) all air traffic services personnel be made fully aware of the actions to be taken by them in accordance with the provisions of 4.1.7;
- d) all pilots-in-command of intercepting aircraft be made aware of the general performance limitations of civil aircraft and of the possibility that intercepted civil aircraft may be in a state of emergency due to technical difficulties or unlawful interference;
- e) clear and unambiguous instructions be issued to intercept control units and to pilots-in-command of potential intercepting aircraft, covering interception manoeuvres, guidance of intercepted aircraft, action by intercepted aircraft, air-to-air visual signals, radiocommunication with intercepted aircraft, and the need to refrain from resorting to the use of weapons;

Note.— See paragraphs 4.1.1.3, 4.1.2, 4.1.4 and 4.1.6.

- f) intercept control units and intercepting aircraft be provided with radiotelephony equipment compatible with the technical specifications of Annex 10, Volume I so as to enable them to communicate with intercepted aircraft on the emergency frequency 121.5 MHz;

- g) secondary surveillance radar facilities be made available to the extent possible to permit intercept control units to identify civil aircraft in areas where they might otherwise be intercepted. Such facilities should permit recognition of discrete four-digit codes in Mode A, including immediate recognition of Mode A, Codes 7500, 7600 and 7700.

Interception manoeuvres

4.1.1.3 A standard method should be established for the manoeuvring of aircraft intercepting a civil aircraft in order to avoid any hazard for the intercepted aircraft. Such method should take due account of the performance limitations of civil aircraft, the need to avoid flying in such proximity to the intercepted aircraft that a collision hazard may be created and the need to avoid crossing the aircraft's flight path or to perform any other manoeuvre in such a manner that the wake turbulence may be hazardous, particularly if the intercepted aircraft is a light aircraft.

Note.— See recommended method in 4.1.2.1, 4.1.2.2 and 4.1.2.3.

4.1.2 Action by intercepting aircraft

Manoeuvres for visual identification

4.1.2.1 The following method is recommended for the manoeuvring of intercepting aircraft for the purpose of visually identifying a civil aircraft:

Phase I

The intercepting aircraft should approach the intercepted aircraft from astern. The element leader, or the single intercepting aircraft, should normally take up a position on the left (port) side, slightly above and ahead of the intercepted aircraft, within the field of view of the pilot of the intercepted aircraft, and initially not closer to the aircraft than 300 metres. Any other participating aircraft should stay well clear of the intercepted aircraft, preferably above and behind. After speed and position have been established, the aircraft should, if necessary, proceed with Phase II of the procedure.

Phase II

The element leader, or the single intercepting aircraft, should begin closing in gently on the intercepted aircraft, at the same level, until no closer than absolutely necessary to obtain the information needed. The element leader, or the single intercepting aircraft, should use caution to avoid startling the flight crew or the passengers of the intercepted aircraft, keeping constantly in mind the fact that manoeuvres considered normal to an intercepting aircraft may be considered hazardous to passengers and crews of civil aircraft. Any other participating aircraft should continue to stay well clear of the intercepted aircraft. Upon completion of identification, the intercepting aircraft should withdraw from the vicinity of the intercepted aircraft as outlined in Phase III.

Phase III

The element leader, or the single intercepting aircraft, should break gently away from the intercepted aircraft in a shallow dive. Any other participating aircraft should stay well clear of the intercepted aircraft and rejoin their leader.

4.1.2.1.1 The recommended method is illustrated in Figure 1 below.

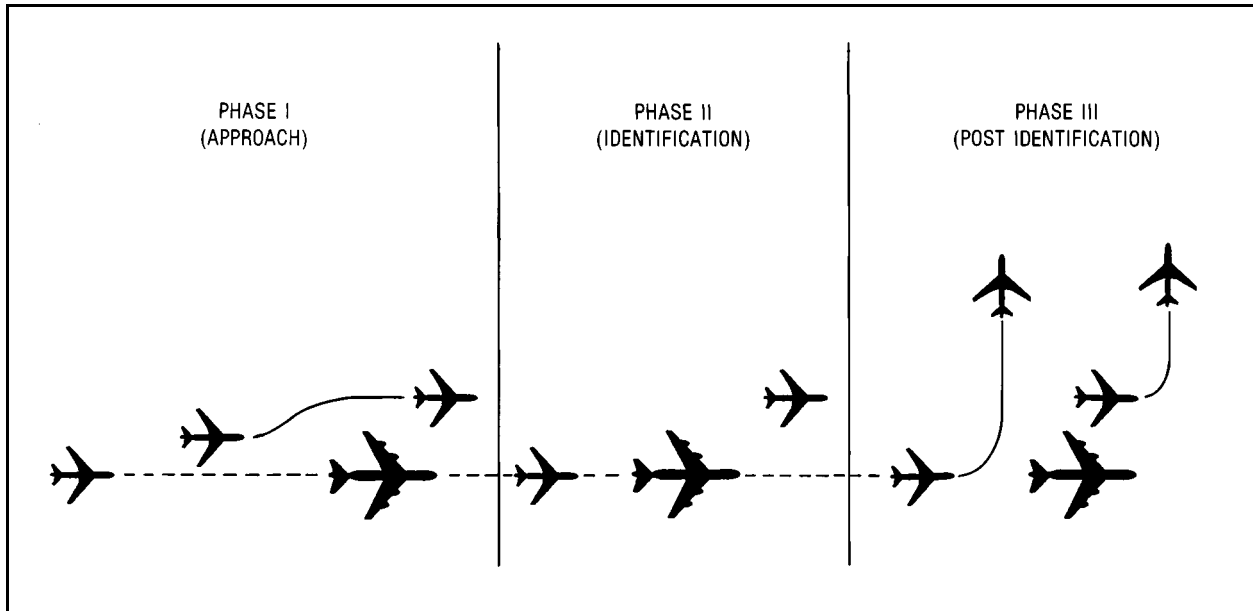


Figure 1. Manoeuvres for visual identification
(Annex 2, Attachment A, 3.2)

Manoeuvres for navigational guidance

4.1.2.2 If, following the identification manoeuvres in Phase I and Phase II above, it is considered necessary to intervene in the navigation of the intercepted aircraft, the element leader, or the single intercepting aircraft, should normally take up a position on the left (port) side, slightly above and ahead of the intercepted aircraft, to enable the pilot-in-command of the latter aircraft to see the visual signals given.

4.1.2.3 It is recognized that meteorological conditions or terrain may occasionally make it necessary for the element leader, or the single intercepting aircraft, to take up a position on the right (starboard) side, slightly above and ahead of the intercepted aircraft. In such case, the pilot-in-command of the intercepting aircraft must take particular care that the intercepting aircraft is clearly visible at all times to the pilot-in-command of the intercepted aircraft.

4.1.2.4 The recommended manoeuvres are illustrated in Figure 2 below.

Attracting attention by visual means

4.1.2.5 It must be recognized that, even in visual meteorological conditions in daytime, it may take several minutes before the flight crew of a civil aircraft notice an intercepting aircraft within their normal limited field of view. This may be particularly true even more so in the case of a civil transport aircraft operating on an IFR flight plan at night under air traffic control service in a low traffic density area.

4.1.2.6 It is indispensable that the pilot-in-command of the intercepting aircraft be satisfied that the pilot-in-command of the intercepted aircraft is aware of the interception and acknowledges the signals given.

