

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE INSTRUCTION 11-218

26 MAY 1994



Flying Operations

***AIRCRAFT OPERATION AND MOVEMENT ON
THE GROUND***

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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(Capt Michael Wolter)
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(Maj Gen Edwin E. Tenoso)
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This instruction implements AFR 11-2, *Flight Rules and Procedures*. It prescribes rules for the operation, movement, and control of aircraft on the ground. The international marshaling signals that comply with guidelines set by the International Civil Aviation Organization (ICAO) and the North Atlantic Treaty Organization (NATO) are explained and illustrated. Major commands (MAJCOM) must send supplements to the Air Force Flight Standards Agency (HQ AFFSA/XOIA), Washington DC 20331-2007, for approval.

SUMMARY OF CHANGES

This issuance aligns the instruction with AFR 11-2. Incorporates signals for "hot brakes," "hot brakes left," "hot brakes right," and "feather/fuel shutoff (propeller only)" and deletes "marshaling finishes."

Chapter 1

RULES FOR AIRCRAFT OPERATION AND MOVEMENT ON THE GROUND

Section 1A—General Rules

1.1. Procedures and Checklists. Personnel authorized to start, test, taxi, or operate AF aircraft (fixed or rotary wing) will adhere to procedures as described in aircraft flight and maintenance manuals. They will use appropriate technical order (TO) checklists.

1.2. Use of Protective Equipment:

1.2.1. Personnel must wear protective goggles or an appropriate helmet with visor, when in rotor wash areas or in front of an aircraft that is being backed using the aircraft's engines.

1.2.2. Personnel must wear ear plugs, muff-type ear defenders, or headsets in the immediate area of aircraft that have engines running. "Immediate area" is the area where hearing loss may occur if ear protectors are not worn.

1.3. Use of Simulators. Units with flight simulators (aircrew training devices) will schedule maintenance personnel certified to run engines or taxi aircraft to use the simulator during periods that will not interfere with aircrew training. As a minimum, each person requires one emergency procedures evaluation simulator period per year. You should give priority to training and evaluating engine runup certifying officials.

Section 1B—Start, Runup, and Test of Engines

1.4. Authorized Personnel. Personnel authorized to start, operate, warmup, or test engines installed in aircraft are:

- Rated pilots.
- Student pilots checked out on type, or being supervised by a qualified instructor.
- Flight engineers checked out on type, or being supervised by a qualified instructor.
- Maintenance personnel authorized, trained, certified, and proficient per MAJCOM directives.

1.4.1. Flight engineers may carry out the functions stated at paragraph 1.4 from the engineer's position provided a person listed in that paragraph is seated in the pilot's seat.

1.4.2. The proficiency of maintenance personnel authorized to conduct the operations in this chapter will be documented on AF Form 623, **On-The-Job Training Record**, or an automated product. This record must stipulate the maximum power at which the individual is qualified to operate the engines. MAJCOM directives or a supplement to this instruction must specify qualification requirements and procedures for annual proficiency recertification.

1.5. Engine Runup:

1.5.1. Run engines at approved sites.

1.5.2. Fasten seat and shoulder harnesses, set parking brake and chock wheels before engine start. Exceptions to this paragraph are:

- Emergencies.
- Helicopters being operated in unimproved areas.

NOTE:

For engine maintenance ground runs, MAJCOMs will establish aircraft specific procedures for seat belt and shoulder harness requirements. Procedures may deviate from this paragraph.

1.5.3. Do not leave controls unattended when engines are running.

1.5.4. Runup aircraft engines so the propeller wash or jet blast does not pose a safety hazard to personnel, buildings, pavement, stands, vehicles, and other aircraft, particularly those taxiing, taking off, or landing.

1.6. Use of Position Lights. Aircraft position lights must be on from just before engine start until engine shutdown. The following aircraft are exempt:

- and C-21 aircraft during daylight hours.
- Jet aircraft in approved sound suppressers.

1.7. Use of Radios. Operators must obtain approval from ground control or tower, if such facilities are available, before engine start. The Air Force exempts emergency situations or authorized flights. If the aircraft radios are inoperative, obtain the approval through alternate means.

1.7.1. Monitor ground control or tower frequency, if available, during the engine runup. If the aircraft radios are inoperative, either a person who does have contact with the tower, or crash, fire, rescue personnel, must monitor the runup.

1.7.2. At airfields where ground control or tower do not operate continuously, establish radio contact with base operations, base command post, maintenance job control, or other responsible agency, prior to engine start. The contacted agency must have immediate access to the base fire department and, when possible, the secondary crash net.

1.8. Engine Runup of Rotary Wing Aircraft:

1.8.1. Only a qualified rotary wing pilot may conduct engine start and runup on helicopters that require rotor rotation.

1.8.2. Maintenance personnel qualified as per paragraph 1.4 may operate helicopter engines on a helicopter that has a system in use, such as a rotor brake, that does not allow the rotors to turn.

Section 1C—Taxi**1.9. Taxi Procedures:**

1.9.1. Personnel authorized to taxi fixed wing aircraft are:

- Rated pilots.
- Student pilots checked out on type or under the supervision of a qualified instructor pilot.
- Flight engineers who have completed "hands on" training to a satisfactory level for both day and night operations, and have received a taxi check from an instructor pilot.

- Maintenance personnel authorized as per MAJCOM directives.

1.9.2. The flight engineer training specified in paragraph 1.9.1 must include proper use of normal and emergency braking systems, throttles, aircraft controls, checklists, radios, egress systems, fire extinguishing systems, and an understanding of control tower light signals.

1.9.3. The evaluation pilot administering aircraft taxi checkout to flight engineers must certify or recertify the qualifications by recording them on an AF Form 8, **Certificate of Aircrew Qualification**, or an automated product.

1.9.4. Flight engineers must recertify annually, unless MAJCOMs require it more frequently. Annual recertification requirements are the same as for initial certification.

1.10. Manning Requirements. Aircraft requiring two pilots for flight must have both seats occupied by qualified personnel during taxi.

1.11. Taxi Distances:

1.11.1. Do not taxi beyond taxiway hold lines, or within 100 feet of an active runway if there are no hold lines, unless previously cleared by the tower or ground control.

1.11.2. Do not taxi an aircraft within 25 feet of obstructions without wing walkers monitoring the clearance between aircraft and obstruction. Locally based aircraft are exempt when fixed taxi routes are marked, and the obstruction is as follows: a permanent structure, a same model aircraft in specifically designed parking spots, or support equipment no closer than 10 feet from the wing tip. Support equipment shall be located in appropriately designated areas.

1.11.3. Do not taxi aircraft closer than 10 feet to any obstacles. This restriction is waived under the following circumstances:

- During contingency operations when compliance would restrict the mission.
- Operating from alert, readiness, or protective shelters. A plainly visible centerline must be painted along the exit path. A marshaller must be used.
- Operating locally based aircraft from parking spots specifically designed for those aircraft. Parking spots shall be spaced to allow a minimum 10' wing tip clearance between aircraft and will have clearly marked taxi routes. Support equipment required for each spot shall be placed in designated and marked locations. A marshaller must be used.

NOTE:

These clearance criteria can only be assured at US Air Force installations.

1.12. Taxiing of Rotary-Wing Aircraft. Only a qualified helicopter pilot, or student helicopter pilot under supervision of a qualified helicopter instructor pilot, may taxi a rotary-wing aircraft.

Section 1D—Towing

1.13. Rules for Personnel Engaged in Towing Operation:.

1.13.1. Personnel involved in towing operations shall receive instruction in their required duties.

1.13.2. After completion of their training, tow personnel will demonstrate their knowledge to a qualified maintenance supervisor. The supervisor will enter the qualification on AF Form 623 or automated product.

Chapter 2

AIRCRAFT MARSHALING

2.1. Standard Marshaling Signals for the Air Force. (See attachments 1 and 2.) All ground and aircrew personnel must use these signals to direct and control movement and operation of aircraft on the ground. MAJCOMs will ensure that all ground and aircrew personnel who are or could be directly involved with aircraft movement are tested on their knowledge of marshaling signals. Test personnel within 30 days of:

- Reporting for duty following permanent change of station, or
- After their first assignment to duties requiring their knowledge of marshaling signals.

2.1.1. Document successful test completion on AF Form 623, or an automated product.

2.2. AF Visual Aid (AFVA) 11-224, *Aircraft Marshaling Signals*. AFVA 60-1 shows marshaling signals identical to those in attachments 1 and 2. Display this visual aid where maintenance and flight related operations take place. Suitable locations are aircraft maintenance work areas and flight line buildings frequented by ground and aircrew personnel.

2.3. Aircraft Marshalers. Aircraft marshalers provide hand signals to personnel taxiing or operating aircraft on the ground.

2.3.1. Transient aircraft marshalers will wear the uniform described in 2.3.2. Uniform consistency is necessary to ensure flying personnel of one nation can readily identify aircraft marshalers of other nations. Individuals directly involved in fueling, defueling, and servicing liquid oxygen systems shall not wear the marshaler's uniform. Concurrent Servicing Supervisors are exempted.

2.3.2. The uniform is a sleeveless garment of fluorescent international orange. It covers the shoulders and extends to the waist in the front and back. Wear this garment over the basic uniform prescribed for transient alert personnel.

2.3.3. The orange garment may be marked with numbers on the front and back, at the discretion of the installation commander.

2.3.4. During daylight hours, marshalers may use high visibility paddles. Self-illuminating wands are required at night.

2.4. Records Disposal. Dispose of records according to AFMAN-37-139.

Larry L. Henry, maj General, USAF
Acting DCS/Plans and Operations

Attachment 1

VISUAL MARSHALING SIGNALS

A1.1. Pilots will initiate all signals regarding the operation of aircraft systems, for example, speed brakes, flaps, etc. The marshaler (crew chief) will repeat the given signal when it is safe to operate the aircraft system. **NOTE:** Pilots must make sure taxi speeds allow the ground marshaler or signal person to keep their proper position.

A1.2. When giving visual signals, the pilot's hands must be in clear view of the marshaler. Specific signals are:

A1.2.1. "OK." Thumbs up.

A1.2.2. Trim Set for Take Off. Pilot forms "T" with hands.

A1.2.3. Safety Pin Check. Pilot must display seat pin before requesting removal of chocks. Marshalers must display ground safety pins before stowage.

NOTE:

Aircraft with technical order procedures that differ are exempt.

A1.2.4. Armament Switches Off, Safe, or Normal Position. This signal is used during arming and de-arming aircraft. The pilot must verify that all armament switches are turned off and then place hands in clear view of the ground crew.

A1.2.5. Pilot Heat Check. The pilot grasps extended forefinger of left hand with right hand. The marshaler will give "OK" signal if the system is operating properly.

A1.2.6. Nose Gear Steering Check. The pilot, with hands at head level, palms toward marshaler, moves hands back and forth simulating movement of rudder pedals. After positive acknowledgment from marshaler, the pilot performs the steering check. The marshaler will give the "OK" signal if nose gear moves properly.

A1.2.7. Probe Check. The pilot raises arm upward and in a position resembling a probe. The marshaler will give the "OK" signal if no malfunction is observed.

