



UNIVERSAL SIGNALS FOR COMMUNICATIONS & AERODROMES

Purpose— This advisory circular (AC) provides guidance to ensure that pilots, operators, controllers and aerodrome operators are aware of and conform to the universal signals for operations of aircraft.

All persons involved in aviation must be aware of the universal aviation signals that appropriate to their technical specialization.

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- Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.
- Where an AC is referred to in a 'Note' below the regulation, the AC remains as guidance material,
- ACs should always be read in conjunction with the referenced regulations.

SECTION 1 POLICY & GENERAL INFORMATION

1.1 STATUS OF THIS AC

This is an original issuance [1]2017 of this AC.

1.2 BACKGROUND

- A. Standardized universal signals for communications and aerodrome markings are required to be used for international operations of aircraft.
- B. The signals included in this advisory circular are published by ICAO in Annex 2 and provided here for use by pilots and inclusion in the operators' manuals.

1.3 APPLICABILITY

This advisory circular is applicable to all pilots, operators, air traffic services and aerodrome operators involved in the operations of aircraft..

1.4 RELATED REGULATIONS

The following Rwanda Aviation Safety Regulations (RCARs) requirements are applicable to the universal aviation signals—

- Pilots, operators and other personnel shall comply with universal aviation signals: Part 10
- Operators must include these universal aviation signals in their operations manual: Part 12

1.5 RELATED PUBLICATIONS

These ICAO publications are source documents for this advisory circular—

- Annex 2; Rules of the Air.

Copies may be obtained from Document Sales Unit, ICAO, 999 University Street, Montreal, Quebec, Canada H3C 5H7.

SECTION 2 UNIVERSAL AVIATION SIGNALS FOR DISTRESS

2.1 GRAVE & IMMINENT DANGER

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

- 1) A signal made by radiotelegraphy or by any other signalling method consisting of the group SOS (• • • — — — • • • in the Morse Code);
- 2) A signal sent by radiotelephony consisting of the spoken word MAYDAY;
- 3) Rockets or shells throwing red lights, fired one at a time at short intervals;

- 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.
- For full details of telecommunication transmission procedures for the distress and urgency signals, see ICAO Annex 10, Volume II, Chapter 5.
- For details of the search and rescue visual signals, see ICAO Annex 12.

- 4) A parachute flare showing a red light.

2.2 MUST LAND NOW

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—

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

2.3 URGENT SAFETY MESSAGE

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—

- 1) A signal made by radiotelegraphy or by any other signalling method consisting of the group XXX.
- 2) A signal sent by radiotelephony consisting of the spoken words PAN, PAN.

Article 41 of the ITU Radio Schedule (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.

SECTION 3 UNIVERSAL AVIATION SIGNALS FOR AERODROME TRAFFIC CONTROL

3.1 VISUAL SIGNALS USED TO WARN AN UNAUTHORISED AIRCRAFT

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 unauthorised 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.