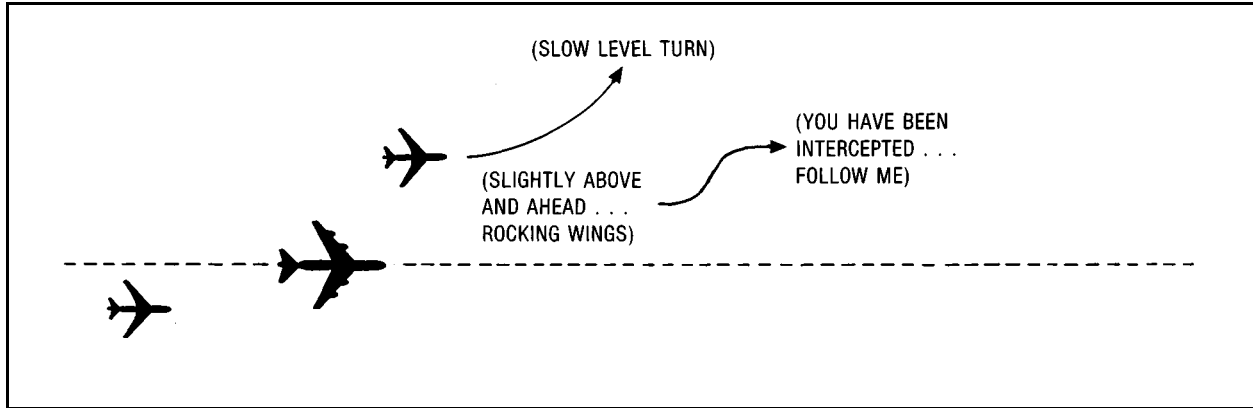


Figure 2. Manoeuvres for navigational guidance
(Annex 2, Attachment A, 3.3)

4.1.2.7 The visual signal recommended for use to attract the attention of the pilot-in-command of the intercepted aircraft is the Series 1 signal in 4.1.4. If repeated attempts to attract attention by use of this signal are unsuccessful, other methods of signalling may be used for this purpose, including as a last resort the visual effect of the reheat/afterburner, provided that no hazard, including hazardous effects of wake turbulence, is created for the intercepted aircraft.

4.1.2.8 During daytime, the use of smoke-producing devices, such as those used during aerobatic displays, producing smoke of a vivid colour may have the desired effect. During daytime as well as at night, the use of high-power strobe lights, whenever installed on the intercepting aircraft for collision avoidance purposes, would also be of assistance.

4.1.2.9 As a very last resort, and if directed carefully, the use of reheat/afterburner may achieve the desired result. This method is clearly most effective at night but can be both disturbing and noisy for the intercepted aircraft, especially if used during Phase II, i.e. well within 300 metres. Reheat/afterburner must therefore be used with great caution.

4.1.2.10 The use of tracer bullets to attract attention is hazardous and must be strongly discouraged so that the lives of persons on board and the safety of the aircraft will not be endangered. The potential hazards to persons and property on the ground are additional factors that must be taken into account.

4.1.2.11 In view of the practical difficulty of attracting the attention of an intercepted aircraft by visual means, training programmes for interceptor crews should include practice interceptions of military transport aircraft, with the object of practicing the most visible and attention-getting positioning of the intercepting aircraft. Under no circumstances should practice interception of civil aircraft be undertaken (see 2.5 c)).

Guidance of an intercepted aircraft

4.1.2.12 Navigational guidance and related information should be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established.

4.1.2.13 When navigational guidance is given to an intercepted aircraft, care must be taken that the aircraft is not led into conditions where the visibility may be reduced below that required to maintain flight in visual meteorological conditions and that the manoeuvres demanded of the intercepted aircraft do not add to already existing hazards in the event that the operating efficiency of the aircraft is impaired.

4.1.2.14 It must be realized that failure to comply with instructions given does not necessarily indicate unfriendly intentions. In fact, there are many reasons why an intercepted civil aircraft may not be able to comply with the instructions given by an intercepting aircraft visually or by radio. The most obvious of these are that the aircraft is in a state of emergency due to aircraft malfunctioning or hijacking. In the latter case the intercept control unit and/or the appropriate ATS unit may be able to confirm the situation by observing that the aircraft is squawking the emergency SSR Code 7700 or the hijacked code 7500. The intercepted aircraft may also have flight technical problems which are not in the nature of an emergency but which, in the opinion of the pilot-in-command, would make it hazardous to comply with the instructions given. An example of such problems is inadequate fuel to proceed to a designated aerodrome.

4.1.2.15 It must also be realized that failure by the intercepted aircraft to comply with instructions given may be due to general confusion as to the reasons for the interception, inability to interpret visual signals correctly, linguistic misunderstanding of radio messages and, in rare cases, hypoxia.

4.1.2.16 In the event that an intercepted aircraft fails to respond to repeated attempts to convey instructions by visual signals or radiotelephony, the intercepting aircraft should continue to observe the intercepted aircraft until it lands or leaves the restricted or prohibited airspace. A full report on the incident should then be submitted to the appropriate authority and forwarded by that authority to the State of registry for action (see 2.10, Article 3 bis).

Note.— Possibility of manoeuvres by the intercepted aircraft in response to resolution advisories provided by an airborne collision avoidance system (ACAS) also needs to be taken into account. If the intercepted aircraft is so equipped, the ACAS may perceive the interceptor as a collision threat and thus provide a resolution advisory for avoidance. Therefore, care must be taken that such an avoidance manoeuvre(s), if undertaken before the pilot-in-command of the intercepted aircraft is aware of the interception, is not misinterpreted as an indication of unfriendly intentions. This situation can be avoided if the interceptor suppresses the transmission of pressure-altitude information in its SSR transponder replies within a range of at least 20 NM (approximately 30 seconds) of the aircraft being intercepted. This prevents the ACAS in the intercepted aircraft from using resolution advisories in respect of the interceptor, while the ACAS traffic advisory information will remain available.

Provision of information for landing

4.1.2.17 In the exceptional case where an intercepted civil aircraft is required to land in the territory overflown, care must also be taken that:

- a) the designated aerodrome is suitable for the safe landing of the aircraft type concerned, especially if the aerodrome is not normally used for civil air transport operations;
- b) the surrounding terrain is suitable for circling, approach and missed approach manoeuvres;
- c) the intercepted aircraft has sufficient fuel remaining to reach the aerodrome;
- d) if the intercepted aircraft is a civil transport aircraft, the designated aerodrome has a runway with a length equivalent to at least 2 500 m at mean sea level and a bearing strength sufficient to support the aircraft; and

e) whenever possible, the designated aerodrome is one that is described in detail in the relevant aeronautical information publication.

4.1.2.18 When requiring a civil aircraft to land at an unfamiliar aerodrome, it is essential that sufficient time be allowed it to prepare for a landing, bearing in mind that only the pilot-in-command of the civil aircraft can judge the safety of the landing operation in relation to runway length and aircraft mass at the time.

4.1.2.19 It is particularly important that all information necessary to facilitate a safe approach and landing be given to the intercepted aircraft by radiotelephony.

4.1.2.20 Ideally, the intercepted aircraft should be requested to obtain the necessary information and ATC clearance for flight to the designated aerodrome from the appropriate ATS unit and, in due course, to establish direct contact with the aerodrome control tower at the designated aerodrome either on one of the normal control tower frequencies or on 121.5 MHz. If such direct communication is not possible, the necessary information to enable the intercepted aircraft to make a safe landing should be relayed through any other unit or any other aircraft which may be in contact with the intercepted aircraft. If this fails, the information should be transmitted blind on 121.5 MHz and any other available frequency on which the aircraft might be listening, including available voice channel(s) on local approach and landing aids such as VOR and ILS.

4.1.2.21 If all else fails, the pilot of the intercepting aircraft is expected to use discretion with regard to the use of hand signals and/or Morse signals to supplement the Series 3 visual signal in 4.1.4.2.

4.1.3 Action by intercepted aircraft

4.1.3.1 The pilot-in-command of a civil aircraft, when intercepted, shall comply with the Standards in 4.1.3.2 and 4.1.3.5, interpreting and responding to visual signals as specified in 4.1.4.

Note.— See also Annex 2, 2.1.1 and 3.4.

