

Amendment 48 to the International Standards, Rules of the Air (Annex 2 to the Convention on International Civil Aviation) was adopted by the Council at the fifth meeting of its 231st Session on 18 March 2024. The amendments are listed below:

Type of changes	Location	Current Status in ANO-2	After Amendment 48 incorporating in ANO-2
New text to add/ replace existing text/delete	CHAPTER 1. DEFINITION	<p>Current flight plan. The flight plan, including changes, if any, brought about by subsequent clearances.</p>	<p>Current flight plan (CPL). The flight plan, that reflects changes to the filed flight plan, if any, by subsequent ATC clearances.</p>
		<p>Filed flight plan. The flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes.</p>	<p>Filed flight plan (FPL or eFPL). The latest flight plan as submitted by the pilot, an operator or a designated representative, for use by ATS units.</p> <p><i>Note.— The FPL denotes a filed flight plan exchanged using aeronautical fixed service while eFPL denotes a filed flight plan exchanged using FF-ICE services. The eFPL allows for the exchange of additional information not contained within the FPL.</i></p>
		<p>Flight plan. Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of An aircraft</p>	<p>Flight plan. Specified information, relative to an intended flight or portion of a flight of an aircraft.</p> <p><i>Note 1.— The term flight plan may be prefixed by the words “preliminary”, “filed”, “current” or “operational” to indicate the context and different stages of a flight.</i></p> <p><i>Note 2.— When the word “message” is used as a suffix to this term, it denotes the content and format of the flight plan data as transmitted.</i></p>
		<p>Repetitive flight plan (RPL). A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.</p>	<p>This definition will no longer exist</p>

New text to be inserted	CHAPTER 3. GENERAL RULES 3.3 Flight Plans		Note.— Procedures relating to flight plans and associated services are contained in the PANS-ATM (Doc 4444).
New text to be inserted	CHAPTER 3. GENERAL RULES 3.3.4 Changes to a flight plan		Note.— Information submitted prior to departure regarding fuel endurance or total number of persons carried on board, if incorrect at time of departure, constitutes a significant change to the flight plan and as such must be reported.
Appendix and Attachment	All Appendix And All Attachment	Old Appendix part will be deleted	Appendix and Attachment will be replaced as per attached Appendix and Attachment

APPENDIX 1. SIGNALS

(Note.— See Chapter 3, 3.4 of this ANO)

1. Distress And Urgency Signals

Note 1 – None of the provisions in this section shall prevent the use, by an aircraft in distress, of any means at its disposal to attract attention, make known its position and obtain help.

Note 2 – For full details of telecommunication transmission procedures for the distress and urgency signals, see ANO 10, Volume II, Chapter 5.

Note 3 – For details of the search and rescue visual signals, see ANO 12.

1.1 Distress signals

The following signals used either together or separately, mean that grave and imminent danger threatens, and immediate assistance is requested:

- a) a signal made by radiotelegraphy or by any other signaling method consisting of the group SOS (. . . ____ . . . in the Morse Code);
- b) a radiotelephony distress signal consisting of the spoken word MAYDAY;
- c) a distress message sent via data link which transmits the intent of the word MAYDAY;
- d) rockets or shells throwing red lights, fired one at a time at short intervals;
- e) a parachute flare showing a red light.

Note – Article 41 of the ITU Radio Regulations (Nos. 3268, 3270 and 3271 refer) provides information on the alarm signals for actuating radiotelegraph and radiotelephone auto-alarm systems:

3268 The radiotelegraph alarm signal consists of a series of twelve dashes sent in one minute, the duration of each dash being four seconds and the duration of the interval between consecutive dashes one second. It may be transmitted by hand but its transmission by means of an automatic instrument is recommended.

3270 The radiotelephone alarm signal consists of two substantially sinusoidal audio frequency tones transmitted alternately. One tone shall have a frequency of 2 200 Hz and the other a frequency of 1 300 Hz, the duration of each tone being 250 milliseconds.

3271 The radiotelephone alarm signal, when generated by automatic means, shall be sent continuously for a period of at least thirty seconds but not exceeding one minute; when generated by other means, the signal shall be sent as continuously as practicable over a period of approximately one minute.

1.2 Urgency signals

1.2.1 The following signals, used either together or separately, mean that an aircraft wishes to give notice of difficulties which compel it to land without requiring immediate assistance:

- a) the repeated switching on and off of the landing lights; or
- b) the repeated switching on and off of the navigation lights in such manner as to be distinct from flashing navigation lights.

1.2.2 The following signals, used either together or separately, mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight:

- a) a signal made by radiotelegraphy or by any other signalling method consisting of the group XXX;
- b) a radiotelephony urgency signal consisting of the spoken words PAN, PAN;
- c) an urgency message sent via data link which transmits the intent of the words PAN, PAN.

2. Signals For Use In The Event Of Interception

2.1 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 racetrack 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 Chapter 3, 3.8.</i></p>	Understood, will comply.
2	<p>DAY or NIGHT — An abrupt breakaway 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.	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.
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2.2 Signals initiated by intercepted aircraft and responses by intercepting aircraft

<i>Series</i>	<i>INTERCEPTED Aircraft Signals</i>	<i>Meaning</i>	<i>INTERCEPTING Aircraft Responds</i>	<i>Meaning</i>
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.	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. 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	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.

3. Visual Signals Used To Warn An Unauthorized Aircraft Flying In, Or About To Enter A Restricted, Prohibited Or Danger Area

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.

4. Signals For Aerodrome Traffic

4.1 Light and pyrotechnic signals

4.1.1 Instructions

Light	From Aerodrome Control to:		
	Aircraft in flight	Aircraft on the ground	
Directed towards aircraft concerned (see Figure A1-1).	Steady green	Cleared to land	Cleared for take-off
	Steady red	Give way to other aircraft and continue circling	Stop
	Series of green flashes	Return for landing*	Cleared to taxi
	Series of red flashes	Aerodrome unsafe, do not land	Taxi clear of landing area in use
	Series of white flashes	Land at this aerodrome and proceed to apron*	Return to starting point on the aerodrome
Red pyrotechnic	Notwithstanding any previous instructions, do not land for the time being		

* Clearances to land and to taxi will be given in due course.