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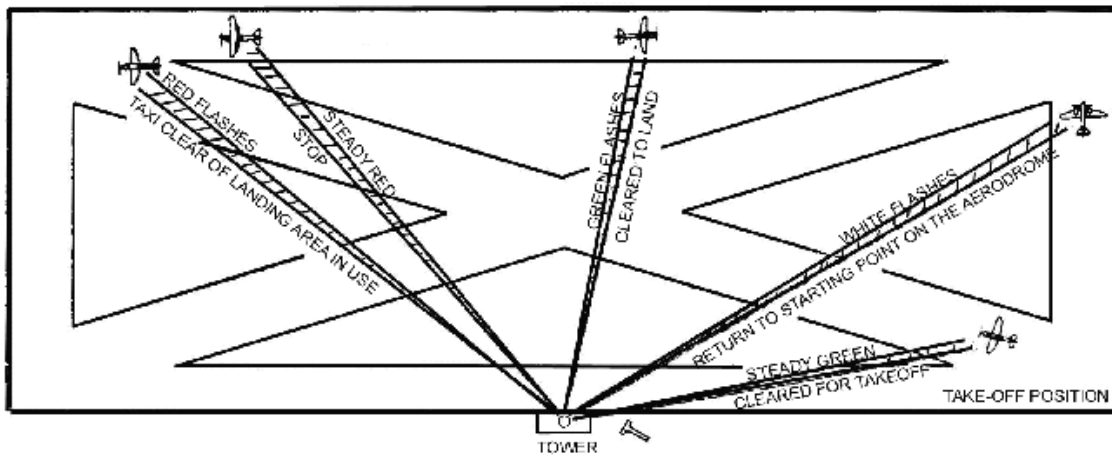
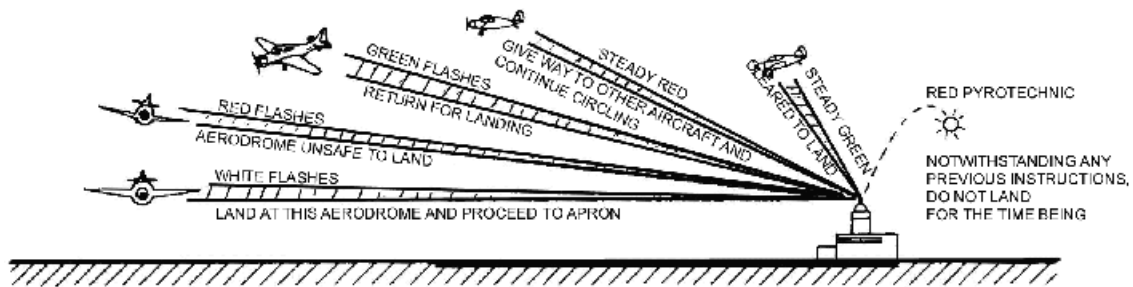
3.2 SIGNALS FOR AERODROME TRAFFIC

3.2.1 SIGNALS USED BY AERODROME CONTROLLERS

Aerodrome controllers shall use and pilots shall obey the following light and pyrotechnic signals—

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.



3.2.2 SIGNALS USED BY PILOTS

Pilots shall acknowledge aerodrome controller signals as follows—

3.2.2.1 When in Flight

- A. During the hours of daylight by rocking the aircraft's wings;
- B. 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.

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

3.2.2.2 When on the Ground

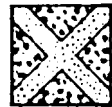
- A. During the hours of daylight by moving the aircraft's ailerons or rudder;
- B. During the hours of darkness by flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights

SECTION 4 UNIVERSAL AVIATION SIGNALS FOR AERODROMES

Aerodrome authorities shall use the following visual ground signals shall be use during the following situations—

4.1 PROHIBITION OF LANDING

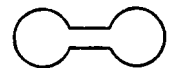
A horizontal red square panel with yellow diagonals when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.

**4.2 NEED FOR SPECIAL PRECAUTIONS WHILE APPROACHING OR LANDING**

A horizontal red square panel with one yellow diagonal 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.

**4.3 USE OF RUNWAYS & TAXIWAYS**

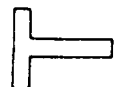
- A. A horizontal white dumb-bell when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.
- B. The same horizontal white dumb-bell, but with a black bar placed perpendicular to the shaft across each circular portion of the dumb-bell 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

**4.3.1 CLOSED RUNWAYS OR TAXIWAYS**

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

**4.3.2 DIRECTIONS FOR LANDING OR TAKE-OFF**

- A. A horizontal white or orange landing T indicates the direction to be used by aircraft for landing and rake-off, which shall be in a direction parallel to the shaft of the T towards the cross arm.



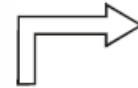
- B. A set of two digits displayed vertically at or near the aerodrome control tower indicates to aircraft on the manoeuvring area the direction for take-off, expressed in units of 10 degrees to the nearest 10 degrees of the magnetic compass.



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

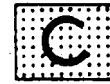
4.3.3 RIGHT-HAND TRAFFIC

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



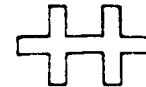
4.3.4 AIR TRAFFIC SERVICES REPORTING OFFICE

The letter C displayed vertically in black against a yellow background (Figure 8.10) indicates the location of the air traffic services reporting office.



4.3.5 GLIDER FLIGHTS IN OPERATION

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



End of Advisory Circular