A1.2.8. Clearance To Release Drag Chute. The pilot extends arm outward and down; alternately clenches and opens hand. The marshaler will:

Respond with an affirmative nod if all is clear to release chute, and

Give the "OK" signal when drag chute separates from aircraft.

A1.2.9. Clear To Lower Canopy. The pilot pats top of helmet; the marshaler pats top of head.

A1.2.10. Flight Refueling Door Check. The pilot places hand on top of helmet with palm down and fingers forward, then raises and lowers forward portion of hand to simulate door opening and closing. The marshaler repeats the signal to indicate clear for safe opening or closing; then gives an "OK" signal if operation is proper. **NOTE:** Pilots may use other signals, similar to marshaler's signals in attachment 2, as necessary.

CAUTION: Do not extend arms or hands outside the cockpit on aircraft configured with clam-shell-type canopies unless an uplock device has been inserted.

Attachment 2

INTERNATIONAL AIRCRAFT MARSHALING SIGNALS

A2.1. Where possible, signals in this attachment comply with North Atlantic Treaty Organization (NATO) Standardization Agreement 3117, Air Standardization Coordinating Committee Air Standard 44/42A, the International Civil Aviation Organization (ICAO), and Federal Aviation Administration (FAA) signals.

A2.2. The marshaller will signal facing the aircraft while standing in one of these positions:

Fixed-Wing Aircraft. The marshaller will stand forward of the aircraft and remain in full view of the pilot.

Helicopters. The marshaller will stand in full view of the pilot (the pilot is usually on the right side of the helicopter).

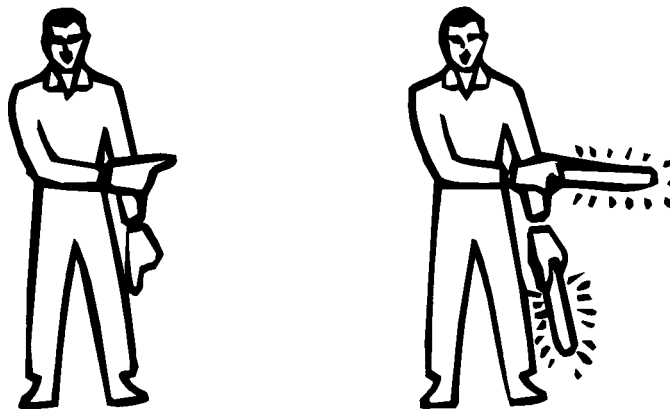
A2.3. During night operations, the marshaller will use a pair of same color light wands. During surface taxiing or parking, the pilot must stop immediately if one or both of the marshaller's wands fail.

Part A--Ground Movement Signals for all Aircraft (Signals 1 Through 47)

1. PROCEED TO NEXT MARSHALER

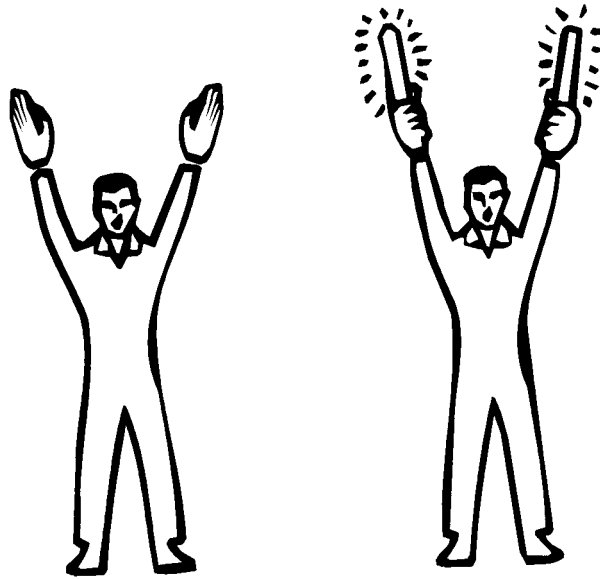
Right or left arm down, other arm moved across the body and extended to indicate direction of next marshaller.

NATO signal shows both arms extended at shoulder level pointing to next marshaller.



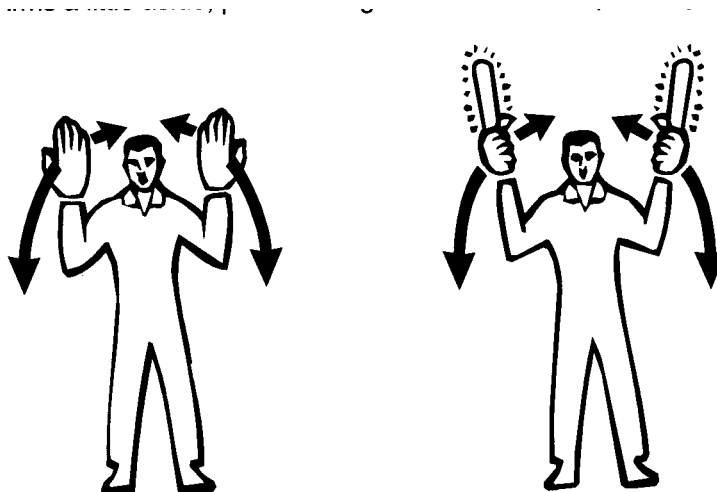
2. THIS MARSHALER

Arms above head in vertical position with palms facing inward.



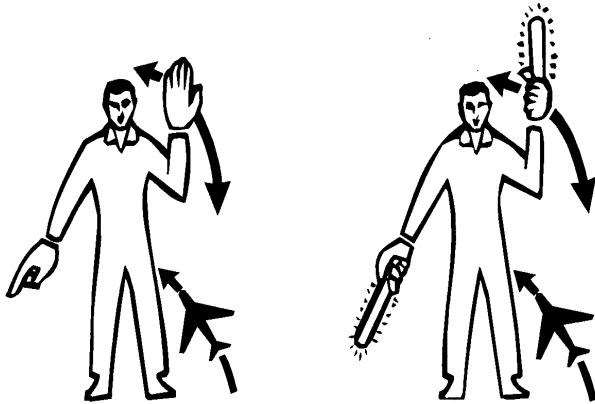
3. MOVE AHEAD

Arms a little aside, palms facing backwards and repeatedly moved upward-backward from shoulder height.



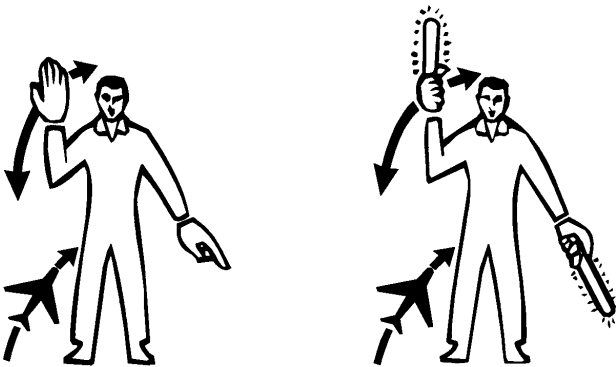
4. TURN TO THE LEFT

Point right arm downward, left arm repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.



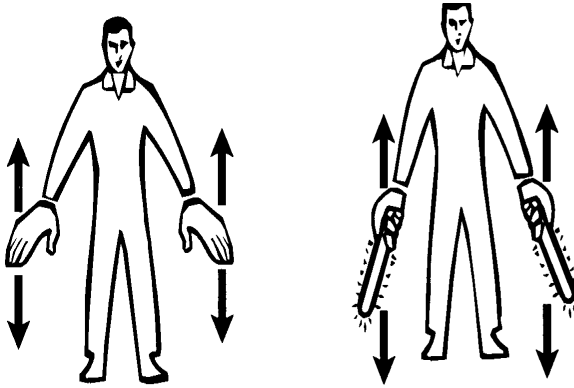
5. TURN TO THE RIGHT

Point left arm downward, right arm repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.



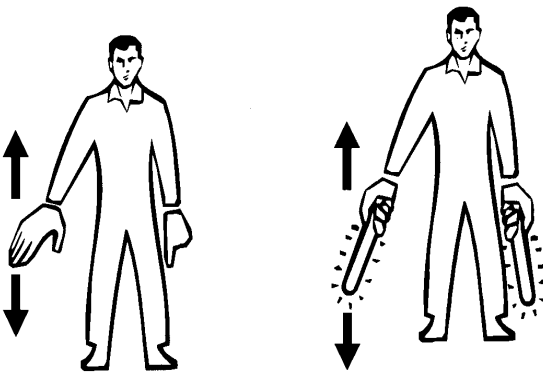
6. SLOW DOWN

Arms down with palms toward ground, then moved up and down several times.



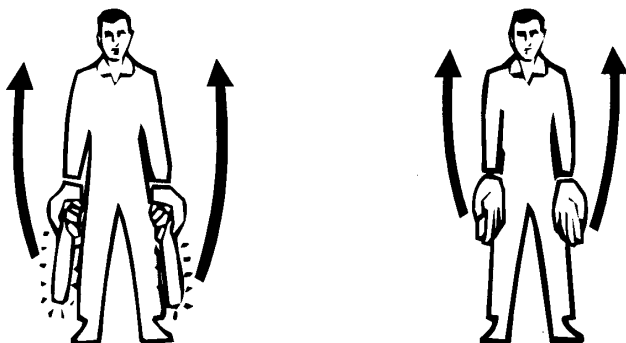
7. SLOW DOWN ENGINES(S) ON INDICATED SIDE.

Arms down with palms toward ground, then either right or left arm waved up and down indicating that left or right side engines respectively should be slowed down.



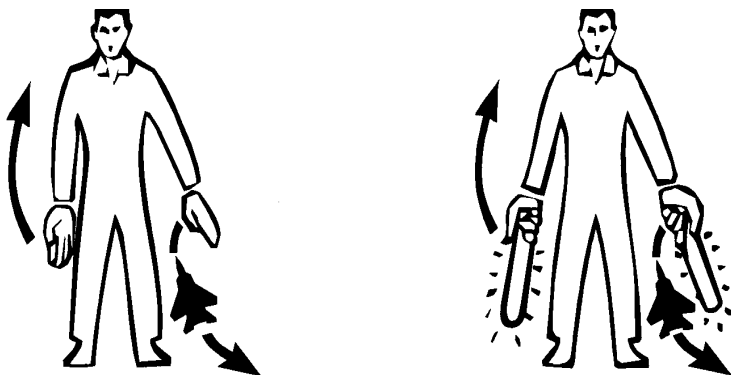
8. MOVE BACK

Arms by sides, palms facing forward, arms swept forward and upward repeatedly to shoulder height. Do not bend arms at the elbow.