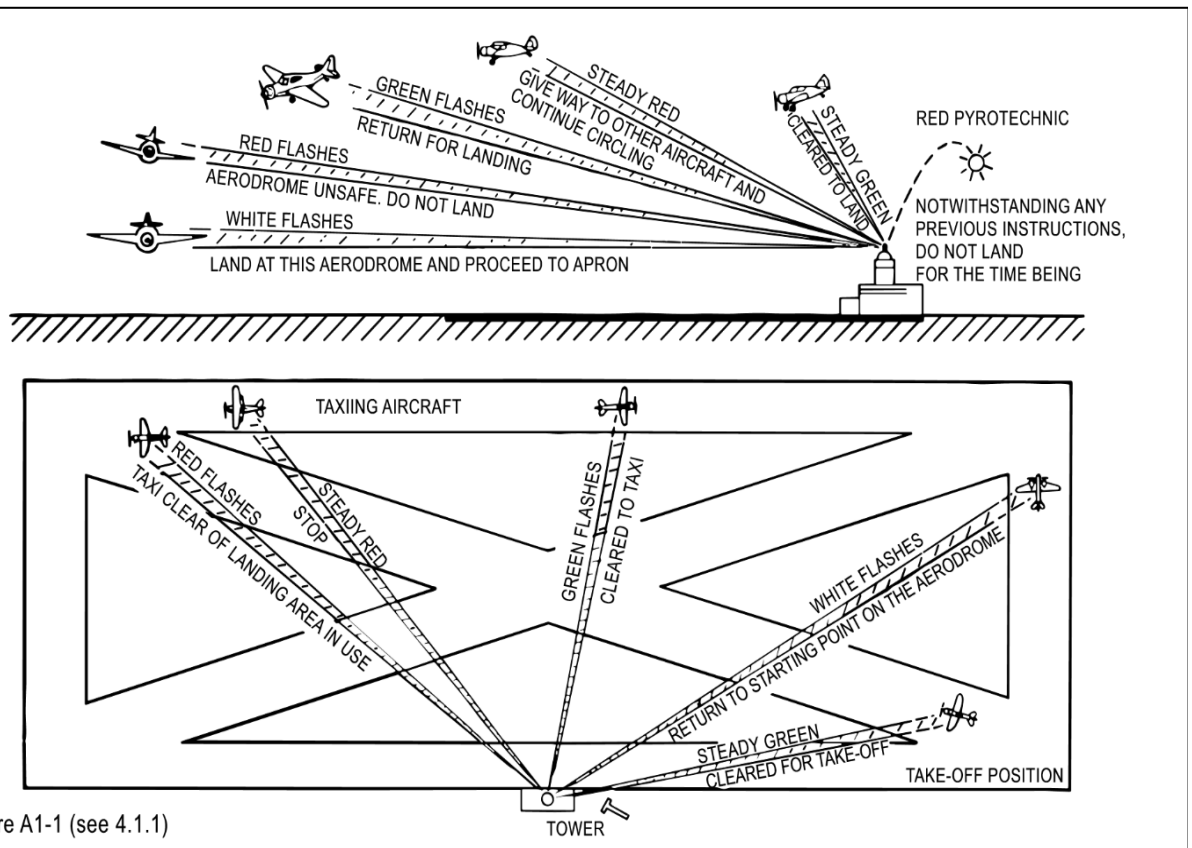


Figure A1-1 (see 4.1.1)

4.1.2 Acknowledgement by an aircraft

a) *When in flight:*

- 1) during the hours of daylight:
 - by rocking the aircraft's wings;

Note – This signal should not be expected on the base and final legs of the approach.

- 2) during the hours of darkness:

- by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

b) *When on the ground:*

- 1) during the hours of daylight:
 - by moving the aircraft's ailerons or rudder;

- 2) during the hours of darkness:

- by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

4.2 Visual ground signals

Note.— For details of visual ground aids, see ANO 14.

4.2.1 Prohibition of landing

A horizontal red square panel with yellow diagonals (Figure A1-2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.



Figure A1-2

4.2.2 Need for special precautions while approaching or landing

A horizontal red square panel with one yellow diagonal (Figure A1-3) when displayed in a signal area indicates that owing to the bad state of the manoeuvring area, or for any other reason, special precautions must be observed in approaching to land or in landing.



Figure A1-3

4.2.3 Use of runways and taxiways

4.2.3.1 A horizontal white dumb-bell (Figure A1-4) when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.

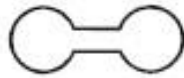


Figure A1-4

4.2.3.2 The same horizontal white dumb-bell as in 4.2.3.1 but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell (Figure A1-5) when displayed in a signal area indicates that aircraft are required to land and take off on runways only, but other manoeuvres need not be confined to runways and taxiways.



Figure A1-5

4.2.4 Closed runways or taxiways

Crosses of a single contrasting colour, yellow or white (Figure A1-6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.



Figure A1-6

4.2.5 Directions for landing or take-off

4.2.5.1 A horizontal white or orange landing T (Figure A1-7) indicates the direction to be used by aircraft for landing and take-off, which shall be in a direction parallel to the shaft of the T towards the cross arm.

Note – When used at night, the landing T is either illuminated or outlined in white lights.

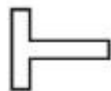


Figure A1-7

4.2.5.2 A set of two digits (Figure A1-8) displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.



Figure A1-8

4.2.6 Right-hand traffic

When displayed in a signal area, or horizontally at the end of the runway or strip in use, a righthand arrow of conspicuous colour (Figure A1-9) indicates that turns are to be made to the right before landing and after take-off.

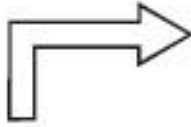


Figure A1-9

4.2.7 Air traffic services reporting office

The letter C displayed vertically in black against a yellow background (Figure A1-10) indicates the location of the air traffic services reporting office.

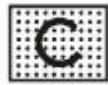


Figure A1-10

4.2.8 Glider flights in operation

A double white cross displayed horizontally (Figure A1-11) in the signal area indicates that the aerodrome is being used by gliders and that glider flights are being performed.

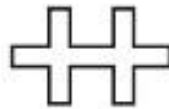


Figure A1-11

5. Marshalling Signals

5.1 From a signalman to an aircraft

Note 1 – These signals are designed for use by the signalman, with hands illuminated as necessary to facilitate observation by the pilot, and facing the aircraft in a position:

a) for fixed-wing aircraft, on left side of aircraft, where best seen by the pilot; and

b) for helicopters, where the signalman can best be seen by the pilot.

Note 2 – The meaning of the relevant signals remains the same if bats, illuminated wands or torchlights are held.

Note 3 – The aircraft engines are numbered, for the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).

Note 4 – Signals marked with an asterisk () are designed for use to hovering helicopters.*

Note 5 – References to wands may also be read to refer to daylight-fluorescent table-tennis bats or gloves (daytime only).

Note 6 – References to the signalman may also be read to refer to marshaller.

- 5.1.1 Prior to using the following signals, the signalman shall ascertain that the area within which an aircraft is to be guided is clear of objects which the aircraft, in complying with 3.4.1, might otherwise strike.

Note – The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.

