

## APPENDIX 2. SIGNALS

(Note: See Article 36 of this rule)

### 1. Distress signals 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 details of the search and rescue visual signals, see Aeronautical Information Publication, Taipei Flight Information Region.

#### 1.1 Distress signals

1.1.1 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 signalling 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 2200 Hz and the other a frequency of 1300 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.

Light	From Aerodrome Control to:		
	Aircraft in flight	Aircraft on the ground	
Directed towards aircraft concerned (see Figure 1.1)	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.

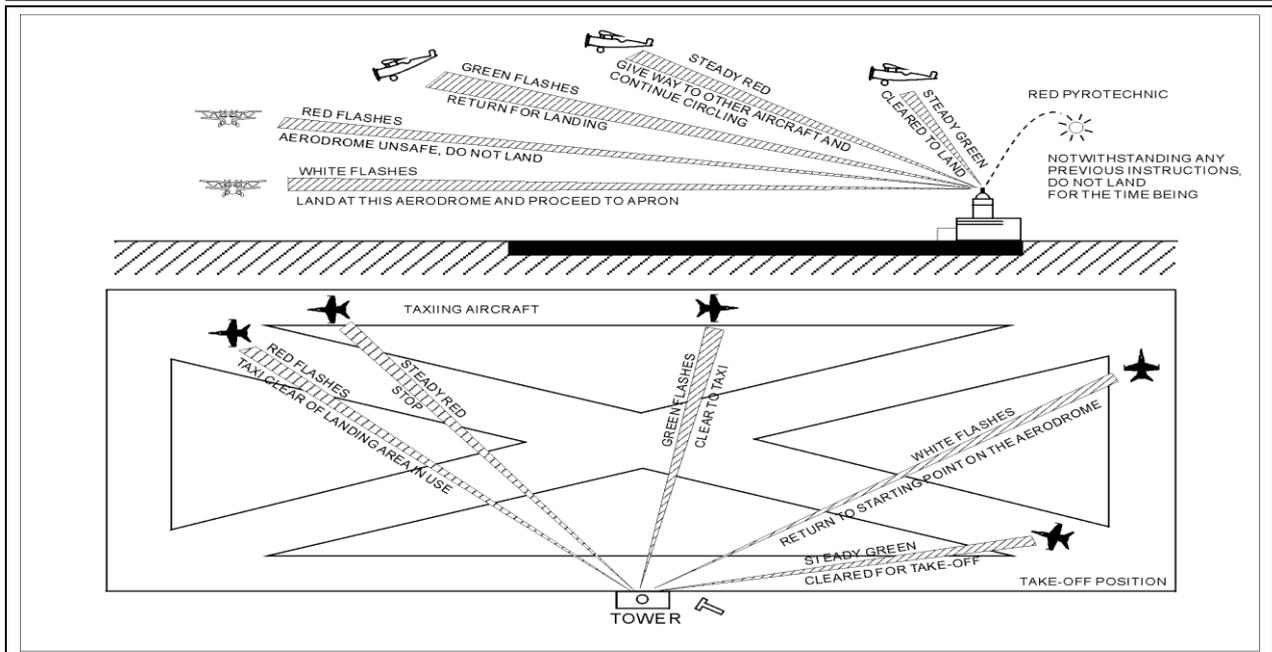


Figure 1.1

## 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:

- the repeated switching on and off of the landing lights; or
- 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 signal made by radiotelegraphy or by any other signalling method consisting of the group XXX.
- a radiotelephony urgency signal consisting of the spoken words PAN, PAN;
- 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

<i>Series</i>	<i>INTERCEPTING Aircraft Signals</i>	<i>Meaning</i>	<i>INTERCEPTED Aircraft Responds</i>	<i>Meaning</i>
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>	<p>You have been intercepted.</p> <p>Follow me.</p>	<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 article 52</i></p>	<p>Understood, will comply.</p>
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>	<p>You may proceed</p>	<p>DAY or NIGHT — Rocking the aircraft</p>	<p>Understood, will comply.</p>
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>	<p>Land at this aerodrome.</p>	<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>	<p>Understood, will comply.</p>

## 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 or by night, a series of projectiles discharged at intervals of 10 seconds, each showing, on bursting, red and green lights or stars will indicate to an aircraft to take such remedial action as may be necessary.

4 Signals for aerodrome traffic

4.1 Light and pyrotechnic signals

4.1.1 Instructions

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 Annex 14.*

### 4.2.1 PROHIBITION OF LANDING

A horizontal red square panel with yellow diagonal (Fig.1.2) when displayed in a signal area indicates that landings are prohibited and that the prohibition is liable to be prolonged.