4.1.3.2 An aircraft which is intercepted by another aircraft shall immediately:

- a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications in 4.1.4;
- b) notify, if possible, the appropriate air traffic services unit;
- c) attempt to establish radiocommunication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHz because some military aircraft may not have a VHF capability; and
- d) if equipped with SSR transponder, select Mode A Code 7700, unless otherwise instructed by the appropriate air traffic services unit.

4.1.3.3 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

4.1.3.4 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.

Radiocommunication during interception

4.1.3.5 If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in the following table and transmitting each phrase twice:

<i>Phrases for use by INTERCEPTING aircraft</i>			<i>Phrases for use by INTERCEPTED aircraft</i>		
<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>	<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign?	CALL SIGN (call sign) ²	<u>KOL</u> SA-IN (call sign)	My call sign is (call sign)
FOLLOW	<u>FOL</u> -LO	Follow me	WILCO	<u>VILL</u> -KO	Understood Will comply
DESCEND	DEE- <u>SEND</u>	Descend for landing	CAN NOT ⁴	<u>KANN</u> NOTT	Unable to comply
YOU LAND	<u>YOU LAAND</u>	Land at this aerodrome	REPEAT ⁴	REE- <u>PEET</u>	Repeat your instruction
PROCEED	PRO- <u>SEED</u>	You may proceed	AM LOST	<u>AM LOSST</u>	Position unknown
			MAYDAY	MAYDAY	I am in distress
			HIJACK ³	<u>HI-JACK</u>	I have been hijacked
			LAND (place name)	LAAND (place name)	I request to land at (place name)
			DESCEND	DEE- <u>SEND</u>	I require descent

- In the second column, syllables to be emphasized are underlined.*
- The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.*
- Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK".*
- The phrases CAN NOT and REPEAT are used in this particular context, rather than the normal phrases UNABLE and SAY AGAIN, in order to facilitate understanding.*

4.1.4 Air-to-air visual signals

Application

4.1.4.1 Recognizing that it is essential for the safety of flight that any visual signals employed in the event of an interception which should be undertaken only as a last resort be correctly employed and understood by civil and military aircraft throughout the world, the Council of the International Civil Aviation Organization, when adopting the visual signals 4.1.4.2 and 4.1.4.3, urged Contracting States to ensure that they be strictly adhered to by their State aircraft.

Signals for use in the event of interception

4.1.4.2 Signals initiated by intercepting aircraft and responses by intercepted aircraft:

Series	INTERCEPTING aircraft signals	Meaning	INTERCEPTED aircraft responds	Meaning
1	<p>DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left, (or to the right in the case of a helicopter) on the desired heading.</p> <p><i>Note 1.— Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.</i></p> <p><i>Note 2.— If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock the aircraft each time it passes the intercepted aircraft.</i></p>	You have been intercepted. Follow me.	<p>DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following.</p> <p><i>Note.— Additional action required to be taken by intercepted aircraft is prescribed in Annex 2, Chapter 3, 3.8.</i></p>	Understood, will comply.
2	DAY or NIGHT — An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	You may proceed.	DAY or NIGHT — Rocking the aircraft.	Understood, will comply.
3	DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.	Land at this aerodrome.	DAY or NIGHT — Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.	Understood, will comply.

4.1.4.3 Signals initiated by intercepted aircraft and responses by intercepting aircraft:

Series	INTERCEPTED aircraft signals	Meaning	INTERCEPTING aircraft responds	Meaning
4	DAY or NIGHT — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	<p>DAY or NIGHT — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft.</p> <p>If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.</p>	Understood, follow me. Understood, you may proceed.
5	DAY or NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT — Irregular flashing of all available lights.	In distress.	DAY or NIGHT — Use Series 2 signals prescribed for intercepting aircraft.	Understood.

4.1.5 Air-ground communications

Note.— See also 4.1.3.5 and 4.1.6.1.

Use of the emergency channel

4.1.5.1 The emergency channel (121.5 MHz) shall be used only for genuine emergency purposes, as broadly outlined in the following:

- a) to provide a clear channel between aircraft in distress or emergency and a ground station when the normal channels are being utilized for other aircraft;
- b) to provide a VHF communication channel between aircraft and aerodromes, not normally used by international air services, in case of an emergency condition arising;

...

- f) to provide a common VHF channel for communication between civil aircraft and intercepting aircraft or intercept control units and between civil or intercepting aircraft and air traffic services units in the event of interception of the civil aircraft.

...

4.1.5.2 The frequency of 121.5 MHz shall be available to intercept control units where considered necessary for the purpose specified in 4.1.5.1 f).

4.1.5.3 Aircraft on long over-water flights, or on flights over designated areas over which the carriage of survival radio equipment or emergency location beacon — aircraft (ELBA) is required, shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.

4.1.5.3.1 Aircraft shall continuously guard the VHF emergency frequency 121.5 MHz in areas or over routes where the possibility of interception of aircraft or other hazardous situations exist, and a requirement has been established by the appropriate authority.

4.1.5.3.2 Aircraft on flights other than those specified in 4.1.5.3 and 4.1.5.3.1 should guard the emergency frequency 121.5 MHz to the extent possible.

Communication equipment for international commercial aeroplanes

4.1.5.4 An aircraft shall be provided with radiocommunication equipment capable of:

- a) conducting two-way communication for aerodrome control purposes;
- b) receiving meteorological information at any time during flight;
- c) conducting two-way communication at any time during flight with at least one aeronautical station and with such other aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

Note.— The requirements of 4.1.5.4 are considered fulfilled if the ability to conduct the communications specified therein is established during radio propagation conditions which are normal for the route.

4.1.5.4.1 The radiocommunication equipment required in accordance with 4.1.5.4 shall provide for communications on the aeronautical emergency frequency 121.5 MHz.

Communication equipment for international general aviation aircraft

4.1.5.5 An aeroplane to be operated in accordance with the instrument flight rules or at night shall be provided with radiocommunication equipment. Such equipment shall be capable of conducting two-way communication with those aeronautical stations and on those frequencies prescribed by the appropriate authority.

Note.— *The requirements of 4.1.5.5 are considered fulfilled if the ability to conduct the communications specified therein is established during radio propagation conditions which are normal for the route.*

4.1.5.5.1 When compliance with 4.1.5.5 requires that more than one communication equipment unit be provided, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

4.1.5.6 An aircraft to be operated in accordance with the visual flight rules, but as a controlled flight, shall, unless exempted by the appropriate authority, be provided with radiocommunication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

4.1.5.6.1 An aircraft to be operated on a flight to which the provisions of Annex 6, Part II, 6.3.3 or 6.4 or Part III, Section III, 4.3 or 4.4 apply shall, unless exempted by the appropriate authority, be provided with radio-communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies as may be prescribed by the appropriate authority.

4.1.5.7 The radiocommunication equipment required in accordance with 4.1.5.5 to 4.1.5.6.1 shall provide for communication on the aeronautical emergency frequency 121.5 MHz.

Communication equipment for intercept control units and intercepting aircraft

4.1.5.8 ... it is essential that Contracting States take steps to ensure that:

...

- f) intercept control units and intercepting aircraft be provided with radiotelephony equipment compatible with the technical specifications of Annex 10, Volume I so as to enable them to communicate with intercepted aircraft on the emergency frequency 121.5 MHz;

Communication equipment for ATS and other ground units

4.1.5.9 The frequency of 121.5 MHz shall be provided at:

- a) all area control centres and flight information centres; and
- b) aerodrome control towers and approach control offices serving international aerodromes and international alternate aerodromes; and
- c) any additional location designated by the appropriate ATS authority,

where the provision of that frequency is considered necessary to ensure immediate reception of distress calls or to serve the purposes specified in 4.1.5.1.