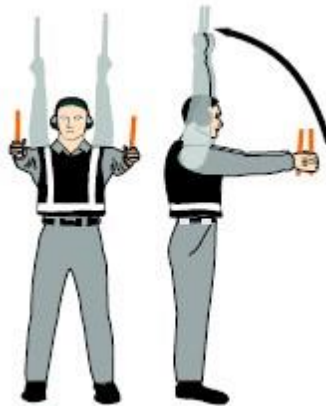
Note – This signal provides an indication by a person positioned at the aircraft wing tip, to the pilot/marshaller/push-back operator, that the aircraft movement on/off a parking position would be unobstructed.

1. Wingwalker/guide



Raise right hand above head level with wand pointing up; move left-hand wand pointing down toward body.

2. Identify gate



Raise fully extended arms straight above head with wands pointing up.

3. Proceed to next signalman or as directed by tower/ground control



Point both arms upward; move and extend arms outward to sides of body and point with wands to direction of next signalman or taxi area.

4. Straight ahead



Bend extended arms at elbows and move wands up and down from chest height to head.

5 a) Turn left (from pilot's point of view)



With right arm and wand extended at a 90-degree angle to body, make “come ahead” signal with left hand. The rate of signal motion indicates to pilot the rate of aircraft turn.

5 b) Turn right (from pilot's point of view)



With left arm and wand extended at a 90-degree angle to body, make “come ahead” signal with right hand. The rate of signal motion indicates to pilot the rate of aircraft turn.

6 a) Normal stop



Fully extend arms and wands at a 90-degree angle to sides and slowly move to above head until wands cross.

6 b) Emergency stop



Abruptly extend arms and wands to top of head, crossing wands.

7 a) Set brakes



Raise hand just above shoulder height with open palm. Ensuring eye contact with flight crew, close hand into a fist. **Do not** move until receipt of “thumbs up” acknowledgement from flight crew.

7 b) **Release brakes**



Raise hand just above shoulder height with hand closed in a fist. Ensuring eye contact with flight crew, open palm. **Do not** move until receipt of “thumbs up” acknowledgement from flight crew.

8 a) **Chocks inserted**



With arms and wands fully extended above head, move wands inward in a “jabbing” motion until wands touch. **Ensure** acknowledgement is received from flight crew.

8 b) **Chocks removed**



With arms and wands fully extended above head, move wands outward in a “jabbing” motion. **Do not** remove chocks until authorized by flight crew.

9. Start engine(s)



Raise right arm to head level with wand pointing up and start a circular motion with hand; at the same time, with left arm raised above head level, point to engine to be started.

10. Cut engines



Extend arm with wand forward of body at shoulder level; move hand and wand to top of left shoulder and draw wand to top of right shoulder in a slicing motion across throat.

11. Slow down



Move extended arms downwards in a “patting” gesture, moving wands up and down from waist to knees.

12. Slow down engine(s) on indicated side



With arms down and wands toward ground, wave either *right* or *left* wand up and down indicating engine(s) on *left* or *right* side respectively should be slowed down.

13. Move back



With arms in front of body at waist height, rotate arms in a forward motion. To stop rearward movement, use signal 6 a) or 6 b).

14 a) Turns while backing (for tail to starboard)



Point left arm with wand down and bring right arm from overhead vertical position to horizontal forward position, repeating right-arm movement.

14 b) Turns while backing (for tail to port)



Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.

15. Affirmative/all clear



Raise right arm to head level with wand pointing up or display hand with “thumbs up”; left arm remains at side by knee.

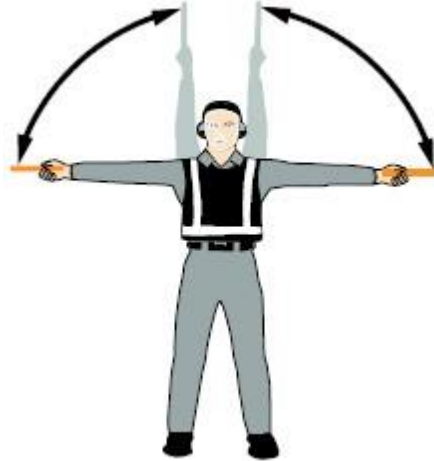
Note- This signal is also used as a technical/ servicing communication signal.

***16. Hover**



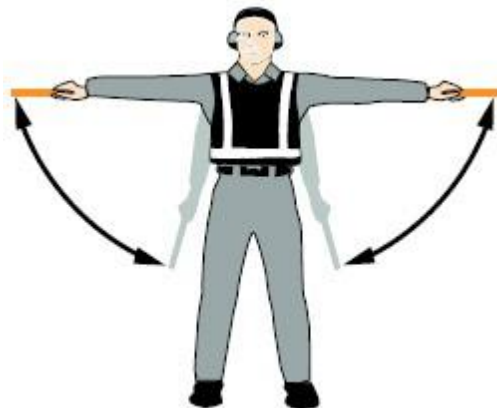
Fully extend arms and wands at a 90-degree angle to sides.

***17. Move upwards**



Fully extend arms and wands at a 90-degree angle to sides and, with palms turned up, move hands upwards. Speed of movement indicates rate of ascent.

***18. Move downwards**



Fully extend arms and wands at a 90-degree angle to sides and, with palms turned down, move hands downwards. Speed of movement indicates rate of descent

***19 a) Move horizontally left (from pilot's point of view)**



Extend arm horizontally at a 90-degree angle to right side of body. Move other arm in same direction in a sweeping motion.

***19 b) Move horizontally right (from pilot's point of view)**



Extend arm horizontally at a 90-degree angle to left side of body. Move other arm in same direction in a sweeping motion.

***20. Land**



Cross arms with wands downwards and in front of body.

21. Hold position/stand by



Fully extend arms and wands downwards at a 45-degree angle to sides. Hold position until aircraft is clear for next manoeuvre.

22. Dispatch aircraft



Perform a standard salute with right hand and/or wand to dispatch the aircraft. Maintain eye contact with flight crew until aircraft has begun to taxi.

23. Do not touch controls (technical/servicing communication signal)



Extend right arm fully above head and close fist or hold wand in horizontal position; left arm remains at side by knee.

24. Connect ground power (technical/servicing communication signal)



Hold arms fully extended above head; open left hand horizontally and move finger tips of right hand into and touch open palm of left hand (forming a “T”). At night, illuminated wands can also be used to form the “T” above head.

25. **Disconnect power (technical/servicing communication signal)**



Hold arms fully extended above head with finger tips of right hand touching open horizontal palm of left hand (forming a “T”); then move right hand away from the left. **Do not** disconnect power until authorized by flight crew. At night, illuminated wands can also be used to form the “T” above head.