Fig. 1.2

### 4.2.2 NEED FOR SPECIAL PRECAUTIONS WHILE APPROACHING OR LANDING

A horizontal red square panel with one yellow diagonal (Fig. 1.3) 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.

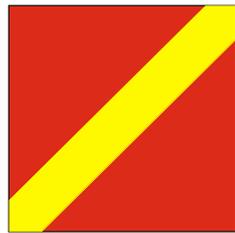


Fig. 1.3

### 4.2.3 USE OF RUNWAYS AND TAXIWAYS

4.2.3.1 A horizontal white dumb-bell (Fig. 1.4) when displayed in a signal area indicates that aircraft are required to land, take off and taxi on runways and taxiways only.

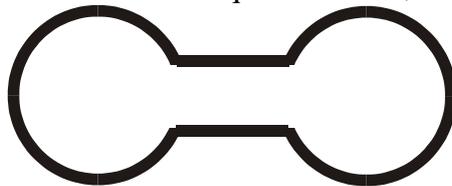


Fig. 1.4

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 (Fig.1.5) 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.

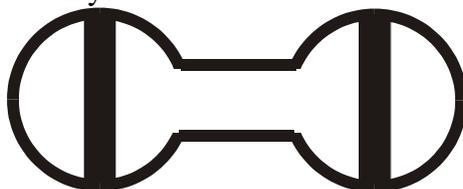


Fig. 1.5

#### 4.2.4 CLOSED RUNWAYS OR TAXIWAYS

Crosses of a single contrasting colour, yellow or white (Fig. 1.6), displayed horizontally on runways and taxiways or parts thereof indicate an area unfit for movement of aircraft.

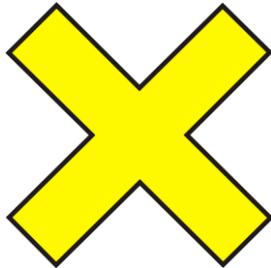


Fig. 1.6

#### 4.2.5 DIRECTIONS FOR LANDING OR TAKE-OFF

4.2.5.1 A horizontal white or orange landing T (Fig. 1.7) 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 coloured lights.

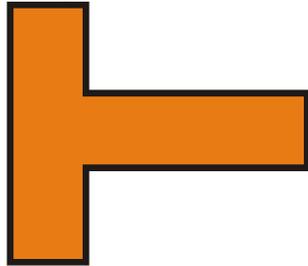


Fig. 1.7

4.2.5.2 A set of two digits (Fig.1.8) 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.



Fig. 1.8

#### 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 right-hand arrow of conspicuous colour (Fig.1. 9) indicates that turns are to be made to the right before landing and after take-off.

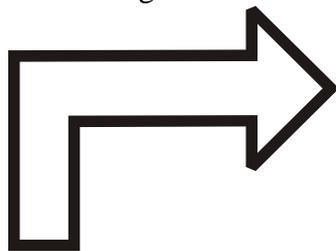


Fig.1. 9

#### 4.2.7 AIR TRAFFIC SERVICES REPORTING OFFICE

The letter C displayed vertically in black against a yellow background (Fig. 1.10) indicates the location of the flight information or flight advisory service unit.

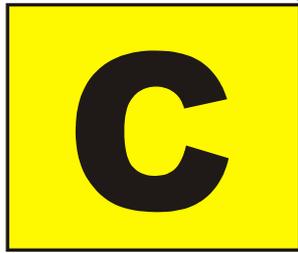


Fig. 1.10

#### 4.2.8 GLIDER FLIGHTS IN OPERATION

A double white cross displayed horizontally (Fig. 1.11) in the signal area indicates that the aerodrome is being used by gliders and that glider flights are being performed.

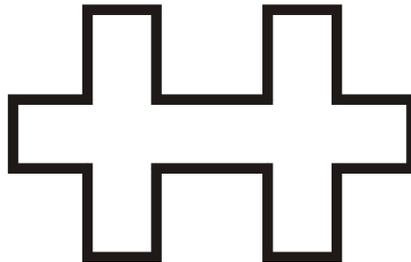


Fig. 1.11

### 5 Marshalling signals

#### 5.1 From a signalman to an aircraft

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

- a) for fixed-wing aircraft, forward of the left-wing tip within view of the pilot; and
- b) for helicopters, where he can best be seen by the pilot.

Note 2: The meaning of the relevant signals remains the same if bats, illuminated wands or torch lights are held.

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

Note 4. Signals marked with an asterisk are designed for use to hovering helicopters.