Note.— Where two or more of the above facilities are collocated, provision of 121.5 MHz at one would meet the requirement.

4.1.5.10 The frequency of 121.5 MHz should be provided at any additional locations where such provision is considered necessary to ensure immediate reception of distress calls or to serve the purposes specified in 4.1.5.1.

4.1.5.10.1 All military intercept control units should be equipped with the frequency of 121.5 MHz.

4.1.5.11 The emergency channel shall be guarded continuously during the hours of service of the units at which it is installed.

4.1.5.12 The emergency channel shall be guarded on a single channel simplex operation basis.

4.1.6 Action by intercept control units

Radiocommunication between the intercept control unit or the intercepting aircraft and the intercepted aircraft

4.1.6.1 When an interception is being made, the intercept control unit and the intercepting aircraft should:

- a) first attempt to establish two-way communication with the intercepted aircraft in a common language on the emergency frequency 121.5 MHz, using the call signs “INTERCEPT CONTROL”, “INTERCEPTOR (call sign)” and “INTERCEPTED AIRCRAFT” respectively; and
- b) failing this, attempt to establish two-way communication with the intercepted aircraft on such other frequency or frequencies as may have been prescribed by the appropriate ATS authority, or to establish contact through the appropriate ATS unit(s).

Co-ordination between intercept control units and air traffic services units

4.1.6.2 It is essential that close co-ordination be maintained between an intercept control unit and the appropriate air traffic services unit during all phases of an interception of an aircraft which is, or might be, a civil aircraft, in order that the air traffic services unit is kept fully informed of the developments and of the action required of the intercepted aircraft.

4.1.7 Action by ATS units in the event of interception

4.1.7.1 As soon as an air traffic services unit learns that an aircraft is being intercepted in its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:

- a) attempt to establish two-way communication with the intercepted aircraft on any available frequency, including the emergency frequency 121.5 MHz, unless such communication already exists;
- b) inform the pilot of the intercepted aircraft of the interception;
- c) establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft;
- d) relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary;

- e) in close co-ordination with the intercept control unit take all necessary steps to ensure the safety of the intercepted aircraft; and
- f) inform ATS units serving adjacent flight information regions if it appears that the aircraft has strayed from such adjacent flight information regions.

4.1.7.2 As soon as an air traffic services unit learns that an intercepted aircraft is required by the State authorities concerned to make a landing in the territory overflown, it shall take such of the following steps as are appropriate in the circumstances:

- a) inform the pilot of the intercepted aircraft of the requirement to make a landing at the designated aerodrome;
- b) provide the intercepted aircraft with all necessary information regarding flight to and landing at the designated aerodrome, including established instrument approach procedures; and
- c) issue, following co-ordination with the State authorities concerned, any air traffic control clearance or routing instructions necessary for the aircraft to proceed to the designated aerodrome.

4.1.7.3 As soon as an air traffic services unit learns that an aircraft is being intercepted outside its area of responsibility, it shall take such of the following steps as are appropriate in the circumstances:

- a) inform the ATS unit serving the airspace in which the interception is taking place, providing this unit with available information that will assist in identifying the aircraft and requesting it to take action in accordance with 4.1.7.1; and
- b) relay messages between the intercepted aircraft and the appropriate ATS unit, the intercept control unit or the intercepting aircraft.

4.2 AVAILABILITY OF INFORMATION

4.2.1 Promulgation of information in aeronautical information publications (AIP)

4.2.1.1 Annex 15 requires that a complete statement of procedures and visual signals to be used in the event of interception shall be included in the RAC part of each AIP.

4.2.1.2 A sample statement reflecting the current ICAO provisions without change is contained in the *Aeronautical Information Services Manual* (Doc 8126) and is reproduced at Appendix C for convenience.

4.2.1.3 It is particularly important to indicate clearly any national differences from the ICAO provisions, and/or any additional procedures or signals to be used.

4.2.1.4 In the event that a State has determined that interceptions will not be undertaken, a statement to that effect in the AIP will be sufficient.

4.2.1.5 Where a State has designated selected aerodromes for use in the event that intercepted aircraft are required to land in the territory overflown, it is important that complete information regarding these aerodromes be included in the AIP and specifically mentioned in the section dealing with interception.

4.2.2 Carriage of information on board aircraft

4.2.2.1 Annex 6, Part I and Part III, Section II prescribe that, for international commercial air transport operations, an operations manual, which may be issued in separate parts corresponding to specific aspects of operations, shall contain at least:

- a) procedures, as prescribed in 4.1.3 above for pilots-in-command of intercepted aircraft; and
- b) visual signals for use by intercepting and intercepted aircraft, as contained in 4.1.4 above.

4.2.2.2 Annex 6, Part II and Part III, Section III, applicable to international general aviation operations, specify that all aircraft on all flights shall carry the information identified in 4.2.2.1 a) and b) above.

4.2.2.3 Examples of flash cards which may be used by pilots are shown at Appendix D.

4.2.2.4 For flights conducted in the vicinity of areas where there is a risk of interception, available illustrations of the markings of interceptor aircraft used by the State(s) concerned should be carried on board the civil aircraft.

4.2.2.5 For flights conducted in the vicinity of restricted or prohibited areas or other areas where unplanned incursion may result in an interception, and/or a requirement to land in the territory overflown, appropriate aerodrome information and approach charts for aerodromes likely to be used should be carried on board the aircraft.

4.2.2.6 Interceptor pilots should be provided with illustrations of nationality and registration markings which appear on aircraft belonging to operators conducting regular flights in, or in the immediate vicinity of, the territory of their State. Operators should provide information on the various markings and insignias on State aircraft used for interception for use by civil flight crews.

APPENDIX A

ORIGIN OF MATERIAL REPRODUCED FROM ICAO DOCUMENTS

<i>Paragraph or note identified by the symbol “#”</i>	<i>Document</i>	<i>Source reference</i>	<i>Status</i>
1.1.1	Annex 2	3.8, Note	Note
1.1.2	Annex 11	2.21.1	Note
	PANS-RAC	Part III, 18	Note
2.1	Convention	Article 3 (a)	Convention
2.2	Convention	Article 3 (b)	Convention
2.3	Annex 2	3.8.1	Standard
2.4	Annex 2	3.8.1, Note	Note
2.5	Annex 2	Appendix 2, 1.1	Standard
2.6	Annex 2	Appendix 2, 1.2	Standard
2.7	Annex 2	Appendix 2, 1.3	Standard
2.8	Annex 2	Attachment A, 2.2	Special recommendation
2.9	Annex 2	Attachment A, 2.3	Special recommendation
3.1.2.1	Annex 2	3.3.1.2.1	Standard
3.1.2.2	Annex 2	3.3.1.2.1, Note	Note
3.1.2.4	Annex 11	2.15.3.1	Standard
3.1.3.1	Annex 2	3.6.5.1	Standard
3.1.3.3	Annex 10, Vol. II	5.2.2.1.1.1	Standard
3.1.3.4	Annex 10, Vol. II	5.2.2.1.1.2	Standard
3.1.3.4.1	Annex 10, Vol. II	5.2.2.1.1.3	Recommended Practice
3.1.3.5	Annex 2	3.6.3	Standard
3.1.3.5	Annex 2	3.6.3, Note	Note
3.1.3.7	Annex 2	4.8	Standard
3.1.3.8	Annex 2	5.3.2	Standard
3.1.3.9	Annex 2	5.3.3	Standard
3.1.3.10	Annex 2	5.3.3, Note	Note
3.1.4.1	PANS-RAC	Part VII, 1.1	PANS
3.1.4.2	PANS-RAC	Part VII, 1.2	PANS
3.1.4.3	PANS-RAC	Part VII, 1.3	PANS
3.1.4.4	PANS-RAC	Part VII, 1.4	PANS