26. **Negative (technical/servicing communication signal)**



Hold right arm straight out at 90 degrees from shoulder and point wand down to ground or display hand with “thumbs down”; left hand remains at side by knee.

27. **Establish communication via interphone (technical/servicing communication signal)**



Extend both arms at 90 degrees from body and move hands to cup both ears.

28. Open/close stairs (technical/servicing communication signal)



With right arm at side and left arm raised above head at a 45-degree angle, move right arm in a sweeping motion towards top of left shoulder.

Note – This signal is intended mainly for aircraft with the set of integral stairs at the front.

5.2 From the pilot of an aircraft to a signalman

Note 1 – These signals are designed for use by a pilot in the cockpit with hands plainly visible to the signalman, and illuminated as necessary to facilitate observation by the signalman.

Note 2 – The aircraft engines are numbered in relation to the signalman facing the aircraft, from right to left (i.e. No. 1 engine being the port outer engine).

5.2.1 Brakes

Note – The moment the fist is clenched or the fingers are extended indicates, respectively, the moment of brake engagement or release.

- a) *Brakes engaged:* raise arm and hand, with fingers extended, horizontally in front of face, then clench fist.
- b) *Brakes released:* raise arm, with fist clenched, horizontally in front of face, then extend fingers.

5.2.2 Chocks

- a) *Insert chocks:* arms extended, palms outwards, move hands inwards to cross in front of face.
- b) *Remove chocks:* hands crossed in front of face, palms outwards, move arms outwards.

5.2.3 Ready to start engine(s)

Raise the appropriate number of fingers on one hand indicating the number of the engine to be started.

5.3 Technical/servicing communication signals

- 5.3.1 Manual signals shall only be used when verbal communication is not possible with respect to technical/servicing communication signals.
- 5.3.2 Signalmen shall ensure that an acknowledgement is received from the flight crew with respect to technical/servicing communication signals.

Note – The technical/servicing communication signals are included in Appendix 1 to standardize the use of hand signals used to communicate to flight crews during the aircraft movement process that relate to servicing or handling functions.

6. Standard Emergency Hand Signals

The following hand signals are established as the minimum required for emergency communication between the aircraft rescue and firefighting (ARFF) incident commander/ARFF firefighters and the cockpit and/or cabin crews of the incident aircraft. ARFF emergency hand signals should be given from the left front side of the aircraft for the flight crew.

1. Recommend evacuation



Evacuation recommended based on ARFF and incident commander's assessment of external situation.

Arm extended from body and held horizontal with hand upraised at eye level. Execute beckoning arm motion angled backward. Non-beckoning arm held against body.

Night — same with wands.

2. Recommended stop



Recommend evacuation in progress be halted. Stop aircraft movement or other activity in progress.

Arms in front of head, crossed at wrists..

Night — same with wands.

3. Emergency Contained



No outside evidence of dangerous conditions or “all-clear”

Arms extended outward and down at a 45-degree angle. Arms moved inward below waistline simultaneously until wrists crossed, then extended outward to starting

Night — same with wands.



4. Fire

Move right-hand in a “fanning” motion from shoulder to knee, while at the same pointing left hand to area of fire.

Night — same with wands.

APPENDIX 2. INTERCEPTION OF CIVIL AIRCRAFT

(Note – See Chapter 3, 3.8 of this ANO)

1. Principles observed by Bangladesh

1.1 In order to maintain safety of navigation of civil aircraft, due regard should be given to the following principles when intercepting civil aircraft;

- 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 is not to be undertaken
- d) navigational guidance and related information will be given to an intercepted aircraft by radiotelephony, when- ever radio contact can be established; and
- e) in the case where an intercepted civil aircraft is required to land in the territory of Bangladesh, the aerodrome designated for the landing is to be suitable for the safe landing of the aircraft type concerned.

Note — In the unanimous adoption by the 25th Session (Extraordinary) of the ICAO Assembly on 10 May 1984 of Article 3 bis to the Convention on International Civil Aviation, Contracting States have recognized that “every State must refrain from resorting to the use of weapons against civil aircraft in flight”.

1.2 A standard method that has been established for the manoeuvring of aircraft intercepting a civil aircraft to avoid any hazard for the intercepted aircraft shall be published in the Bangladesh AIP

Note — Special recommendations regarding a method for the manoeuvring are contained in Attachment A, Section 3.

1.3 ATM Division of CAAB shall ensure that provision is made for the use of secondary surveillance radar or ADS-B, where available, to identify civil aircraft in areas where they may be subject to interception.

2. Action by intercepted aircraft

2.1 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 in Appendix 1;

- b) notify, if possible, the appropriate air traffic services unit;
 - c) attempt to establish radio-communication 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;
 - d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit.
 - e) if equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit.
- 2.2 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.
- 2.3 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.

3. Radio-communication during interception

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 Table A2-1 and transmitting each phrase twice:

Table A2-1

<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
DESCEND	DEE- <u>SEND</u>	Descend for landing	Will comply		
YOU LAND	<u>YOU</u> <u>LAAND</u>	Land at this aerodrome	CAN NOT	<u>KANN</u> NOTT	Unable to comply
PROCEED	PRO- <u>SEED</u>	You may proceed	REPEAT	REE- <u>PEET</u>	Repeat your instruction
			AM LOST	<u>AM</u> <u>LOSST</u>	Position unknown
			MAYDAY	MAYDAY	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

1. *In the second column, 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".*

APPENDIX 3. TABLE OF CRUISING LEVELS

The cruising levels to be observed when so required by this ANO are as follows:

- a) Within Dhaka FIR in accordance with conditions specified in the regional air navigation agreement, a vertical separation minimum (VSM) of 300 m (1 000 ft) is applied between FL 290 and FL 410 inclusive:*

Note – Guidance material relating to vertical separation is contained in the manual on completion of a 300 m (1 000 ft) Vertical Separation Minimum between FL 290 and FL 410 Inclusive (Doc 9574).