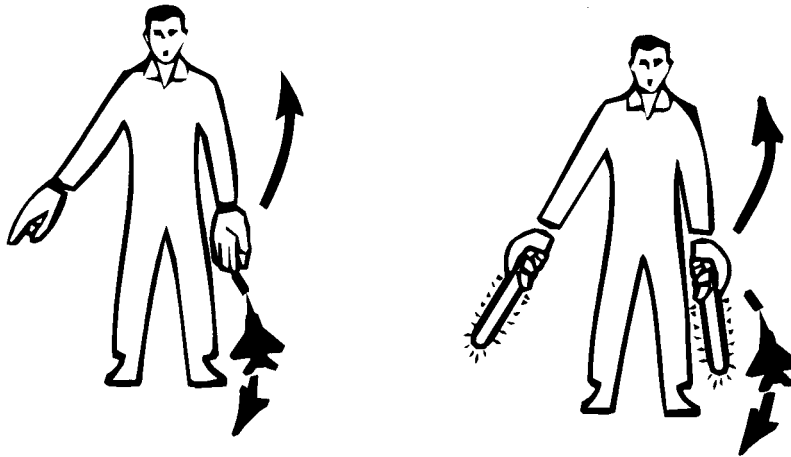
9. TURN WHILE BACKING--TAIL TO THE RIGHT

Point left arm down. The right arm by side, palm facing forward, is swept forward and upward repeatedly to shoulder height. Do not bend arm at the elbow.



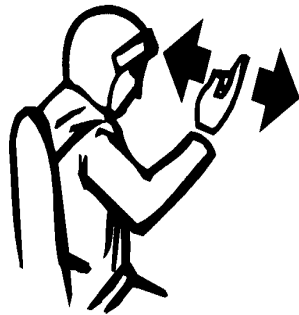
10. TURN WHILE BACKING--TAIL TO THE LEFT

Point right arm down. The left arm, by side, palm facing forward, is swept forward and upward repeatedly to shoulder height. Do not bend arm at the elbow.



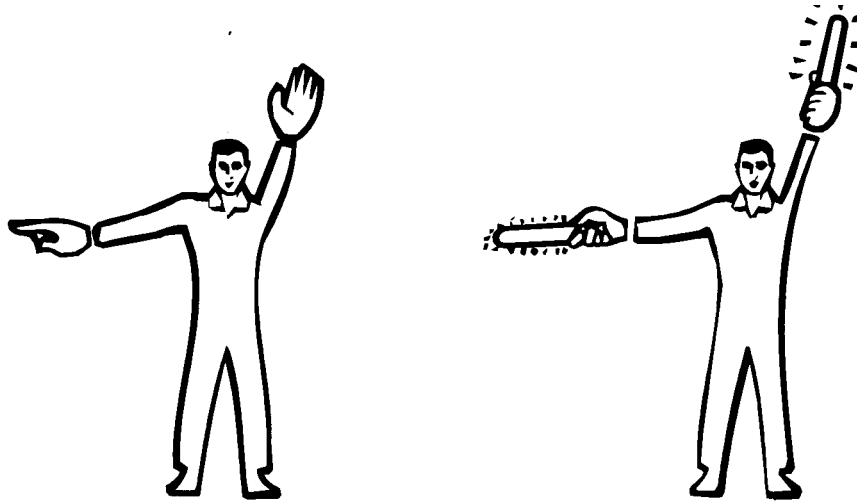
11. CLEARANCE FOR PERSONNEL TO APPROACH AIRCRAFT

A beckoning motion with right hand at eye level.



12. PERSONNEL APPROACH THE AIRCRAFT

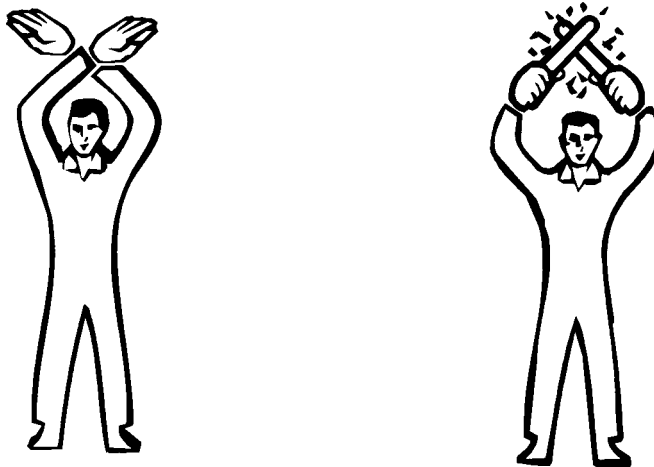
Left hand raised vertically overhead, palm towards aircraft. The other hand indicates to personnel concerned and gestures towards aircraft.



13. STOP

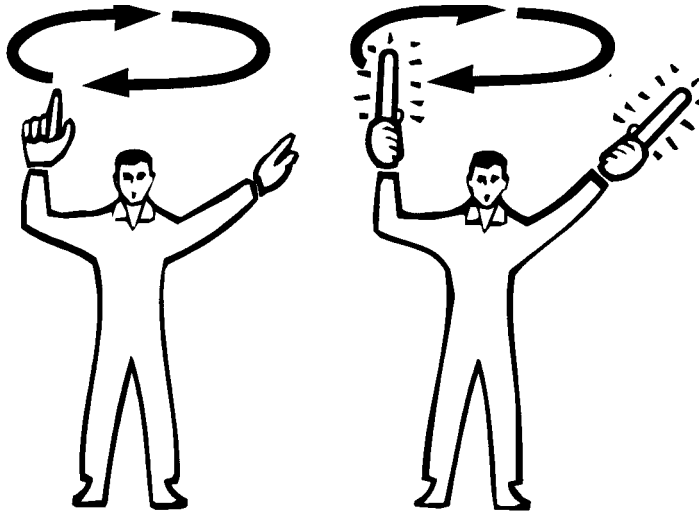
Arms crossed above the head, palms facing forward.

This is the FAA signal for emergency stop.

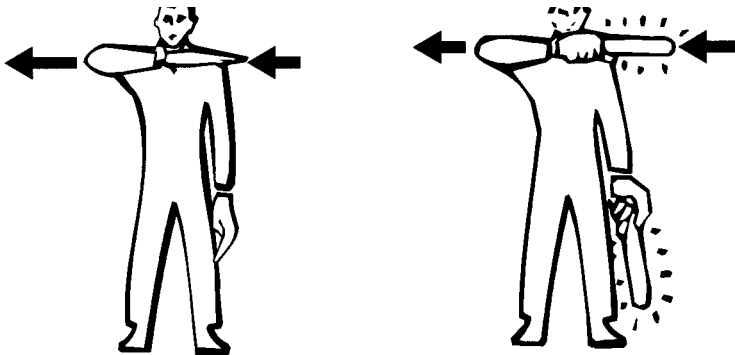


14. START ENGINE(S)

Circular motion of right hand at head level with left arm pointing to engine. ICAO and NATO: Number of fingers extended on left hand indicates engine to be started.

**15. CUT ENGINE(S)/ROTOR**

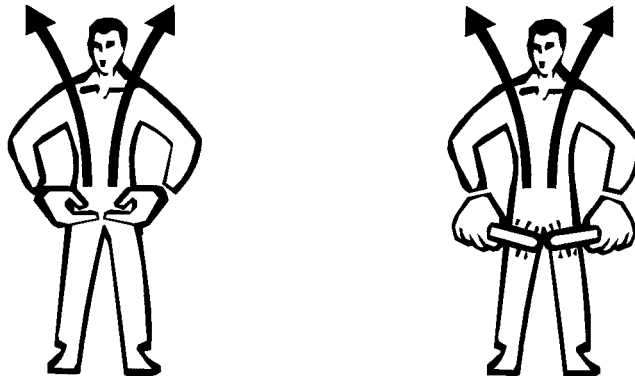
Either arm and hand level with shoulder, hand moving across throat, palm downward.

**16. ABANDON AIRCRAFT**

Marshaler first gives signal to cut engines, followed by signal simulating unfastening seat belt and shoulder straps and throwing them up and off.

No ICAO signal.

No NATO signal.



17. AUXILIARY POWER UNIT--CONNECTED

Hands above head, left first partially clenched, right hand moved in direction of left hand with first two fingers extended and inserted into circle made by fingers of the left hand.

No ICAO signal.

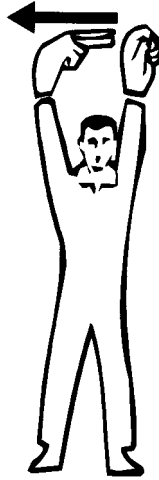


18. AUXILIARY POWER UNIT--DISCONNECTED

18. AUXILIARY POWER UNIT--DISCONNECTED

Hands above head, left first partially clenched, right hand moved away from left hand, withdrawing first two fingers from circle made by fingers of the left hand.

No ICAO signal.



19. EXTERNAL STARTING AIR--CONNECTED

Hands above head, left hand cupped, right fist fully clenched, right fist moved in direction of left hand and inserted into cup made by left hand.

No ICAO signal.

No NATO signal.



20. EXTERNAL STARTING AIR--DISCONNECTED

Hands above head, left hand cupped, right first moved away from left hand withdrawing fist from cup made by left hand.

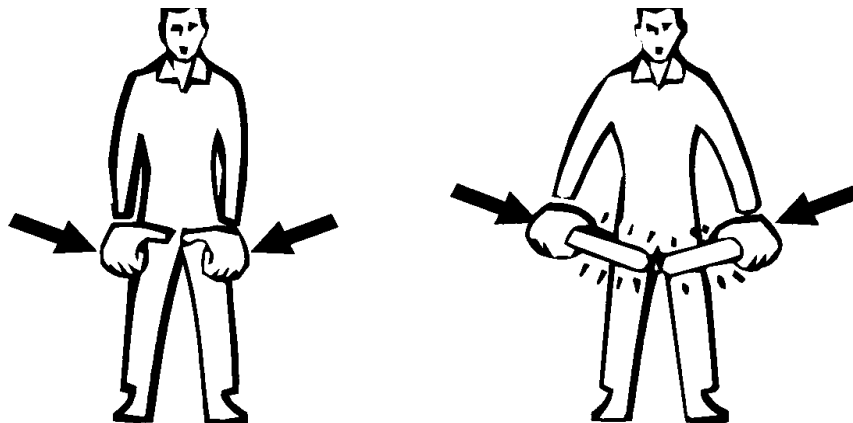
No ICAO signal.

No NATO signal.



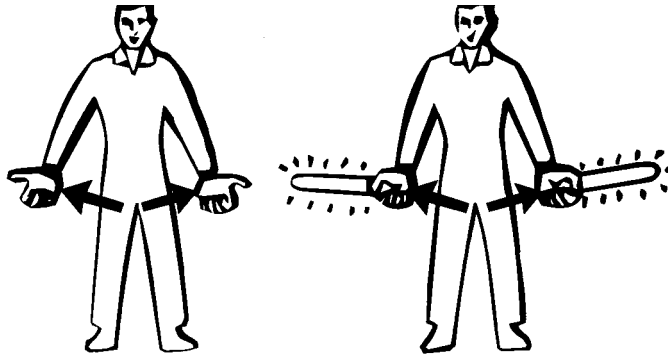
21. CHOCKS--INSERTED

Arms down, fists closed, thumbs extended inwards, swing arms from extended position inwards.