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 article 36 of this rule, might otherwise strike.

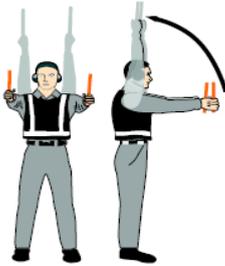
Note: The design of many aircraft is such that the path of the wing tips, engines and other extremities cannot always be monitored visually from the flight deck while the aircraft is being manoeuvred on the ground.



### 1. Wingwalker/guide

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

*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.*



### 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.



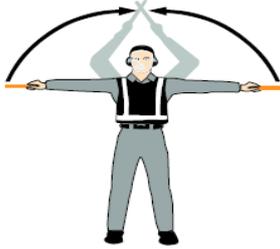
### 5 a). Turn left (from pilot's point of view)

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.



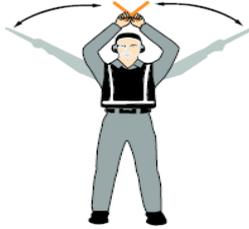
### 5 b). Turn right (from pilot's point of view)

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.



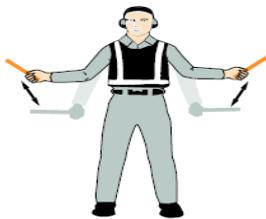
**9. Start engine(s)**

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).



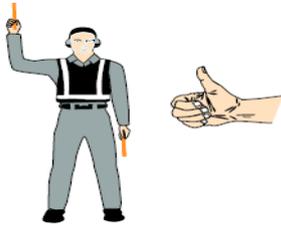
**14 a). Turns while backing (for tail to starboard)**

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)**

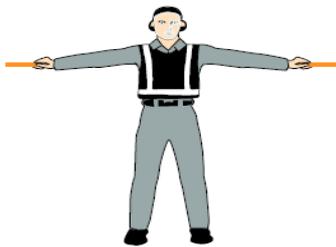
Point right arm with wand down and bring left arm from overhead vertical position to horizontal forward position, repeating left-arm movement.



**15. Affirmative/all clear**

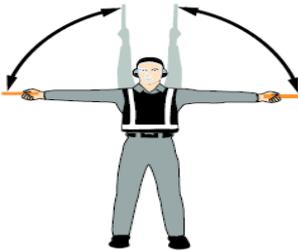
Raise right arm to head level with wand pointing up or display hand with "thumbs up"; left arm remains at side by knee.

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



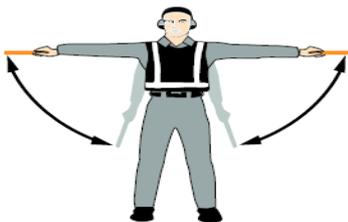
**\*16. Hover**

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.



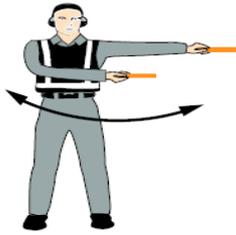
**\*18. Move downwards**

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.



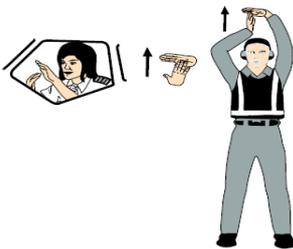
**22. Dispatch aircraft**

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.



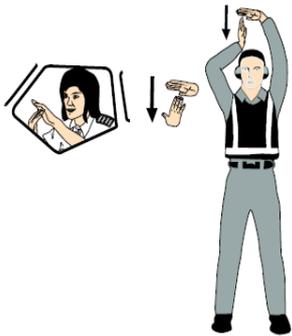
**23. Do not touch controls  
(technical/servicing  
communication signal)**

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.



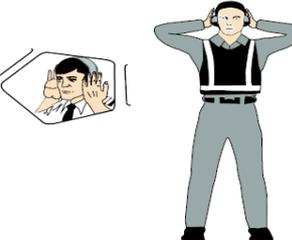
**25. Disconnect power  
(technical/servicing  
communication signal)**

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 his 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 his right to his 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 2 to standardize the use of hand signals used to communicate to flight crews during the aircraft movement process that relate to serving 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.

Note.— In order to communicate more effectively with the cabin crew, emergency hand signals may be given by ARFF firefighters from other positions.

	<p><b>1. Recommend evacuation</b></p> <p>Evacuation recommended based on ARFF and incident commander's assessment of external situation.</p> <p>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.</p> <p>Night — same with wands.</p>
---	--



### 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 position (umpire's "safe" signal).

Night — same with wands.