RVSM — FEET											
TRACK**											
From 000 Degrees to 179 Degrees***						From 180 Degrees to 359 Degrees***					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
FL	Level		FL	Level		FL	Level		FL	Level	
	Metres	Feet		Metres	Feet		Metres	Feet		Metres	Feet
010	300	1 000	—	—	—	020	600	2 000	—	—	—
030	900	3 000	035	1 050	3 500	040	1 200	4 000	045	1 350	4 500
050	1 500	5 000	055	1 700	5 500	060	1 850	6 000	065	2 000	6 500
070	2 150	7 000	075	2 300	7 500	080	2 450	8 000	085	2 600	8 500
090	2 750	9 000	095	2 900	9 500	100	3 050	10 000	105	3 200	10 500
110	3 350	11 000	115	3 500	11 500	120	3 650	12 000	125	3 800	12 500
130	3 950	13 000	135	4 100	13 500	140	4 250	14 000	145	4 400	14 500
150	4 550	15 000	155	4 700	15 500	160	4 900	16 000	165	5 050	16 500
170	5 200	17 000	175	5 350	17 500	180	5 500	18 000	185	5 650	18 500
190	5 800	19 000	195	5 950	19 500	200	6 100	20 000	205	6 250	20 500
210	6 400	21 000	215	6 550	21 500	220	6 700	22 000	225	6 850	22 500
230	7 000	23 000	235	7 150	23 500	240	7 300	24 000	245	7 450	24 500
250	7 600	25 000	255	7 750	25 500	260	7 900	26 000	265	8 100	26 500
270	8 250	27 000	275	8 400	27 500	280	8 550	28 000	285	8 700	28 500
290	8 850	29 000				300	9 150	30 000			
310	9 450	31 000				320	9 750	32 000			
330	10 050	33 000				340	10 350	34 000			
350	10 650	35 000				360	10 950	36 000			
370	11 300	37 000				380	11 600	38 000			
390	11 900	39 000				400	12 200	40 000			
410	12 500	41 000				430	13 100	43 000			
450	13 700	45 000				470	14 350	47 000			
490	14 950	49 000				510	15 550	51 000			
etc.	etc.	etc.				etc.	etc.	etc.			

* Except when, on the basis of Regional Air Navigation Agreements, a modified table of cruising levels based on a nominal VSM of 300 m (1 000 ft) is prescribed for use, under specified conditions, by aircraft operating above FL 410 within designated portions of the airspace.

** Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

*** Except where, on the basis of Regional Air Navigation Agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

b) in other areas where feet are the primary unit of measurement for altitude:

Note.— Guidance material relating to vertical separation is contained in the Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive (Doc 9574).

Non-RVSM — FEET											
TRACK*											
From 000 Degrees to 179 Degrees**						From 180 Degrees to 359 Degrees**					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level		FL	Level		FL	Level		FL	Level		FL
Metres	Feet		Metres	Feet		Metres	Feet		Metres	Feet	
010	300	1 000	—	—	—	020	600	2 000	—	—	—
030	900	3 000	035	1 050	3 500	040	1 200	4 000	045	1 350	4 500
050	1 500	5 000	055	1 700	5 500	060	1 850	6 000	065	2 000	6 500
070	2 150	7 000	075	2 300	7 500	050	2 450	8 000	085	2 600	8 500
090	2 750	9 000	095	2 900	9 500	100	3 050	10 000	105	3 200	10 500
110	3 350	11 000	115	3 500	11 500	120	3 650	12 000	125	3 800	12 500
130	3 950	13 000	135	4 100	13 500	140	4 250	14 000	145	4 400	14 500
150	4 550	15 000	155	4 700	15 500	160	4 900	16 000	165	5 050	16 500
170	5 200	17 000	175	5 350	17 500	180	5 500	18 000	185	5 650	18 500
190	5 800	19 000	195	5 950	19 500	200	6 100	20 000	205	6 250	20 500
210	6 400	21 000	215	6 550	21 500	220	6 700	22 000	225	6 850	22 500
230	7 000	23 000	235	7 150	23 500	240	7 300	24 000	245	7 450	24 500
250	7 600	25 000	255	7 750	25 500	260	7 900	26 000	265	8 100	26 500
270	8 250	27 000	275	8 400	27 500	280	8 550	28 000	285	8 700	28 500
290	8 850	29 000	300	9 150	30 000	310	9 450	31 000	320	9 750	32 000
330	10 050	33 000	340	10 350	34 000	350	10 650	35 000	360	10 950	36 000
370	11 300	37 000	380	11 600	38 000	390	11 900	39 000	400	12 200	40 000
410	12 500	41 000	420	12 800	42 000	430	13 100	43 000	440	13 400	44 000
450	13 700	45 000	460	14 000	46 000	470	14 350	47 000	480	14 650	48 000
490	14 950	49 000	500	15 250	50 000	510	15 550	51 000	520	15 850	52 000
etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.

*Magnetic track, or in polar areas at latitudes higher than 70 degrees and within such extensions to those areas as may be prescribed by the appropriate ATS authorities, grid tracks as determined by a network of lines parallel to the Greenwich Meridian superimposed on a polar stereographic chart in which the direction towards the North Pole is employed as the Grid North.

**Except where, on the basis of Regional Air Navigation Agreements, from 090 to 269 degrees and from 270 to 089 degrees is prescribed to accommodate predominant traffic directions and appropriate transition procedures to be associated therewith are specified.

APPENDIX 4. REMOTELY PILOTED AIRCRAFT SYSTEMS

(Note.— See Chapter 3, 3.1.9 of this ANO)

Note.— The circular Unmanned Aircraft Systems (UAS) (Cir 328) contains explanatory information related to remotely piloted aircraft systems.

1. General operating rules

- 1.1 A remotely piloted aircraft system (RPAS) engaged in international air navigation shall not be operated without appropriate authorization DGCA.
- 1.2 An RPA shall not be operated across the territory of another State without special authorization issued by each State in which the flight is to operate.
- 1.3 An RPA shall not be operated over the high seas without prior coordination with the ATS authority.
- 1.4 The authorization and coordination referred to in 1.2 and 1.3 shall be obtained prior to take-off if there is reasonable expectation, when planning the operation, that the aircraft may enter the airspace concerned.
- 1.5 An RPAS shall be operated in accordance with conditions specified by DGCA.
- 1.6 Flight plans shall be submitted in accordance with Chapter 3 of this Implementing Standard or as otherwise mandated by the State(s) in which the flight is to operate.
- 1.7 RPAS shall meet the performance and equipment carriage requirements for the specific airspace in which the flight is to operate.

2. Certificates and licensing

Note 1.— Assembly Resolution A37-15 Appendix G resolves that pending the coming into force of international Standards respecting particular categories, classes or types of aircraft, certificates issued or rendered valid, under national regulations, by the Contracting State in which the aircraft is registered shall be recognized by other Contracting States for the purposes of flight over their territories, including landings and take-offs.

Note 2.— Certification and licensing Standards are not yet developed. Thus, in the meantime, any certification and licensing need not be automatically deemed to comply with the SARPs of the related Annexes, including Annexes 1, 6 and 8, until such time as the related RPAS SARPs are developed.

Note 3.— Notwithstanding Assembly Resolution A37-15, Article 8 of the Chicago Convention assures each Contracting State of the absolute sovereignty over the authorization for RPA operations over its territory.