22. CHOCKS--REMOVED

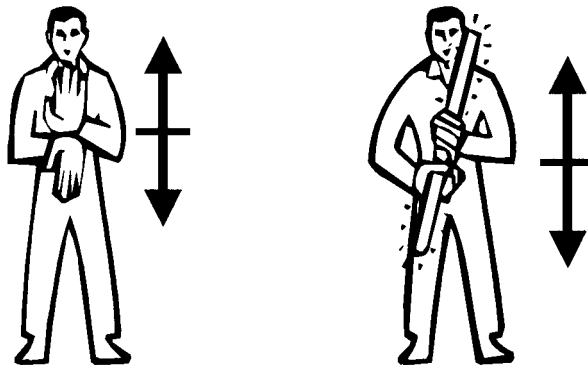
Arms down, fists closed, thumbs extended outwards, swing arms outwards.



22. LOWER WING FLAPS OR FLAPS ARE EXTENDED

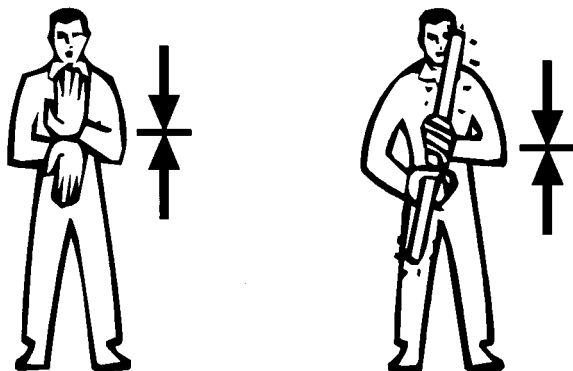
23. LOWER WING FLAPS OR FLAPS ARE EXTENDED

Hands in front, palms together horizontally then opened from the wrist.

**24. RAISE WING FLAPS OR FLAPS ARE UP**

Hands in front, horizontally, with palms open from the wrists, then suddenly closed.

No ICAO signal.

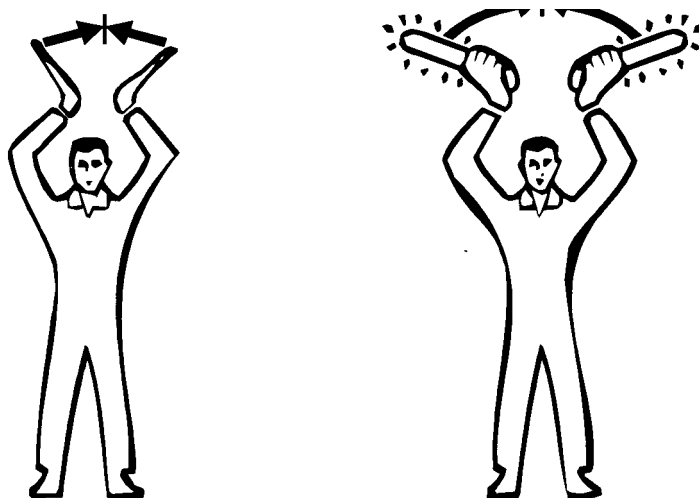


25. TAIL WHEEL/NOSE WHEEL--LOCK

Hands together overhead, palms open from the wrists in a vertical V, then suddenly closed.

No ICAO signal.

NATO signals tail wheel lock/engage nose gear steering.



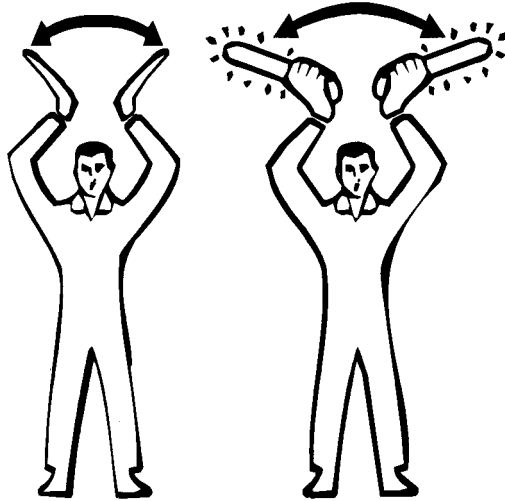
26. TAIL WHEEL/NOSE WHEEL--UNLOCK

26. TAIL WHEEL/NOSE WHEEL--UNLOCK

Hands overhead, palms together then opened from the wrists to form a vertical V.

No ICAO signal.

NATO signals tail wheel unlock/disengage nosegear steering.

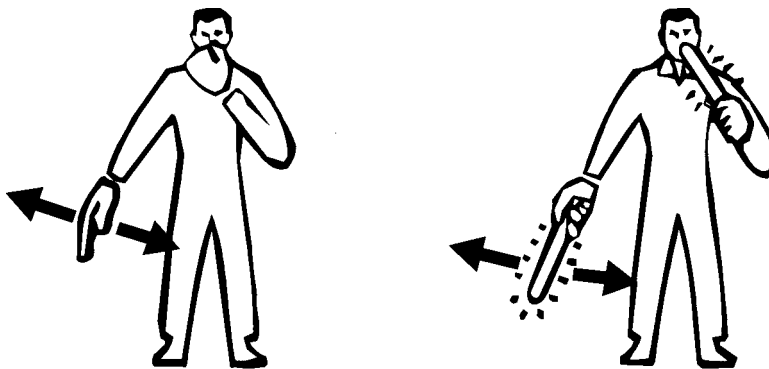


27. TILLER BAR/STEERING ARM IN PLACE

Hold nose with left hand, right hand moving horizontally at waist level.

The affirmative signal immediately following signals means: MAN IS TENDING BAR.

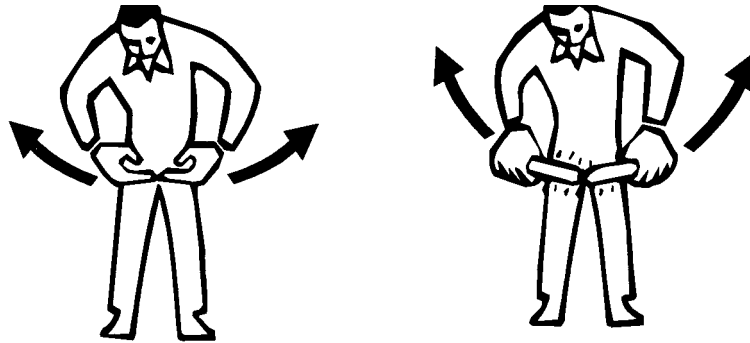
The negative signal immediately following signal means: NO ONE TENDING BAR.



28. WEAPON BAY--OPEN

Body bent forward at the waist, hands held with fingertips touching in front of body and elbow bent at approximately 45 degrees, then arms swing downwards and outwards.

No ICAO signal.



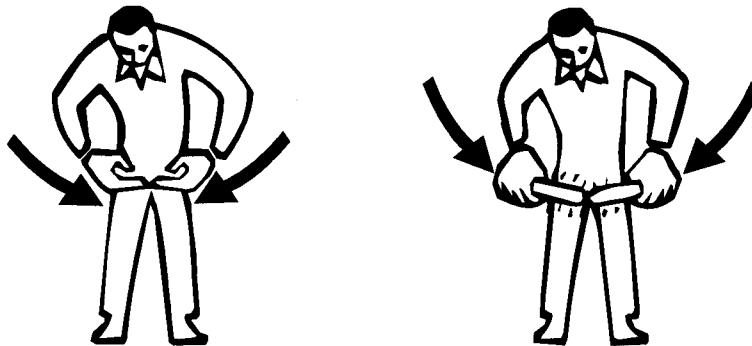
28. WEAPON BAY--CLOSE

29. WEAPON BAY--CLOSE

Body bent forward at the waist and arms extended horizontally, then arms swing downwards and in until finger tips touch in front of the body with elbows bent at approximately 45 degrees.

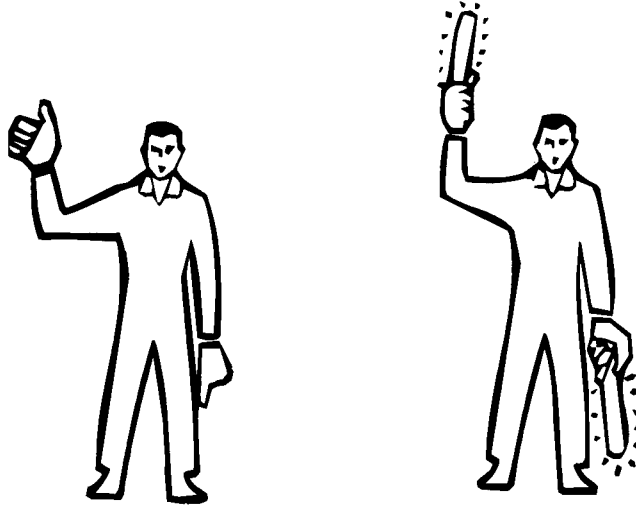
No ICAO signal.

No ICAO signal.



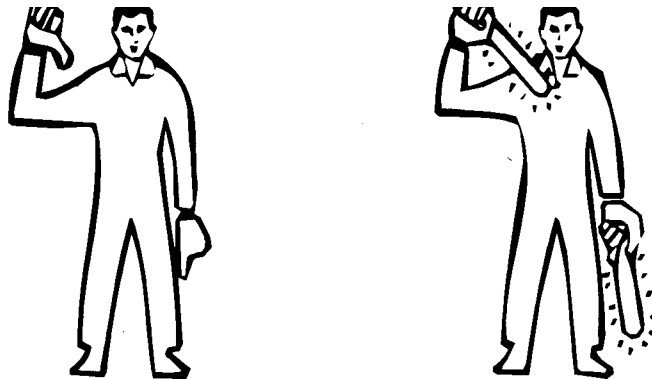
30. AFFIRMATIVE (ALL CLEAR OR "OK")

Hand raised, thumb up.



31. NEGATIVE (NOT CLEAR)

Arm held out, hand below waist level, thumb turned down.

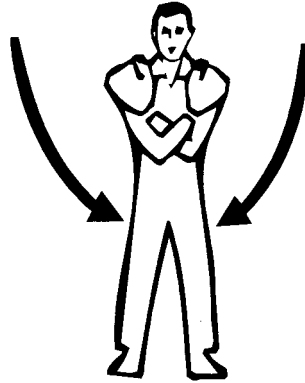


32. FOLD WINGS/HELICOPTER

BLADES/SWEEP WINGS AFT

Arms straight out at sides, then swept forward and hugged around shoulders.

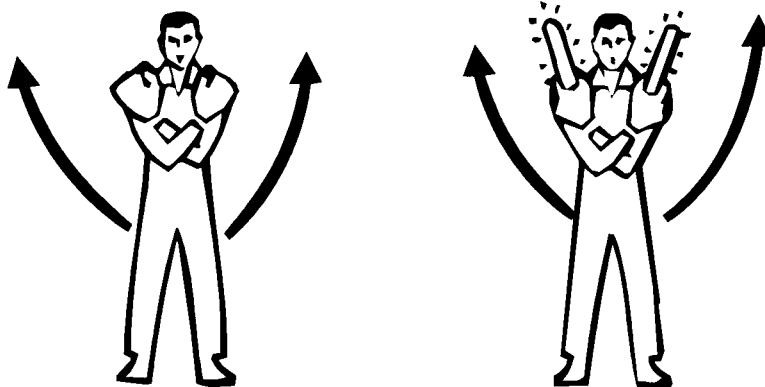
No ICAO signal.