<i>Paragraph or note identified by the symbol “#”</i>	<i>Document</i>	<i>Source reference</i>	<i>Status</i>
3.1.4.5	PANS-RAC	Part VII, 2.1	PANS
3.1.4.6	PANS-RAC	Part VII, 3.2.1	PANS
3.1.4.7	PANS-RAC	Part VII, 3.2.2	PANS
3.1.4.8	PANS-RAC	Part VII, 3.2.3	PANS
3.1.4.8.1	PANS-RAC	Part VII, 3.2.3.1	PANS
3.1.4.8.2	PANS-RAC	Part VII, 3.2.3.2	PANS
3.1.4.9	PANS-RAC	Part VII, 3.2.4	PANS
3.1.4.10	PANS-RAC	Part VII, 3.2.5	PANS
3.1.4.11	PANS-RAC	Part VII, 3.2.6	PANS
3.1.4.12	PANS-RAC	Part VII, 3.2.7	PANS
3.1.4.13	PANS-RAC	Part VII, 3.2.8	PANS
3.1.4.13.1	PANS-RAC	Part X, 2.7.2	PANS
3.1.4.14	PANS-RAC	Part VII, 3.2.9	PANS
3.1.4.15	PANS-RAC	Part VII, 3.2.10	PANS
3.1.4.16	PANS-RAC	Part VII, 3.2.11	PANS
3.1.4.17	PANS-RAC	Part VII, 3.2.12	PANS
3.1.4.18	PANS-RAC	Part VII, 3.2.13	PANS
3.1.4.19	PANS-RAC	Part VII, 3.2.14	PANS
3.1.5.1	PANS-RAC	Part VIII, 4.2.2.2.1	PANS
3.1.5.2	PANS-RAC	Part VIII, 4.2.2.2.2	PANS
3.1.5.3	PANS-RAC	Part VIII, 4.2.2.2.3	PANS
3.1.5.4	PANS-RAC	Part VIII, 4.2.2.2.4	PANS
3.1.5.5	PANS-RAC	Part VIII, 4.2.2.2.5	PANS
3.1.5.6	PANS-RAC	Part VIII, 4.2.3.2.1	PANS
3.1.5.7	PANS-RAC	Part VIII, 4.2.3.2.2	PANS
3.1.5.8	PANS-RAC	Part VIII, 4.2.3.2.3	PANS
3.1.5.9	PANS-RAC	Part VIII, 4.2.3.2.4	PANS
3.1.5.10	PANS-RAC	Part VIII, 4.2.3.2.5	PANS
3.1.5.11	PANS-RAC	Part VIII, 4.2.2.6.1	PANS
3.1.5.12	PANS-RAC	Part VIII, 4.2.2.6.2	PANS
3.1.5.14	PANS-RAC	Part VIII, 4.2.3.3.1	PANS
3.1.5.15	PANS-RAC	Part VIII, 4.2.3.3.2	PANS
3.1.5.16	PANS-RAC	Part VIII, 4.2.3.3.3	PANS
3.1.6, Note	Annex 11	6.2, Note	Note
3.1.6.1	Annex 11	6.2.1.1.1	Standard
3.1.6.2	Annex 11	6.2.1.1.2	Standard
3.1.6.3	Annex 11	6.2.1.3.1	Standard
3.1.6.4	Annex 11	6.2.1.3.3	Recommended Practice
3.1.6.5	Annex 11	6.2.1.3.4	Recommended Practice
3.1.6.6	Annex 11	6.2.1.3.7	Standard
3.1.6.7	Annex 11	6.2.2.1	Standard
3.1.6.7.1	Annex 11	6.2.2.1.1	Standard
3.1.6.7.2	Annex 11	6.2.2.1.2	Standard
3.1.6.7.2.1	Annex 11	6.2.2.1.3	Standard
3.1.6.7.2.2	Annex 11	6.2.2.1.4	Recommended Practice
3.1.6.8	Annex 11	6.2.2.2	Recommended Practice
3.1.6.9	Annex 11	6.2.2.3	Recommended Practice

<i>Paragraph or note identified by the symbol “#”</i>	<i>Document</i>	<i>Source reference</i>	<i>Status</i>
3.1.6.10	Annex 11	6.2.2.4	Recommended Practice
3.1.6.11	Annex 11	6.2.2.5	Recommended Practice
3.1.6.12	Annex 11	6.2.3	Recommended Practice
3.1.7.1	Annex 11	2.15.1	Recommended Practice
3.1.7.2	Annex 11	2.15.2	Recommended Practice
3.1.7.3	Annex 11	2.15.3	Recommended Practice
3.1.7.3.1	Annex 11	2.15.3.1	Recommended Practice
3.1.7.3.2	Annex 11	2.15.3.2	Recommended Practice
3.1.8, Note	Annex 11	6.2, Note	Note
3.1.8.1	Annex 11	6.2.1.2.1	Standard
3.1.8.2	Annex 11	6.2.1.2.2	Standard
3.1.8.3	Annex 11	6.2.1.2.3	Standard
3.1.8.4	Annex 11	6.2.1.3.1	Standard
3.1.8.5	Annex 11	6.2.1.3.3	Recommended Practice
3.1.8.6	Annex 11	6.2.1.3.4	Recommended Practice
3.1.8.7	Annex 11	6.2.1.3.5	Standard
3.1.8.8	Annex 11	6.2.1.3.7	Standard
3.1.8.9	Annex 11	6.2.3	Recommended Practice
3.1.9.1	Annex 11 PANS-RAC	2.21.1.2 Part III, 18.2	Standard PANS
3.1.9.2	Annex 11 PANS-RAC	2.21.1.2.1 Part III, 18.2.1	Standard PANS
3.1.10.1	PANS-RAC	Part X, 1.5.1.3	PANS
3.1.10.2	PANS-RAC	Part X, 1.5.1.3.1	PANS
3.1.10.3	PANS-RAC	Part X, 1.5.1.3.2	PANS
3.1.10.4	PANS-RAC	Part X, 1.5.1.4	PANS
3.1.10.5	PANS-RAC	Part X, 1.5.1.4.1	PANS
3.1.10.6	PANS-RAC	Part X, 1.5.2.1	PANS
3.1.10.7	PANS-RAC	Part X, 1.5.2.2	PANS
3.1.10.9	PANS-RAC	Part X, 1.4.1	PANS
3.1.10.9.1	PANS-RAC	Part X, 1.4.1.1	PANS
3.1.10.9.2	PANS-RAC	Part X, 1.4.1.2	PANS
3.1.10.9.3	PANS-RAC	Part X, 1.4.1.3	PANS
3.1.10.10	PANS-RAC	Part X, 1.4.2	PANS
3.1.10.11	PANS-RAC	Part X, 1.4.3	PANS
3.1.10.12	Annex 10, Vol. I	Part I, 2.5.4.2.1	Standard
3.1.10.13	Annex 10, Vol. I	Part I, 2.5.4.2.2	Standard
3.1.10.14	Annex 10, Vol. I	Part I, 2.5.4.2.3	Standard
3.1.10.15	Annex 10, Vol. I	Part I, 2.5.4.3	Standard
3.1.10.16	Annex 10, Vol. I	Part I, 2.5.4.4	Recommended Practice