- 2.1 An RPAS shall be approved, taking into account the interdependencies of the components, in accordance with national regulations and in a manner that is consistent with the provisions of related Annexes. In addition:
- a) an RPA shall have a certificate of airworthiness issued in accordance with national regulations and in a manner that is consistent with the provisions of Annex 8; and
 - b) the associated RPAS components specified in the type design shall be certificated and maintained in accordance with national regulations and in a manner that is consistent with the provisions of related Annexes.
- 2.2 An operator shall have an RPAS operator certificate issued in accordance with national regulations and in a manner that is consistent with the provisions of Annex 6.
- 2.3 Remote pilots shall be licensed, or have their licences rendered valid, in accordance with national regulations and in a manner that is consistent with the provisions of Annex 1.

3. Request for authorization

- 3.1 The request for authorization referred to in 1.2 above shall be made to the appropriate authorities of the State(s) in which the RPA will operate not less than seven days before the date of the intended flight unless otherwise specified by the State.
- 3.2 Unless otherwise specified by the State(s), the request for authorization shall include the following:
- a) name and contact information of the operator;
 - b) RPA characteristics (type of aircraft, maximum certificated take-off mass, number of engines, wing span);
 - c) copy of certificate of registration;
 - d) aircraft identification to be used in radiotelephony, if applicable;
 - e) copy of the certificate of airworthiness;
 - f) copy of the RPAS operator certificate;
 - g) copy of the remote pilot(s) licence;
 - h) copy of the aircraft radio station licence, if applicable;
 - i) description of the intended operation (to include type of operation or purpose), flight rules, visual line-of-sight (VLOS) operation if applicable, date of intended flight(s), point of departure, destination, cruising speed(s), cruising level(s), route to be followed, duration/frequency of flight;

- j) take-off and landing requirements;
- k) RPA performance characteristics, including:
 - 1) operating speeds;
 - 2) typical and maximum climb rates;
 - 3) typical and maximum descent rates;
 - 4) typical and maximum turn rates;
 - 5) other relevant performance data (e.g. limitations regarding wind, icing, precipitation); and
 - 6) maximum aircraft endurance;
- l) communications, navigation and surveillance capabilities:
 - 1) aeronautical safety communications frequencies and equipment, including:
 - i) ATC communications, including any alternate means of communication;
 - ii) command and control links (C2) including performance parameters and designated operational coverage area;
 - iii) communications between remote pilot and RPA observer, if applicable;
 - 2) navigation equipment; and
 - 3) surveillance equipment (e.g. SSR transponder, ADS-B out);
- m) detect and avoid capabilities;
- n) emergency procedures, including:
 - 1) communications failure with ATC;
 - 2) C2 failure; and
 - 3) remote pilot/RPA observer communications failure, if applicable;
- o) number and location of remote pilot stations as well as handover procedures between remote pilot stations, if applicable;
- p) document attesting noise certification that is consistent with the provisions of Annex 16, Volume 1, if applicable;
- q) confirmation of compliance with national security standards in a manner that is consistent with the provisions of Annex 17, to include security measures relevant to the RPAS operation, as appropriate;

- r) payload information/description; and
- s) proof of adequate insurance/liability coverage.

3.3 When certificates or other documents identified in 3.2 above are issued in a language other than English, an English translation shall be included.

3.4 After authorization has been obtained from the appropriate State(s), air traffic services notification and coordination shall be completed in accordance with the requirements of the State(s).

Note.— A request for authorization does not satisfy the requirement to file a flight plan with the air traffic services units.

3.5 Changes to the authorization shall be submitted for consideration to the appropriate State(s). If the changes are approved, all affected authorities shall be notified by the operator.

3.6 In the event of a flight cancellation, the operator or remote pilot shall notify all appropriate authorities as soon as possible.

3.7 In addition to the standards specified in this Appendix, the RPAS operations in Bangladesh shall comply with appropriate RPAS regulation.

APPENDIX 5. UNMANNED FREE BALLOONS

(Note.— See Chapter 3, 3.1.10 of this ANO)

1. Classification of unmanned free balloons

Unmanned free balloons shall be classified as:

- a) *light*: an unmanned free balloon which carries a payload of one or more packages with a combined mass of less than 4 kg, unless qualifying as a heavy balloon in accordance with c) 2), 3) or 4) below; or
- b) *medium*: an unmanned free balloon which carries a payload of two or more packages with a combined mass of 4 kg or more, but less than 6 kg, unless qualifying as a heavy balloon in accordance with c) 2), 3) or 4) below; or
- c) *heavy* :an unmanned free balloon which carries a payload which:
 - 1) has a combined mass of 6 kg or more; or
 - 2) Includes a package of 3 kg or more; or
 - 3) Includes a package of 2 kg or more with an area density of more than 13 g per square centimeter; or
 - 4) uses a rope or other device for suspension of the payload that requires an impact force of 230 N or more to separate the suspended payload from the balloon.

Note 1 – The area density referred to in c) 3) is determined by dividing the total mass in grams of the payload package by the area in square centimeters of its smallest surface.

Note 2 – See Figure A5-1.

2. General operating rules

- 2.1 An unmanned free balloon shall not be operated without appropriate authorization from the DGCA.
- 2.2 An unmanned free balloon, other than a light balloon used exclusively for meteorological purposes and operated in the manner prescribed by the DGCA, shall not be operated across the territory of another State without appropriate authorization from the other State concerned.
- 2.3 The authorization referred to in 2.2 shall be obtained prior to the launching of the balloon if there is reasonable expectation, when planning the operation that the balloon may drift into airspace

over the territory of another State. Such authorization may be obtained for a series of balloon flights or for a particular type of recurring flight, e.g. atmospheric research balloon flights.

- 2.4 An unmanned free balloon shall be operated in accordance with conditions specified by the State of Registry and the State(s) expected to be over flown.

CHARACTERISTICS		PAYLOAD MASS (kilogrammes)					
		1	2	3	4	5	6 or more
ROPE or OTHER SUSPENSION 230 Newtons or MORE		HEAVY					
INDIVIDUAL PAYLOAD PACKAGE <div style="border: 1px dashed black; padding: 5px; width: fit-content;"> AREA DENSITY CALCULATION $\frac{\text{MASS (g)}}{\text{Area of smallest surface (cm}^2\text{)}}$ </div>	AREA DENSITY more than 13 g/cm ²	LIGHT					
	AREA DENSITY less than 13 g/cm ²						
COMBINED MASS (if Suspension OR Area density OR Mass of individual package are not factors)		LIGHT		MEDIUM			

Figure A5-1. Classification of unmanned free balloons

- 2.5 An unmanned free balloon shall not be operated in such a manner that impact of the balloon, or any part thereof, including its payload, with the surface of the earth, creates a hazard to persons or property not associated with the operation.
- 2.6 A heavy unmanned free balloon shall not be operated over the high seas without prior coordination with the ATS authority.