33. SPREAD WINGS/HELICOPTERBLADES/SWEEP WINGS FORWARD

Arms hugged around shoulders, then swept straight out to the sides.

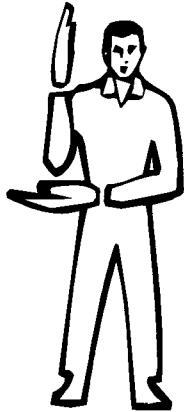
No ICAO signal.



34. LOCK WINGS/HELICOPTER BLADES

Hit right elbow with palm of left hand.

No ICAO Signal.



35. UP TAIL HOOK

Right fist, thumb extended upward, raised suddenly to meet horizontal palm of left hand.

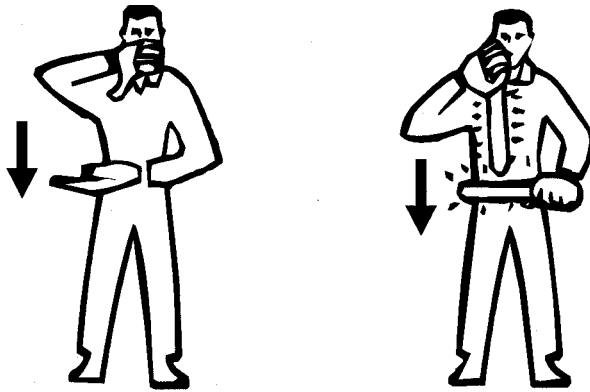
No ICAO signal.



36. DOWN TAIL HOOK

Right fist, thumb extended downward, forward suddenly to meet horizontal palm of left hand

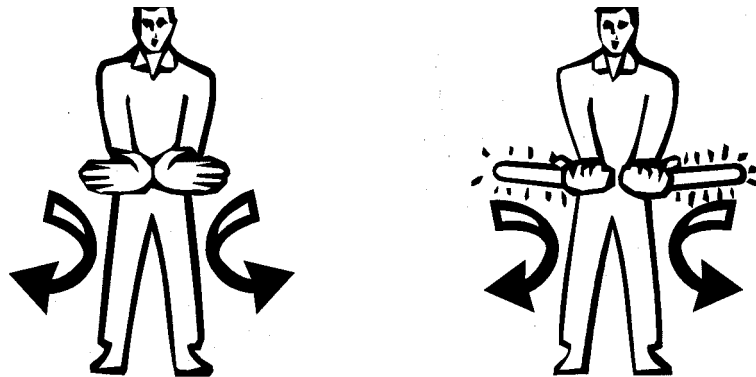
No ICAO signal.



37. OPEN AIR/SPEED BRAKES OR--AIR/SPEED BRAKES ARE OPEN

Hands in front, palms together vertically, then opened from the wrists.

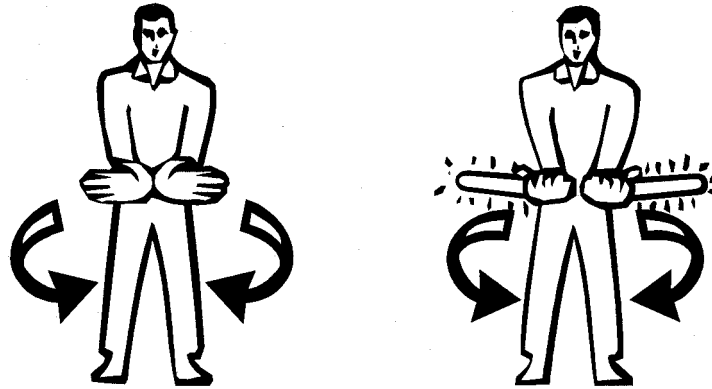
No ICAO signal.



38. CLOSE AIR/SPEED BRAKES OR AIR/SPEED BRAKES ARE CLOSE

Hands in front, vertically with palms open from the wrists, then suddenly closed.

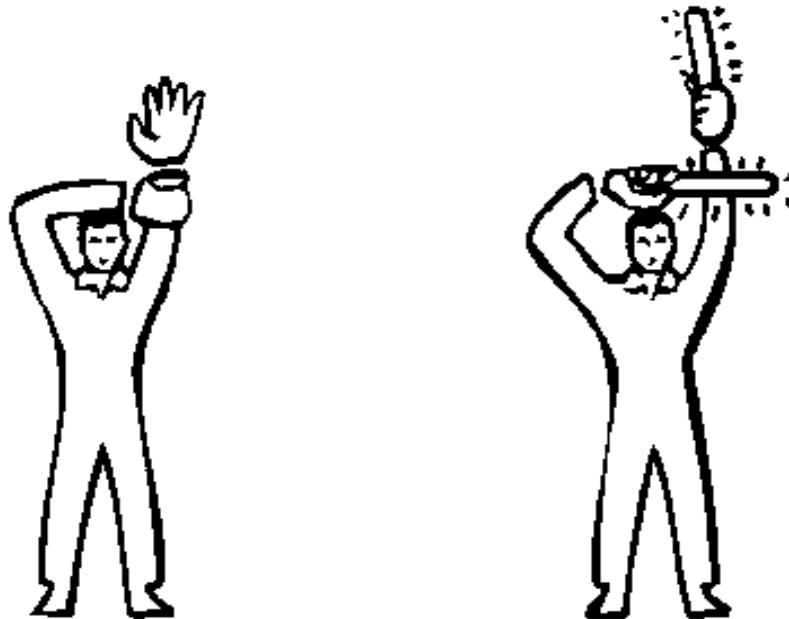
No ICAO signal.



39. DOWN LOCKS/LANDING GEAR PINS INSTALLED

With arms above head, the right hand clasps left forearm.

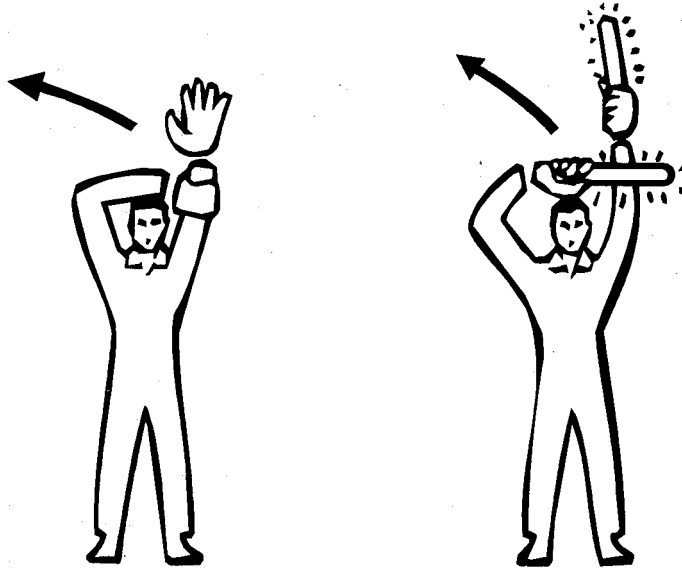
No ICAO signal.



40. DOWN LOCKS/LANDING GEAR PINS REMOVED

With arms and hands clasped as in "IN-STALLED" position, the right hand unclasps the left forearm.

No ICAO signal.

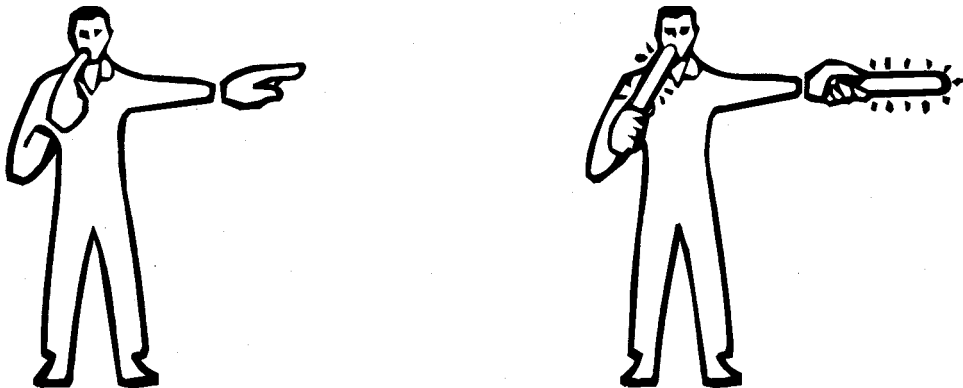


41. ENGAGE NOSE GEAR STEERING

Point to nose with index finger while indicating direction of turn with other index finger.

No ICAO signal.

NATO signal shows hands together overhead, opened from the wrists in a V, 3 then closed suddenly. (See Signal 25.)

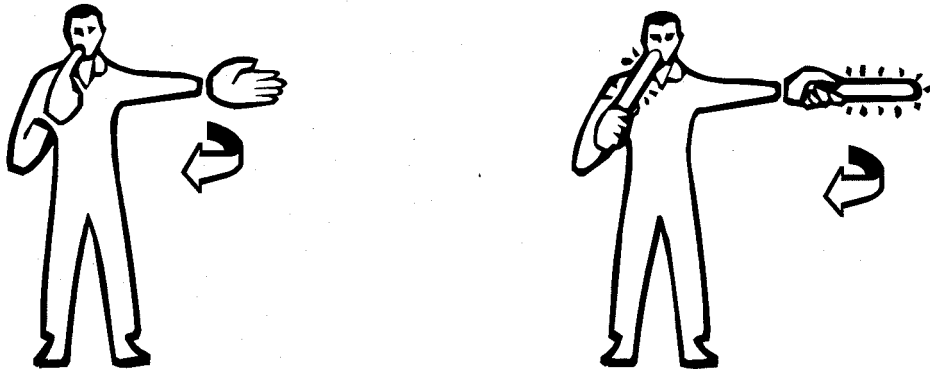


42. DISENGAGE NOSEGEAR STEERING

Point to nose with index finger, lateral wave with open palm of other hand at shoulder height.

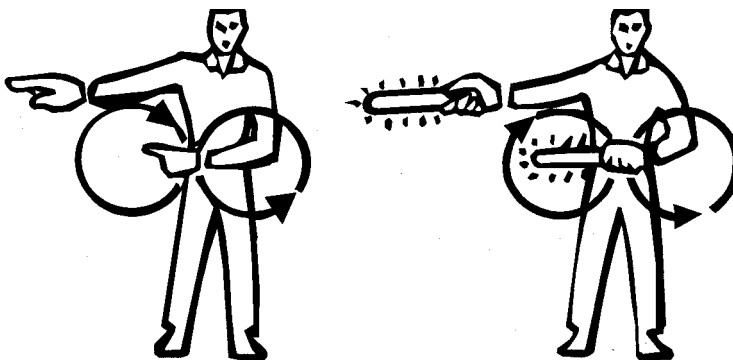
No ICAO signal.