<i>Paragraph or note identified by the symbol “#”</i>	<i>Document</i>	<i>Source reference</i>	<i>Status</i>
3.1.10.17	Annex 10, Vol. I	Part I, 2.5.4.5	Standard
3.1.10.18	PANS-OPS	Vol. I, Part VIII, Introductory Note	PANS
3.1.10.19	PANS-OPS	Vol. I, Part VIII, 1.1.1	PANS
3.1.10.21	PANS-OPS	Vol. I, Part VIII, 1.1.2	PANS
3.1.10.22	PANS-OPS	Vol. I, Part VIII, 1.1.3	PANS
3.1.10.23	PANS-OPS	Vol. I, Part VIII, 1.2	PANS
3.1.10.24	PANS-OPS	Vol. I, Part VIII, 1.1.4	PANS
3.1.10.25	PANS-OPS	Vol. I, Part VIII, 1.1.5	PANS
3.1.10.26	PANS-OPS	Vol. I, Part VIII, 1.1.6	PANS
3.1.10.27	PANS-OPS	Vol. I, Part VIII, 1.1.7	PANS
3.1.10.29.1	PANS-OPS	Vol. I, Part VIII, 1.3.1	PANS
3.1.10.29.2	PANS-OPS	Vol. I, Part VIII, 1.3.2	PANS
3.1.10.30.1	PANS-OPS	Vol. I, Part VIII, 1.4	PANS
3.1.10.31.1	PANS-OPS	Vol. I, Part VIII, 1.5.1	PANS
3.1.10.31.2	PANS-OPS	Vol. I, Part VIII, 1.5.2	PANS
3.2.2.1	Annex 2	5.1.1	Standard
3.2.2.2	Annex 6	Part I, 7.2.1; Part III, Section II, 5.2.1	Standard
3.2.2.3	Annex 6	Part II, 7.2.1; Part III, Section III, 5.2.1	Standard
3.2.3.1	Annex 2	3.6.2.1.1	Standard
3.2.3.2	Annex 2	3.6.2.1.3	Standard
3.2.3.3	Annex 2	3.6.2.2	Standard
3.2.4.1	Annex 2	3.1.9	Standard
3.2.5.1	Annex 11	2.21.1.1	Standard
	PANS-RAC	Part III, 18.1	PANS
3.2.5.1.1	Annex 11	2.21.1.1.1	Standard
	PANS-RAC	Part III, 18.1.1	PANS
3.2.5.1.2	Annex 11	2.21.1.1.2	Standard
	PANS-RAC	Part III, 18.1.2	PANS
3.2.5.2	PANS-RAC	Part X, 2.1.1	PANS
3.2.5.3	PANS-RAC	Part X, 2.6.1	PANS
3.2.5.4	PANS-RAC	Part X, 2.6.2	PANS
3.2.5.5	PANS-RAC	Part X, 2.6.3	PANS
3.2.5.6	PANS-RAC	Part X, 5.1.1	PANS
3.2.6.1	Annex 11	2.15.3.2	Standard
3.2.6.3	Annex 2	Appendix 1, 3	Standard
3.3.1.4	Annex 15	Appendix 1, 5.5	Standard
3.3.2.1	Annex 15	5.1.1	Standard
3.3.2.2	Annex 15	5.1.1.1	Standard

*Paragraph or
note identified by
the symbol “#”*

<i>Document</i>	<i>Source reference</i>	<i>Status</i>
Annex 15	Appendix 3, Part 1, 1, 1.1	Standard
Annex 15	Appendix 3, Part 2, 2, 2.5	Standard
Annex 2	Attachment A, 2.3	Special recommendation
Annex 2	Attachment A, 3.1	Special recommendation
Annex 2	Attachment A, 3.2	Special recommendation
Annex 2	Attachment A, 3.3.1	Special recommendation
Annex 2	Attachment A, 3.4	Special recommendation
Annex 2	Attachment A, 4.1	Special recommendation
Annex 2	Attachment A, 4.2	Special recommendation
Annex 2	Attachment A, 4.3	Special recommendation
Annex 2	Attachment A, 4.4	Special recommendation
Annex 2	Attachment A, 4.5	Special recommendation
Annex 2	3.8.2	Standard
Annex 2	Appendix 2, 2.1	Standard
Annex 2	Appendix 2, 2.2	Standard
Annex 2	Appendix 2, 2.3	Standard
Annex 2	Appendix 2, 3.1	Standard
Annex 2	3.8.1, Note	Note
Annex 2	Appendix 1, 2.1	Standard
Annex 2	Appendix 1, 2.2	Standard
Annex 10, Vol. I	Part II, 4.1.3.1.1	Standard
Annex 10, Vol. I	Part II, 4.1.3.1.3	Standard
Annex 10, Vol. II	5.2.2.1.1.1	Standard
Annex 10, Vol. II	5.2.2.1.1.2	Standard
Annex 10, Vol. II	5.2.2.1.1.3	Recommended Practice
Annex 6	Part I, 7.1.1; Part III, Section II, 5.1.1	Standard
Annex 6	Part I, 7.1.2; Part III, Section II, 5.1.2	Standard
Annex 6	Part II, 7.1.1; Part III, Section III, 5.1.1	Standard
Annex 6	Part II, 7.1.1.1; Part III, Section III, 5.1.2	Standard
Annex 6	Part II, 7.1.2; Part III, Section III, 5.1.3	Standard
Annex 6	Part II, 7.1.2.1; Part III, Section III, 5.1.4	Standard

<i>Paragraph or note identified by the symbol “#”</i>	<i>Document</i>	<i>Source reference</i>	<i>Status</i>
4.1.5.7	Annex 6	Part II, 7.1.3; Part III, Section III, 5.1.5	Standard Recommended Practice
4.1.5.8	Annex 2	Attachment A, 2.3	Special recommendation
4.1.5.9	Annex 10, Vol. I	Part II, 4.1.3.1.2	Standard
4.1.5.11	Annex 10, Vol. I	Part II, 4.1.3.1.4	Standard
4.1.5.12	Annex 10, Vol. I	Part II, 4.1.3.1.5	Standard
4.1.6.1	Annex 2	Attachment A, 7.1	Special recommendation
4.1.6.2	Annex 2	Attachment A, 9	Special recommendation
4.1.7.1	Annex 11 PANS-RAC	2.21.2.1 Part III, 19.1	Standard PANS
4.1.7.3	Annex 11 PANS-RAC	2.21.2.2 Part II, 19.2	Standard PANS

APPENDIX B

MODEL OPERATIONAL LETTER OF AGREEMENT CONCLUDED BETWEEN (ATS UNIT) AND (MILITARY UNIT)

1. INTRODUCTION

1.1 Effective date

1.1.1 This Letter of Agreement shall become effective on _____ .

1.2 Objective

1.2.1 The objective of this Letter of Agreement is to establish co-ordination procedures for the exchange of information between (ATS unit) and (military unit), relating to flights by civil aircraft operating on ATS routes in the area specified at Appendix 1. The object of this Letter of Agreement is to achieve identification of aircraft which have deviated from their assigned flight plan, thus eliminating or reducing the need to have recourse to interception and, consequently, the inherent risks that this might entail.

1.3 Scope

1.3.1 The procedures contained in this Letter of Agreement supplement or refine the provisions prescribed in ICAO Doc 9433 with respect to interception of civil aircraft and shall be applicable to the flights specified in the previous paragraph.

2. CO-ORDINATION PROCEDURES

2.1 Exchange of information

2.1.1 From (military unit) to (ATS unit)

2.1.1.1 (The military unit) shall notify (the ATS unit) if an unidentified aircraft is observed to approach or to have penetrated the area(s) contained in Appendix 1 to this Letter of Agreement.

2.1.2 From (ATS unit) to (military unit)

2.1.2.1 The information to be supplied by (the ATS unit) to (the military unit) with respect to flights on the ATS route(s) associated with the area(s) specified in Appendix 1 to this Letter of Agreement shall include:

- a) identity of the aircraft;
- b) assigned SSR code (if applicable);
- c) flight level; and
- d) estimated time of passing a mutually agreed upon point.

2.1.2.2 Should (the ATS unit) become aware of a strayed aircraft:

- a) if the aircraft's position is not known, it shall notify (the military unit), providing pertinent flight plan and other data concerning the strayed aircraft; and
- b) when the aircraft's position is established, it shall provide (the military unit), as necessary, with relevant information concerning the strayed aircraft and any advice/instructions given to it.