3. Operating limitations and equipment requirements

- 3.1 A heavy unmanned free balloon shall not be operated without authorization from the air traffic services unit at or through any level below 18 000 m (60 000 ft) pressure-altitude at which:
 - a) there are clouds or obscuring phenomena of more than four oktas coverage; or
 - b) the horizontal visibility is less than 8 km.
- 3.2 A heavy or medium unmanned free balloon shall not be released in a manner that will cause it to fly lower than 300 m (1 000 ft.) over the congested areas of cities, towns or settlements or an open-air assembly of persons not associated with the operation.
- 3.3 A heavy unmanned free balloon shall not be operated unless:
 - a) it is equipped with at least two payload flight termination devices or systems, whether automatic or operated by telecommand, that operate independently of each other;
 - b) for polyethylene zero-pressure balloons, at least two methods, systems, devices, or combinations thereof, that function independently of each other are employed for terminating the flight of the balloon envelope;

Note- Super pressure balloons do not require these devices as they quickly rise after payload discharge and burst without the need for a device or system designed to puncture the balloon envelope. In this context a super-pressure balloon is a simple non-extensible envelope capable of withstanding a differential of pressure, higher inside than out. It is inflated so that the smaller night-time pressure of the gas still fully extends the envelope. Such a super pressure balloon will keep essentially constant level until too much gas diffuses out of it.

- c) the balloon envelope is equipped with either a radar reflective device(s) or radar reflective material that will present an echo to surface radar operating in the 200 MHz to 2 700 MHz frequency range, and/or the balloon is equipped with such other devices as will permit continuous tracking by the operator beyond the range of ground-based radar.
- 3.4 A heavy unmanned free balloon shall not be operated under the following conditions:
 - a) in an area where ground-based SSR equipment is in use, unless it is equipped with a secondary surveillance radar transponder, with pressure-altitude reporting capability, which

is continuously operating on an assigned code, or which can be turned on when necessary by the tracking station; or

b) in an area where ground-based ADS-B equipment is in use, unless it is equipped with an ADS-B transmitter, with pressure-altitude reporting capability, which is continuously operating or which can be turned on when necessary by the tracking station.

3.5 An unmanned free balloon that is equipped with a trailing antenna that requires a force of more than 230 N to break it at any point shall not be operated unless the antenna has coloured pennants or streamers that are attached at not more than 15 m intervals.

3.6 A heavy unmanned free balloon shall not be operated below 18 000 m (60 000 ft) pressurealtitude between sunset and sunrise or such other period between sunset and sunrise (corrected to the altitude of operation) as may be prescribed by the appropriate ATS authority, unless the balloon and its attachments and payload, whether or not they become separated during the operation, are lighted.

3.7 A heavy unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously coloured open parachute) more than 15 m long shall not be operated between sunrise and sunset below 18 000 m (60 000 ft) pressure-altitude unless the suspension device is coloured in alternate bands of high conspicuity colours or has coloured pennants attached.

4. Termination

The operator of a heavy unmanned free balloon shall activate the appropriate termination devices required by 3.3 a) and b) above:

a) when it becomes known that weather conditions are less than those prescribed for the operation;

b) if a malfunction or any other reason makes further operation hazardous to air traffic or to persons or property on the surface; or

c) prior to unauthorized entry into the airspace over another State's territory.

5. Flight notification

5.1 Pre-flight notification

5.1.1 Early notification of the intended flight of an unmanned free balloon in the medium or heavy category shall be made to the appropriate air traffic services unit not less than seven days before the date of the intended flight.

5.1.2 Notification of the intended flight shall include such of the following information as may be required by the appropriate air traffic services unit:

- a) balloon flight identification or project code name;
- b) balloon classification and description;
- c) SSR code, aircraft address or NDB frequency as applicable;
- d) operator's name and telephone number;
- e) launch site;
- f) estimated time of launch (or time of commencement and completion of multiple launches);
- g) number of balloons to be launched and the scheduled interval between launches (if multiple launches);
- h) expected direction of ascent;
- i) cruising level(s) (pressure-altitude);
- j) the estimated elapsed time to pass 18 000 m (60 000 ft) pressure-altitude or to reach cruising level if at or below 18 000 m (60 000 ft), together with the estimated location;

Note – If the operation consists of continuous launchings, the time to be included is the estimated time at which the first and the last in the series will reach the appropriate level (e.g. 122136Z–130330Z).

- k) the estimated date and time of termination of the flight and the planned location of the impact/recovery area. In the case of balloons carrying out flights of long duration, as a result of which the date and time of termination of the flight and the location of impact cannot be forecast with accuracy, the term “long duration” shall be used.

Note - If there is to be more than one location of impact/recovery, each location is to be listed together with the appropriate estimated time of impact. If there is to be a series of continuous impacts, the time to be included is the estimated time of the first and the last in the series (e.g. 070330Z–072300Z).

- 5.1.3 Any changes in the pre-launch information notified in accordance with 5.1.2 above shall be forwarded to the air traffic services unit concerned not less than 6 hours before the estimated time of launch, or in the case of solar or cosmic disturbance investigations involving a critical time element, not less than 30 minutes before the estimated time of the commencement of the operation.

5.2 Notification of launch

Immediately after a medium or heavy unmanned free balloon is launched the operator shall notify the appropriate air traffic services unit of the following:

- a) balloon flight identification;
- b) launch site;
- c) actual time of launch;
- d) estimated time at which 18 000 m (60 000 ft) pressure altitude will be passed, or the estimated time at which the cruising level will be reached if at or below 18 000 m (60 000 ft), and the estimated location; and
- e) any changes to the information previously notified in accordance with 5.1.2 g) and h).

5.3 Notification of cancellation

The operator shall notify the appropriate air traffic services unit immediately it is known that the intended flight of a medium or heavy unmanned free balloon, previously notified in accordance with 5.1, has been cancelled.

6. Position recording and reports

- 6.1 The operator of a heavy unmanned free balloon operating at or below 18 000 m (60 000 ft) pressure-altitude shall monitor the flight path of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 2 hours.
- 6.2 The operator of a heavy unmanned free balloon operating above 18 000 m (60 000 ft) pressure altitude shall monitor the flight progress of the balloon and forward reports of the balloon's position as requested by air traffic services. Unless air traffic services require reports of the balloon's position at more frequent intervals, the operator shall record the position every 24 hours.
- 6.3 If a position cannot be recorded in accordance with 6.1 and 6.2, the operator shall immediately notify the appropriate air traffic services unit. This notification shall include the last recorded position. The appropriate air traffic services unit shall be notified immediately when tracking of the balloon is re-established.
- 6.4 One hour before the beginning of planned descent of a heavy unmanned free balloon, the operator shall forward to the appropriate air traffic services unit the following information regarding the balloon:
 - a) the current geographical position;
 - b) the current level (pressure-altitude);

- c) the forecast time of penetration of 18 000 m (60 000 ft) pressure-altitude, if applicable;
- d) the forecast time and location of ground impact.