NATO signal shows hands overhead, palms together then hands opened from wrists to form a V, wrists remain together. (See Signal 26.)



43. FIRE IN THE ENGINE OR APU

Make rapid horizontal figure-of-eight motion at waist level with either arm, pointing at source of fire with the other.

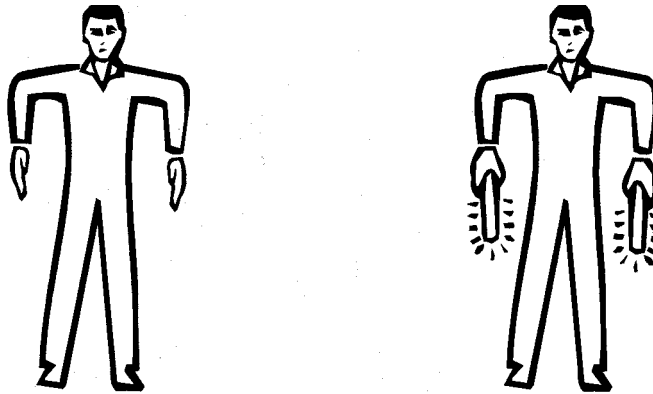


44. HOT BRAKES

Arms extended with forearm perpendicular to ground. Palms facing body.

No ICAO signal.

No NATO signal.

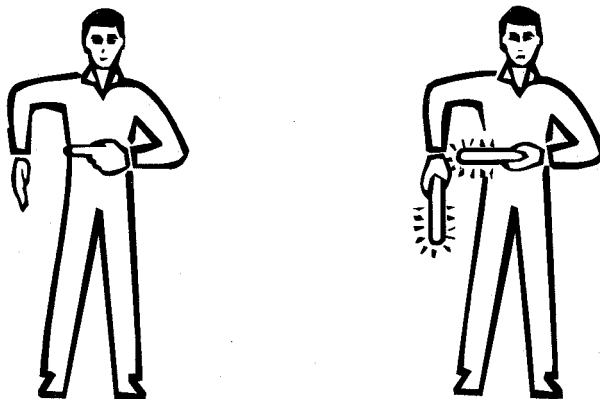


45. HOT BRAKES--LEFT SIDE

Arms extended with forearm perpendicular to ground. Gesture indicates left side.

No ICAO signal.

No NATO signal.

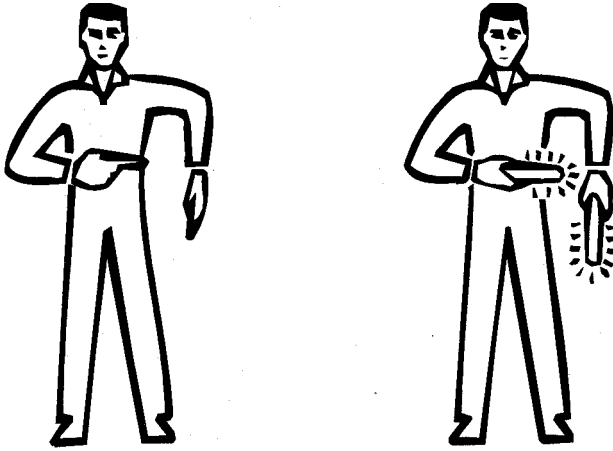


46. HOT BRAKES--RIGHT SIDE

Arms extended with forearm perpendicular to ground. Gesture indicates right side.

No ICAO signal.

No NATO signal.

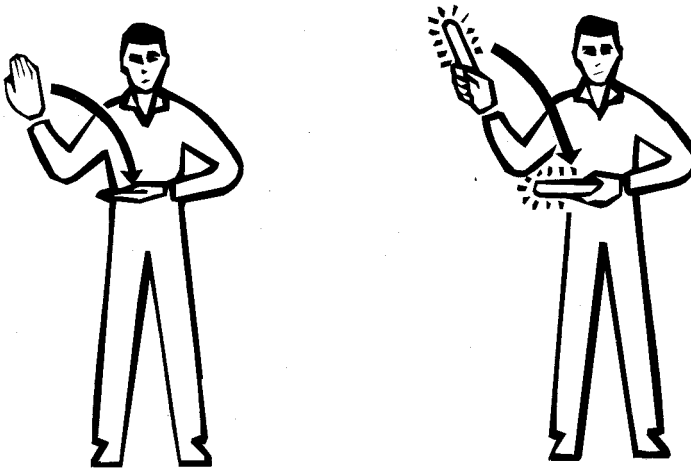


47. FEATHER/FUEL SHUT OFF (PROPELLER AIRCRAFT ONLY)

Make a chopping motion with one hand slicing into the flat and open palm of the other hand. Number of fingers extended on left hand indicates affected engine.

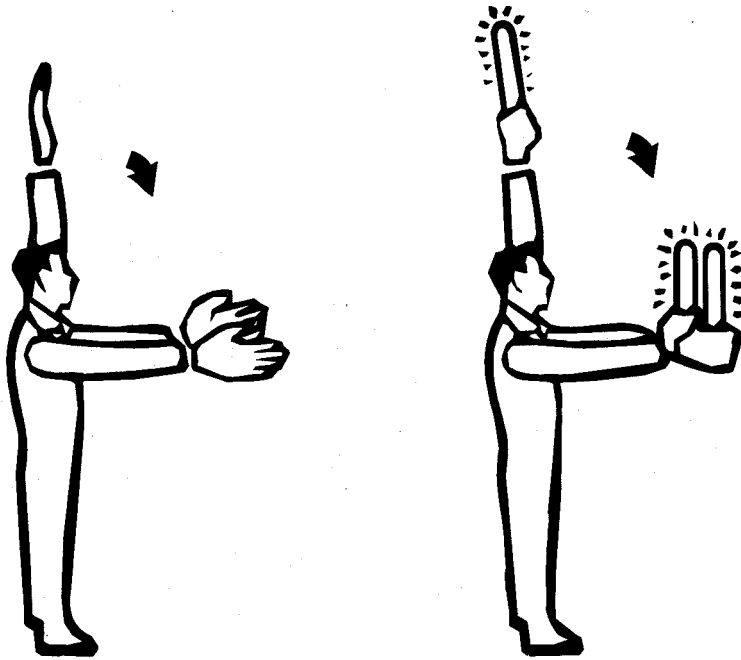
No ICAO signal.

No NATO signal.



48. LANDING DIRECTION

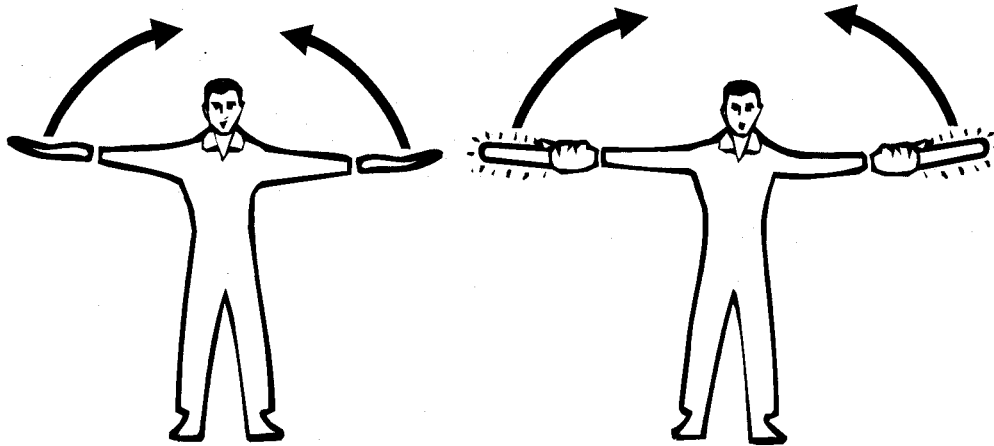
Marshaler turns and faces toward point where aircraft is to land, the arms are lowered repeatedly from a vertical position to a horizontal position, stopping finally in the horizontal position.



49. VERTICAL MOVEMENT--MOVE UPWARD

Arms extended horizontally sideways beckoning upwards, with palms turned up.

Speed of movement indicates rate of ascent.

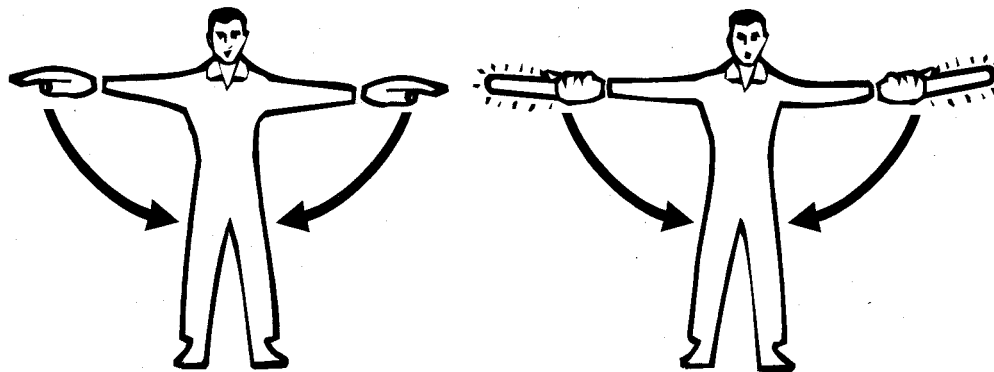


50. VERTICAL MOVEMENT--MOVE DOWNWARD

Arms extended horizontally sideways

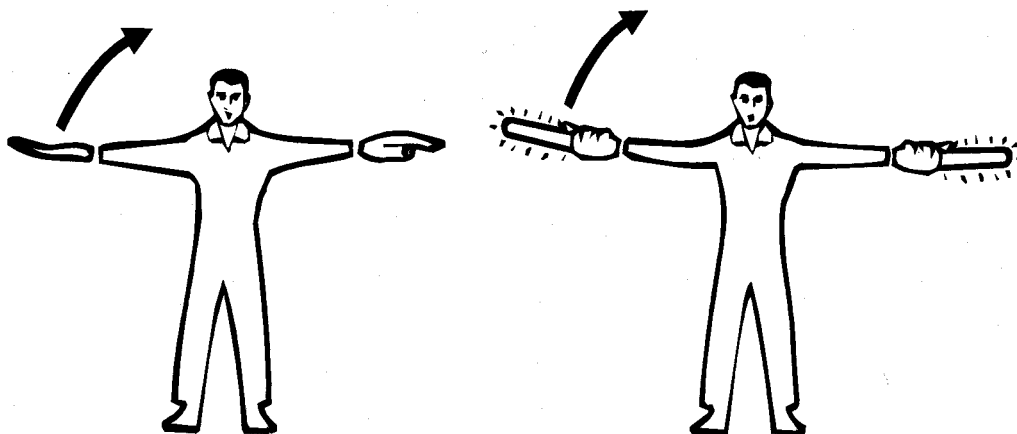
beckoning downwards with palms turned

down. Speed of movement indicates rate of descent.