2.1.2.3 Should (the ATS unit) become aware of unidentified aircraft in, or in the vicinity of the critical area(s) specified in Appendix 1 to this Letter of Agreement, it shall notify (the military unit), as well as when the identity of the aircraft has been established.

2.1.2.4 Should (the ATS unit) become aware that an aircraft is being intercepted:

- a) within its area of responsibility:
 - 1) it shall establish contact with (the intercept control unit) maintaining two-way communication with the intercepted aircraft and shall provide all available information concerning the aircraft; and
 - 2) it shall retransmit, as necessary, messages between the intercepting aircraft or (the intercept control unit) and the intercepted aircraft; and
- b) outside its area of responsibility, it shall inform, as necessary, (the military unit), providing it with all available information concerning the aircraft and the co-ordination measures carried out.

3. COMMUNICATION FACILITIES

3.1 Communications between (ATS unit) and (military unit)

3.1.1 To allow effective compliance with co-ordination procedures, the units involved shall use or shall install the communications facilities detailed in Appendix 2 to this Letter of Agreement. These facilities shall permit the establishment, within 15 seconds, of communications by direct speech arranged for conference communications, with automatic recording.

3.2 Emergency channel (121.5 MHz)

3.2.1 For communications between civil and/or intercepting aircraft and (the ATS unit) and (intercept control unit) the 121.5 MHz frequency shall be used.

4. REVISIONS

4.1 This Letter of Agreement shall be revised when the procedures contained herein or in its appendices are affected by amendments to ICAO Standards, supplementary procedures and regional plans, or when new facilities are commissioned by the units involved. In the case of new facilities and/or the modification of existing facilities, it is the responsibility of the unit originating these to initiate the action; in all other cases, the unit concerned shall propose the pertinent amendment.

4.2 If the amendment affects only the information given in the appendices, the new revised appendices shall be incorporated into this Letter of Agreement to be effective on a mutually agreed date.

5. TRANSITION PROVISIONS

From the effective date shown in 1.1 above, the co-ordination procedures relating to exchange of information described in this Letter of Agreement supersede any other procedure applied by common agreement between (the ATS unit) and (the military unit).

**MODEL OPERATIONAL LETTER OF AGREEMENT
CONCLUDED BETWEEN (ATS UNIT) AND (MILITARY UNIT)**

Appendix 1

1. Specific airspace or areas covered are:

2. ATS routes covered are:

Appendix 2

1. Required communication facilities:
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APPENDIX C

SAMPLE STATEMENT OF PROCEDURES AND VISUAL SIGNALS FOR INCLUSION IN AERONAUTICAL INFORMATION PUBLICATIONS

AIP

RAC 8-1

INTERCEPTION PROCEDURES

The following procedures and visual signals apply over the territory and territorial waters of in the event of interception* of an aircraft.

1. An aircraft which is intercepted by another aircraft shall immediately:

- a) follow the instructions given by the intercepting aircraft, interpreting and responding to visual signals in accordance with the specifications on pages RAC 8-2 and RAC 8-3;
- b) notify, if possible, the appropriate air traffic services unit;
- c) attempt to establish radiocommunication with the intercepting aircraft or with the appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHz, giving the identity of the intercepted aircraft and the nature of the flight, and if no contact has been established and if practicable, by repeating this call on the emergency frequency 243 MHz;
- d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit.

2. If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in the following table and transmitting each phrase twice:

Phrase	Pronun- ciation ¹	Meaning
CALL SIGN (call sign ²)	<u>KOL</u> -SA-IN (call sign)	My call sign is (call sign)
WILCO	<u>VILL</u> -KO	Understood. Will comply
CAN NOT	<u>KANN</u> NOTT	Unable to comply
REPEAT	<u>REE</u> - <u>PEET</u>	Repeat your instruction
AM LOST	<u>AM</u> <u>LOSST</u>	Position unknown
MAYDAY	<u>MAYDAY</u>	I am in distress
HIJACK ³	<u>HI</u> - <u>JACK</u>	I have been hijacked
LAND (place name)	LAAND (place name)	I request to land at (place name)
DESCEND	DEE <u>SEND</u>	I require descent

2.1 The following phrases shall be used by the intercepting aircraft and transmitted twice in the circumstances described in the preceding paragraph:

Phrase	Pronun- ciation ¹	Meaning
CALL SIGN	<u>KOL</u> SA-IN	What is your call sign—
FOLLOW	<u>FOL</u> -LO	Follow me
DESCEND	DEE- <u>SEND</u>	Descend for landing
YOU LAND	<u>YOU</u> <u>LAAND</u>	Land at this aerodrome
PROCEED	PRO- <u>SEED</u>	You may proceed

3. If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

4. If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with the radio instructions given by the intercepting aircraft.

5. The visual signals are detailed in the table on pages RAC 8-2 and RAC 8-3.

* The word “interception” in this context does not include intercept and escort service provided, on request, to an aircraft in distress, in accordance with the Search and Rescue Manual (Doc 7333).

- 1. Syllables to be emphasized are underlined.
- 2. The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.
- 3. Circumstances may not always permit, nor make desirable, the use of the phrase “HIJACK”.

Signals initiated by intercepting aircraft and responses by intercepted aircraft

Series	INTERCEPTING Aircraft Signals	Meaning	INTERCEPTED Aircraft Responds	Meaning
1	<p>DAY or NIGHT — Rocking aircraft and flashing navigational lights at irregular intervals (and landing lights in the case of a helicopter) from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft (or to the right if the intercepted aircraft is a helicopter) and, after acknowledgement, a slow level turn, normally to the left, (or to the right in the case of a helicopter) on the desired heading.</p> <p><u>Note 1.</u>— Meteorological conditions or terrain may require the intercepting aircraft to reverse the positions and direction of turn given above in Series 1.</p> <p><u>Note 2.</u>— If the intercepted aircraft is not able to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock the aircraft each time it passes the intercepted aircraft.</p>	You have been intercepted. Follow me.	<p>DAY or NIGHT — Rocking aircraft, flashing navigational lights at irregular intervals and following.</p> <p><u>Note.</u>— Additional action required to be taken by intercepted aircraft is prescribed in Annex 2, Chapter 3, 3.8.</p>	Understood, will comply.
2	<p>DAY or NIGHT — An abrupt break-away manoeuvre from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.</p>	You may proceed.	<p>DAY or NIGHT — Rocking the aircraft.</p>	Understood, will comply.
3	<p>DAY or NIGHT — Lowering landing gear (if fitted), showing steady landing lights and overflying runway in use or, if the intercepted aircraft is a helicopter, overflying the helicopter landing area. In the case of helicopters, the intercepting helicopter makes a landing approach, coming to hover near to the landing area.</p>	Land at this aerodrome.	<p>DAY or NIGHT — Lowering landing gear, (if fitted), showing steady landing lights and following the intercepting aircraft and, if, after overflying the runway in use or helicopter landing area, landing is considered safe, proceeding to land.</p>	Understood, will comply.

(date)

(Name of Publishing Authority)

Editorial Note.— The above text will appear in the updated Aeronautical Information Services Manual (Doc 8126).