6.5 The operator of a heavy or medium unmanned free balloon shall notify the appropriate air traffic services unit when the operation is ended.

ATTACHMENT A – INTERCEPTION OF CIVIL AIRCRAFT

(Note – See Chapter 3, 3.8 of this ANO and associated Note)

Note – In the interest of completeness, the substance of the provisions in Appendix 2 to this ANO is incorporated in this Attachment.

1. General

- 1.1 Interception of civil aircraft should be avoided and should be undertaken only as a last resort. If undertaken, the interception should 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. Practice interception of civil aircraft is not to be undertaken.
- 1.2 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 ANO 11.
 - b) areas prohibited to all civil flights and areas in which civil flight is not permitted without special authorization by the DGCA shall be clearly promulgated in Aeronautical Information Publications (AIP), 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, the availability and overall systems accuracy of the navigation systems to be used by civil aircraft and their ability to remain clear of the delineated areas shall be considered.
 - c) the establishment of additional navigation aids be considered where necessary to ensure that civil aircraft are able to safely circumnavigate prohibited or, as required, restricted areas.
- 1.3 To eliminate or reduce the hazards inherent in interceptions undertaken as a last resort, all possible efforts should be made to ensure coordinated actions by the pilots and ground units concerned to this end, it is essential that following steps shall be taken 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 Chapter 3 and Appendix 1 of this ANO;

- b) operators or pilots-in-command of civil aircraft implement the provisions in ANO 6-1, ANO 6-2 and ANO 6-3, 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 ANO 11, Chapter 2, and the PANS-ATM (Doc 4444);
- 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, radio communication with intercepted aircraft, and the need to refrain from resorting to the use of weapons;

Note.— See paragraphs 3 to 8.

- f) intercept control units and intercepting aircraft be provided with radiotelephony equipment compatible with the technical specifications of ANO 10, Volume I, so as to enable them to communicate with intercepted aircraft on the emergency frequency 121.5 MHz;
- g) secondary surveillance radar and/or ADS-B 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 aircraft identity and immediate recognition of any emergency or urgency conditions.

2. Interception manoeuvres

- 2.1 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.
- 2.2 An aircraft equipped with an airborne collision avoidance system (ACAS), which is being intercepted, may perceive the interceptor as a collision threat and thus initiate an avoidance manoeuvre in response to an ACAS resolution advisory. Such a manoeuvre might be misinterpreted by the interceptor as an indication of unfriendly intentions. It is important, therefore, that pilots of intercepting aircraft equipped with a secondary surveillance radar (SSR) transponder suppress the transmission of pressure-altitude information (in Mode C replies or in the AC field of Mode S replies) within a range of at least 37 km (20 NM) 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.

2.3 Manoeuvres for visual identification

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 m. 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.

2.4 Manoeuvres for navigational guidance

- 2.4.1 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.

- 2.4.2 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. If repeated attempts to attract the attention of the pilot-in-command of the intercepted aircraft by use of the Series 1 signal in Appendix 1, Section 2, 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 is created for the intercepted aircraft.
- 2.5 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.

3. Guidance of an intercepted aircraft

- 3.1 Navigational guidance and related information should be given to an intercepted aircraft by radiotelephony, whenever radio contact can be established.
- 3.2 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.
- 3.3 In the exceptional case where an intercepted civil aircraft is required to land in the territory overflowed, 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.
- 3.4 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.

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

4. Action by intercepted aircraft

The Standards in Appendix 2, Section 2, specify as follows:

4.1 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 in Appendix 1;
- b) notify, if possible, the appropriate air traffic services unit;
- c) attempt to establish radio communication 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;
- d) if equipped with SSR transponder, select Mode A, Code 7700, unless otherwise instructed by the appropriate air traffic services unit.
- e) if equipped with ADS-B or ADS-C, select the appropriate emergency functionality, if available, unless otherwise instructed by the appropriate air traffic services unit.

4.2 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.

4.3 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. Air-to-air visual signals

The visual signals to be used by intercepting and intercepted aircraft are those set forth in Appendix 1 to this ANO. It is essential that intercepting and intercepted aircraft adhere strictly to those signals and interpret correctly the signals given by the other aircraft, and that the intercepting aircraft pay particular attention to any signals given by the intercepted aircraft to indicate that it is in a state of distress or urgency.

6. Radio communication between the intercept control unit or the intercepting aircraft and the intercepted aircraft

- 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 unit(s).
- 6.2 If radio contact is established during interception but communication in a common language is not possible, attempts must be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in Table A-1 and transmitting each phrase twice.

7. Refraining from the use of weapons

The use of tracer bullets to attract attention is hazardous, and it is expected that measures will be taken to avoid their use so that the lives of persons on board and the safety of aircraft will not be endangered.

8. Coordination between intercept control units and air traffic services units

It is essential that close coordination 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.

Table A-1

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

1. *In the second column, 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".*

ATTACHMENT B – UNLAWFUL INTERFERENCE

1. General

The following procedures are intended as guidance for use by aircraft when unlawful interference occurs and the aircraft is unable to notify an air traffic services unit of this fact.

2. Procedures

2.1 If the pilot-in-command cannot proceed to an aerodrome in accordance with the rules in Chapter 3, 3.7.2, he/she should attempt to continue flying on the assigned track and at the assigned cruising level at least until able to notify an ATS unit or until within radar or ADS-B coverage.

2.2 When an aircraft subjected to an act of unlawful interference must depart from its assigned track or its assigned cruising level without being able to make radiotelephony contact with air traffic services, the pilot-in-command should, whenever possible:

- a) attempt to broadcast warnings on the VHF channel in use or the VHF emergency frequency, and other appropriate channels, unless considerations aboard the aircraft dictate otherwise. Other equipment such as on-board transponders and data links should also be used when it is advantageous to do so and circumstances permit; and
- b) proceed in accordance with applicable special procedures for in-flight contingencies, where such procedures have been established and promulgated in the *Regional Supplementary Procedures* (Doc 7030); or
- c) if no applicable regional procedures have been established, proceed at a level which differs from the cruising levels normally used for IFR flight by:
 - 1) 150 m (500 ft) in an area where a vertical separation minimum of 300 m (1 000 ft) is applied; or
 - 2) 300 m (1 000 ft) in an area where a vertical separation minimum of 600 m (2 000 ft) is applied.

Note – Action to be taken by an aircraft which is intercepted while being subject to an act of unlawful interference is prescribed in 3.8 of this ANO.