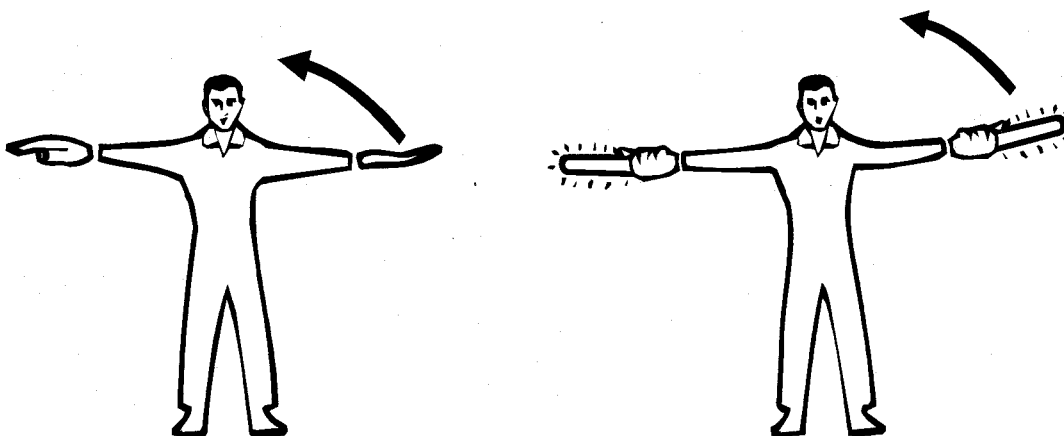
51. HORIZONTAL MOVEMENT--MOVE TO THE RIGHT

Left arm extended horizontally sideways in direction of movement and other arm swung over the head in same direction, in a repeating movement.



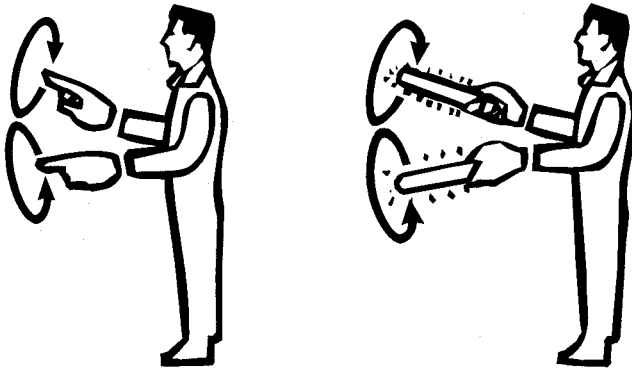
52. HORIZONTAL MOVEMENT--MOVE TO THE LEFT

Right arm extended horizontally sideways in direction of movement and other arm swung over the head in the same direction, in repeating movement.



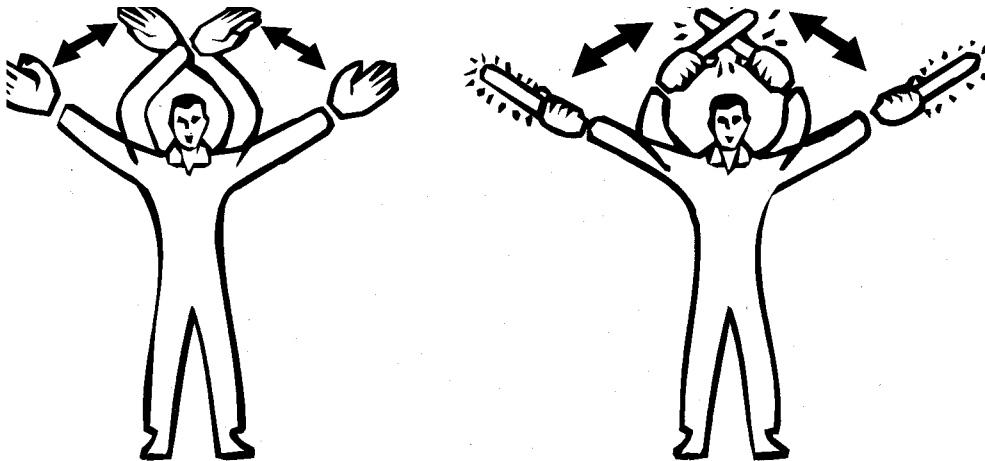
53. LOWER WHEELS

When aircraft approaches with landing gear retracted, Marshaler gives signal by side view of a cranking circular motion of the hands.



54. Wave Off

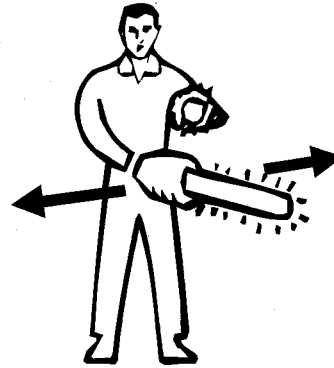
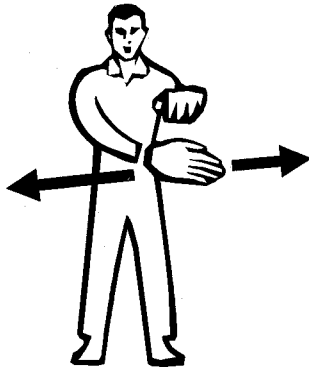
Waving of arms over the head



55. RELEASE LOAD

Left arm extended forward horizontally, fist clenched, right hand making horizontal slicing movement below the left fist, palm facing body.

No ICAO signal.



56. LOAD HAS NOT BEEN RELEASED

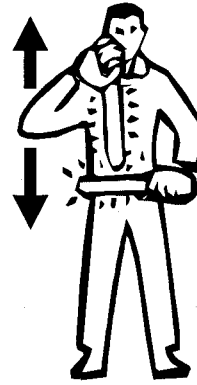
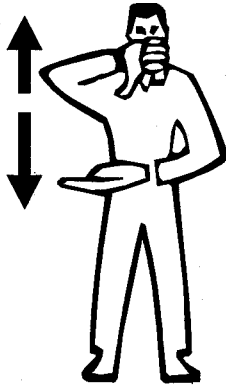
Bend left arm horizontally across chest, with fist clenched, palm downward; open right hand pointing up vertically to center of left fist.



57. DOWN CARGO HOOK

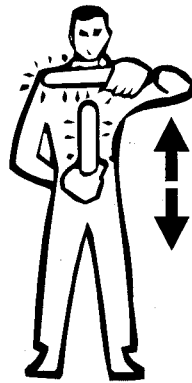
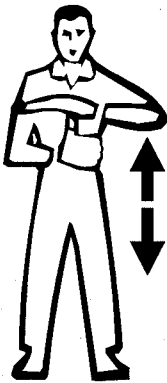
Right fist, thumb extended downward, repeatedly raised and lowered to meet

palm of left hand.



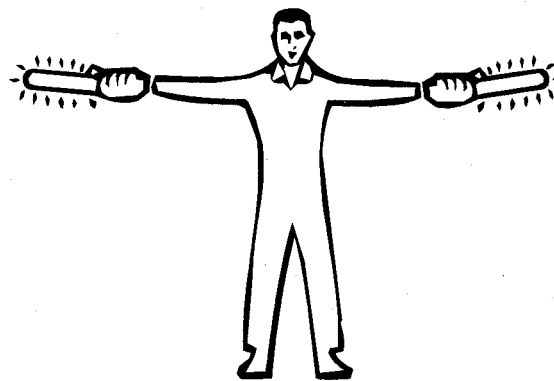
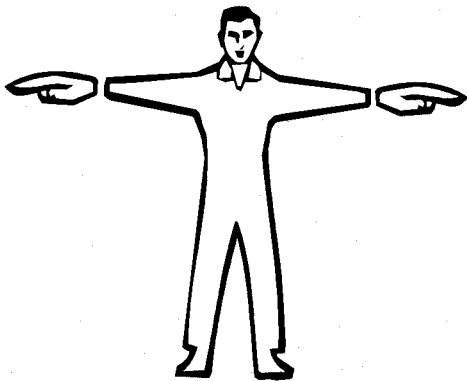
58. UP CARGO HOOK

Right fist, thumb extended upward, repeatedly raised and lowered to meet palm of left hand.



59. HOVER

Arms extended horizontally, palms downward.



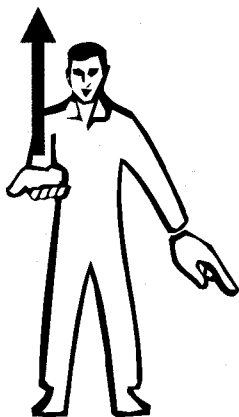
60. SPOT TURN

Left or right hand moving upward and backward, from a horizontal position, to indicate direction of tail movement. Other hand pointing to center of spot turns.

Marshaler must remain in full eye-view with pilot.

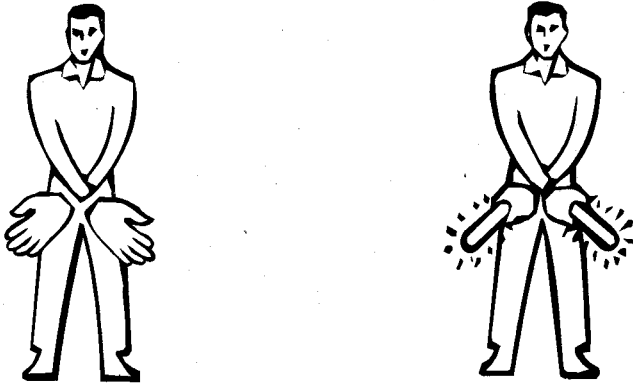
No ICAO signal.

No NATO signal.



61. LAND

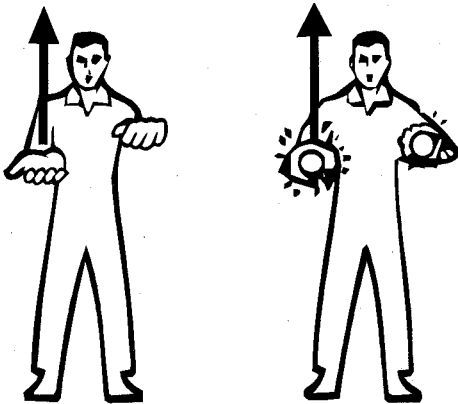
Arms crossed and extended downwards in front of the body.



62. WINCH-UP

Left arm horizontal in front of body, fist clenched, right-hand with palm turned upwards making upward motion.

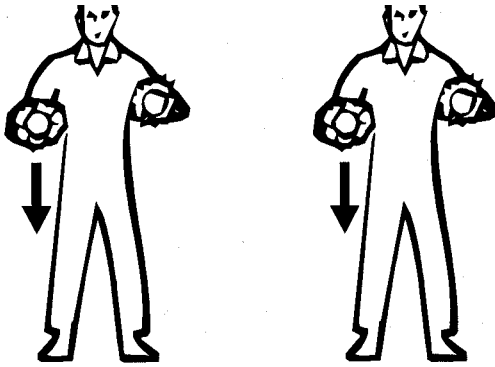
No ICAO signal.



63. WINCH-DOWN

Left arm horizontal in front of body, fist clenched, right hand with palm turned downwards making downward motion.