Signals initiated by intercepted aircraft and responses by intercepting aircraft

Series	INTERCEPTED Aircraft Signals	Meaning	INTERCEPTING Aircraft Responses	Meaning
4	<u>DAY or NIGHT</u> — Raising landing gear (if fitted) and flashing landing lights while passing over runway in use or helicopter landing area at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) (in the case of a helicopter, at a height exceeding 50 m (170 ft) but not exceeding 100 m (330 ft)) above the aerodrome level, and continuing to circle runway in use or helicopter landing area. If unable to flash landing lights, flash any other lights available.	Aerodrome you have designated is inadequate.	<u>DAY or NIGHT</u> — If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear (if fitted) and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft, the intercepting aircraft uses the Series 2 signals prescribed for intercepting aircraft.	Understood, follow me. Understood, you may proceed.
5	<u>DAY or NIGHT</u> — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	<u>DAY or NIGHT</u> — Use Series 2 signals prescribed for intercepting aircraft.	Understood.
6	<u>DAY or NIGHT</u> — Irregular flashing of all available lights.	In distress.	<u>DAY or NIGHT</u> — Use Series 2 signals prescribed for intercepting aircraft.	Understood.

(Name of Publishing Authority)

(date)

Editorial Note.— The above text will appear in the updated Aeronautical Information Services Manual (Doc 8126).

APPENDIX D

EXAMPLES OF FLASH CARDS FOR USE BY PILOTS IN THE EVENT OF INTERCEPTION

RECTO

INTERCEPTION PROCEDURES			
	<i>Phrase</i>	<i>Pronunciation</i>	<i>Meaning</i>
1. Follow the instructions given by the intercepting aircraft and respond to visual signals given.	WILCO	<u>VILL</u> -KO	Understood Will comply
2. Notify the appropriate air traffic services unit.	CAN NOT	<u>KANN</u> NOT	Unable to comply
3. Attempt to establish radiocommunication with the intercepting aircraft or with the appropriate intercept control unit on frequency 121.5 MHz. If no contact is established, repeat this call on frequency 243 MHz.	REPEAT	REE- <u>PEET</u>	Repeat your instruction
4. If equipped with SSR transponder, select Mode A, Code 7700.	AM LOST	<u>AM LOSST</u>	Position unknown
5. If radio contact with the intercepting aircraft is established but communication in a common language is not possible, attempt to convey essential information and acknowledge instructions by using the following phrases and pronunciations:	MAYDAY	MAYDAY	I am in distress
	HIJACK	<u>HI-JACK</u>	I have been hijacked
	LAND (place name)	LAAND (place name)	I request to land at (place name)
	DESCEND	DEE <u>SEND</u>	I require descent
	6. If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals or by radio, request immediate clarification while continuing to comply with the visual or radio instructions given by the intercepting aircraft.		

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VERSO

INTERCEPTION VISUAL SIGNALS				
No	INTERCEPTING aircraft signals	Meaning	INTERCEPTED aircraft responds	Meaning
1	DAY — Rocking wings from a position in front and normally to the left of intercepted aircraft and, after acknowledgement, a slow level turn, normally to the left, on to the desired heading.	You have been intercepted. Follow me.	DAY — Rocking wings and following.	Understood, will comply.
	NIGHT — Same and, in addition, flashing navigational lights at irregular intervals.		NIGHT — Same and, in addition, flashing navigational lights at irregular intervals.	
2	DAY or NIGHT — An abrupt breakaway consisting of a climbing turn of 90 degrees or more.	You may proceed.	DAY or NIGHT — Rocking wings.	Understood, will comply.
3	DAY — Circling aerodrome, lowering landing gear and overflying runway in direction of landing.	Land at this aerodrome.	DAY — Lowering landing gear, following the intercepting aircraft and, if after overflying the runway landing is considered safe, proceeding to land.	Understood, will comply.
	NIGHT — Same and, in addition, showing steady landing lights.		NIGHT — Same and, in addition, showing steady landing lights (if carried).	
No	INTERCEPTED aircraft signals	Meaning	INTERCEPTING aircraft responds	Meaning
4	DAY — Raising landing gear while passing over landing runway at a height exceeding 300 m (1 000 ft) but not exceeding 600 m (2 000 ft) above the aerodrome level and continuing to circle the aerodrome.	Aerodrome you have designated is inadequate.	DAY or NIGHT — If it is desired that the intercepted aircraft follow to an alternate aerodrome, raise landing gear and use No. 1 signals prescribed for intercepting aircraft.	Understood, follow me.
	NIGHT — Flashing landing lights while passing over landing runway and continuing to circle the aerodrome. If unable to flash landing lights, flash any other lights available.		If it is decided to release the aircraft, use No. 2 signals prescribed for intercepting aircraft.	
5	DAY OR NIGHT — Regular switching on and off of all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply.	DAY or NIGHT — Use No. 2 signals prescribed for intercepting aircraft.	Understood.
6	DAY or NIGHT — Irregular flashing of all available lights.	In distress.	DAY or NIGHT — Use No. 2 signals prescribed for intercepting aircraft.	Understood.

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RECTO

IN CASE OF INTERCEPTION BY AIRCRAFT		
<ol style="list-style-type: none"> 1. RESPOND TO VISUAL SIGNALS AND INSTRUCTIONS FROM INTERCEPTING AIRCRAFT. 2. NOTIFY AIR TRAFFIC SERVICES. 3. ATTEMPT TO CONTACT INTERCEPTOR ON 121.5 or 243 MHz. 4. SSR TRANSPONDER TO MODE A CODE 7700. 5. IF INSTRUCTIONS BY RADIO FROM OTHER SOURCES CONFLICT WITH THOSE OF THE INTERCEPTING AIRCRAFT, COMPLY WITH THE AIRCRAFT AND REQUEST CLARIFICATION. 6. IF THERE ARE LANGUAGE PROBLEMS IN COMMUNICATING BY RADIO, USE THE PHRASES BELOW: 	<p>SEE OPPOSITE SIDE FOR EXPLANATION OF VISUAL SIGNALS</p>	
<i>Phrase</i>	<i>Pronunciation</i>	<i>Meaning</i>
CALL SIGN (call sign)	<u>KOL</u> SA-IN	My call sign is (call sign)
WILCO	<u>VILL</u> -KO	Understood/Will comply
CAN NOT	<u>KANN</u> NOT	Unable to comply
REPEAT	REE- <u>PEET</u>	Repeat your instructions
AM LOST	<u>AM LOSST</u>	Position unknown
MAYDAY	MAYDAY	I am in distress
HIJACK	<u>HI-JACK</u>	I have been hijacked
LAND (place name)	LAAND	I request to land at (place name)
DESCEND	DEE- <u>SEND</u>	I require descent

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VERSO

VISUAL SIGNALS			
FROM intercepting aircraft	Meaning	YOUR response	Meaning
ROCKS WINGS and starts LEVEL TURN. NIGHT — Same, but flashes navigation light at irregular intervals.	You have been intercepted. Follow me.	ROCK WINGS and FOLLOW. NIGHT — Same and flash YOUR navigational lights in similar response.	Understood. Will comply.
BREAKS AWAY to CLIMBING TURN.	You may proceed.	ROCK WINGS.	Understood. Will comply.
CIRCLES aerodrome, LOWERS LANDING GEAR and OVERFLYS runway. NIGHT — Same, but shows steady landing lights.	Land at this aerodrome.	FOLLOW interceptor, LOWER landing gear, INSPECT runway on overflight and LAND if runway appears safe. NIGHT — Same, also showing steady landing lights.	Understood. Will comply.
FROM intercepted aircraft	Meaning	THEIR response	Meaning
RAISE landing gear during runway overflight at height between 300 m (1 000 ft) and 500 m (2 000 ft) and CIRCLE the aerodrome. NIGHT — Same, but with flashing landing or other available lights.	Aerodrome you have designated is inadequate.	RAISES gear, repeats INTERCEPT and FOLLOW ME signals OR BREAKS AWAY to a climbing turn.	Understood. Follow me. You are released.
DAY or NIGHT — Regular SWITCHING ON and OFF of all available lights. (Use different sequence than that of normal flashing lights.)	Cannot comply.	ROCKS wings.	Understood.
DAY or NIGHT — FLASH all available lights in an irregular sequence.	In distress.	ROCKS wings.	Understood.

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— END —