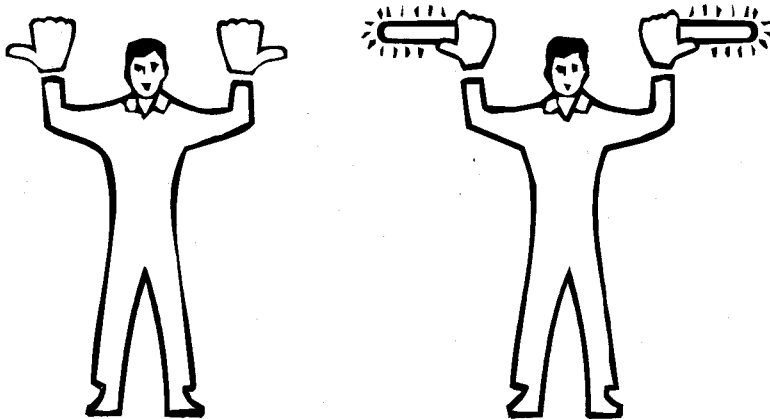
No ICAO signal.



64. DROOP STOPS OUT

Hand above head level, thumbs pointing out.

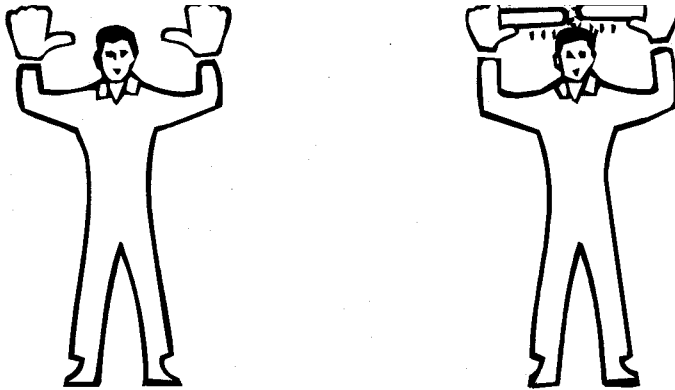
No ICAO signal.



65. DROOP STOPS IN

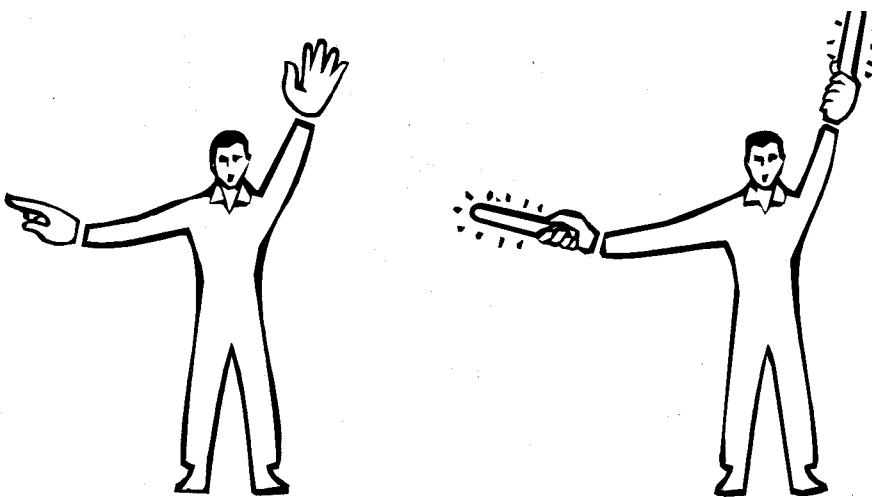
Hand above head level, thumbs pointing in.

No ICAO signal.



66. REMOVE BLADE TIE-DOWNS

Left hand above head, right hand pointing to individual boots for removal.



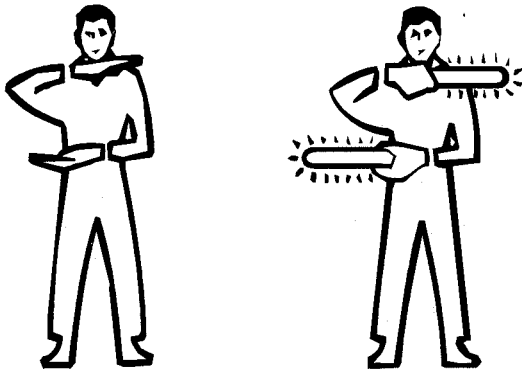
67. WHEELS OR SLING LOAD THIS HIGH

Hands extended before body and palms facing each other.

The bottom hand indicates the ground and the top hand the wheels or bottom of sling load. The distance between the hands will indicate the height of the wheel or bottom of sling load above the ground.

No ICAO signal.

No NATO signal.

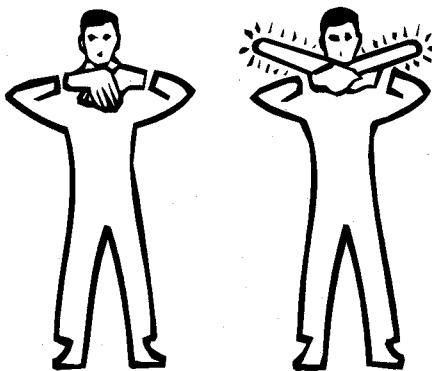


68. CARGO LOAD SECURE

Arms extended forward, elbows flexed, right hand grasping left fist.

No ICAO signal.

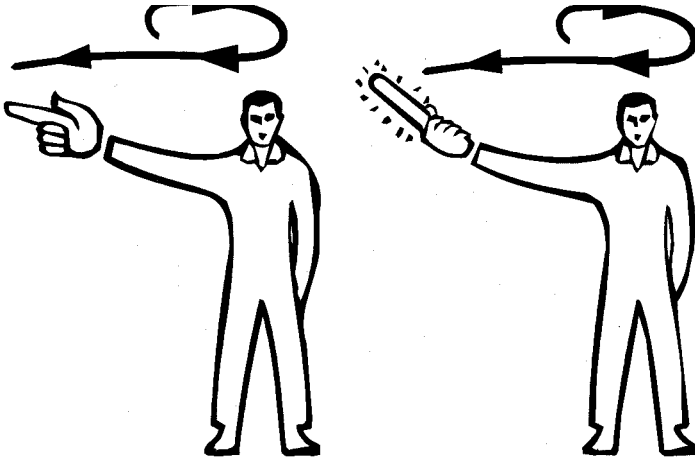
No NATO signal.



69. TAKE OFF THIS WAY (at pilot's discretion)

Marshaler conceals left hand and makes circular motion of right hand over head in horizontal plane ending in a throwing motion of arm towards direction of takeoff.

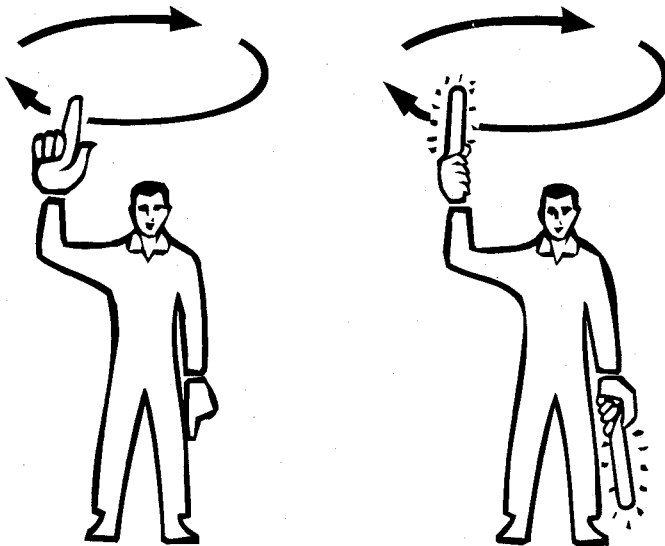
NATO signal for fixed wing only.



70. ENGAGE ROTOR(S)

Circular motion in horizontal plane with right hand above head.

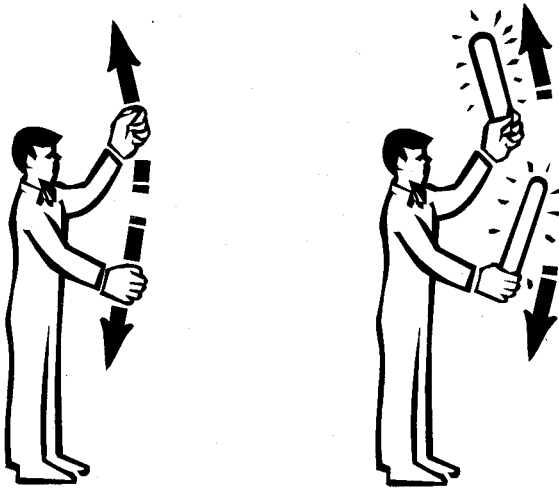
No ICAO signal.



71. HOOK UPLOAD

Hands make a rope climbing motion.

No ICAO signal.

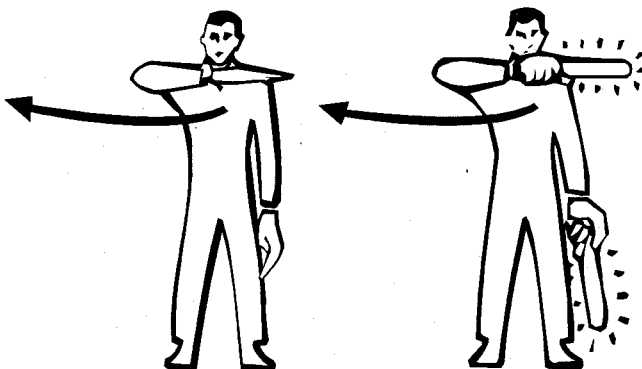


72. SPREAD PYLON

Bend elbow across chest, palm downward.

Extend arm outward to horizontal position,
keeping palm open and facing down.

No ICAO signal.

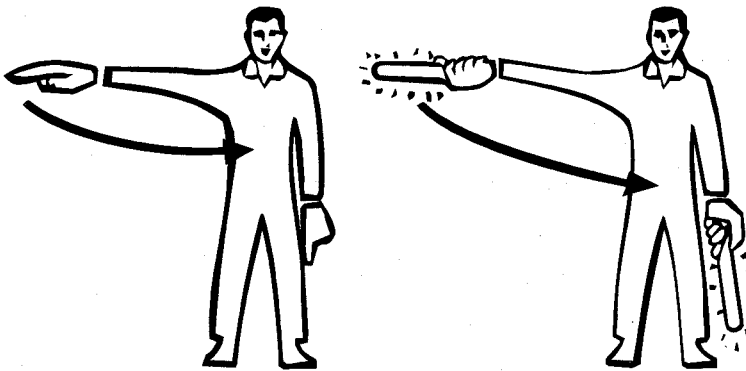


73. FOLD PYLON

Extend right arm horizontally, palm downward.

Bend arm across chest, keeping palm down.

No ICAO signal.



--- CUT CABLE ---

74. CUT CABLE

A signal similar to "Release Load" except that the right hand has the palm of downwards and not clenched. Rapid repetition of right hand movement indicates urgency.

No ICAO signal.

NATO signal shows right arm extended, left arm making horizontal slicing motion.

