

DCA24LA034

OPERATIONAL FACTORS/HUMAN PERFORMANCE

Attachment 8

Hawaiian Airlines Flight Operations Manual [Excerpts]

November 14, 2024

11.2.2 Loading / Removing Order on Weight Restricted Flights

1. For various reasons, a flight may have a weight restriction even if the maximum passenger capacity of the aircraft has not been reached. On weight restricted flights, the Passenger Service Manual lists the order in which passengers and baggage must be loaded or, if necessary, removed.

11.3 Departure Clearance

1. ► When the Pre-Departure Clearance (PDC) is obtained using ACARS, the flight crew must review the clearance to ensure that the clearance is in accordance with the flight plan as well as their mutual understanding of the clearance.
2. ► If the ACARS is inoperative, the departure clearance will be obtained via radio. The clearance must be written down and reviewed by the flight crew for accuracy and understanding. For International operation, the clearance will be annotated on the Master Flight Plan. Whenever possible, the flight crew should listen to the issued ATC clearance as it is being issued. If the clearance is substantially different than the one that is expected, a query must be initiated with ATC and/or Dispatch.
3. To assist ATC, a Departure Clearance will not be requested more than ten minutes before proposed taxi time.

11.4 Pushback and Engine Start

14 CFR: 121.311 121.570 121.571 121.577

11.4.1 Prior to Pushback Considerations (ØA330F)¹

1. ► If the flight deck is left unattended after the completion of the "Before Start" (or equivalent) checklist, then the checklist must be re-accomplished.
2. ► When ready to close the boarding door, the gate agent will ask a cabin crewmember to obtain approval from the flight crew. The cabin crewmember will then ask a flight crewmember, "Is it okay if we close the boarding door?" With the flight crewmember's approval, the cabin crewmember will advise the gate agent. The gate agent will not close the boarding door until receiving approval from a flight crewmember.
3. ► If an armed cabin door needs to be reopened prior to pushback, the Captain and FFA will coordinate which doors will be reopened. After all doors are closed and armed again, the FFA will notify the flight deck that the cabin is secure for pushback.
4. ► When ready for pushback, the FFA must advise the Captain, "cabin secure." After receiving acknowledgment from the Captain, the FFA will close the flight deck door. The Captain must receive and acknowledge the "cabin secure" notification prior to pushback. This notification confirms that:
 - A. All passengers are seated with seatbelts properly fastened
 - B. Passengers seated in exit rows meet all requirements of the exit row Safety Briefing Card.
 - C. Special needs passengers have received their individual safety briefings.
 - D. All cabin baggage has been properly stowed.
 - E. Seatbacks are in the full upright position and tray tables are closed and locked.
 - F. Galley and service equipment is properly stowed.
 - G. Cabin doors are closed and the evacuation slides armed.

1. Content not applicable to the A330F

11.4.2 Circle Check (ØA330F)

1. ► Flight deck to ground service communications should be established prior to departure time. When HA Ground Service personnel are ready for pushback, they will call the Captain on the aircraft interphone and advise that the Circle Check has been completed.
2. The Circle Check is the final series of checks given an aircraft, connections to the aircraft, and its immediate vicinity prior to departure. No aircraft shall be dispatched or towed from any area, for any type of flight, until these checks are completed. Further, if an aircraft returns to the ramp and is subsequently dispatched, or if an aircraft cargo door is opened after the Circle Check has been completed, the Circle Check must be repeated.
3. The Load Master responsible for the flight is charged with the final Circle Check responsibility.
4. The Circle Check shall include the following:
 - A. Confirmation that items have not been loaded above the maximum loading line (or "red line"), which ensures a 2 inch clearance below the compartment ceiling. This occurs during the loading process, and results in the generation of the load closeout.
 - B. All cabin, cargo and service doors checked to make certain they are closed, locked and free of damage. Door handles, where visible, checked to ensure that they are in the locked position.
 - C. Inspect the aircraft tires for obvious F.O.D. damage and the fuel panel latches to ensure the latches are secured when the panel is closed.
 - D. All three pitot tube covers removed.
 - E. Ground equipment not required for engine starting is removed.
 - F. Landing gear lock pins removed.
 - G. Ground power disconnected and removed, unless required for engine start.
 - H. Confirmation that the tow bar has been properly secured at both the aircraft and tow tractor connection points.
 - I. All ramp personnel and passengers are clear of, and a safe distance from the departing aircraft.

11.4.3 Pushback Considerations

1. The aircraft beacon shall be turned on just prior to pushback or whenever an engine is about to be started. The beacon signifies to ground personnel and other aircraft that the aircraft is about to be moved or an engine is running. The beacon shall not be used to signal to the ground crew that the flight crew is "ready."
2. All aircraft cabin and cargo doors will be closed prior to pushback and before starting any engine.
3. If the interphone is INOP, hand signals from the Escort are allowed. However, engines may not be started during the pushback using hand signals until the parking brake is set.
4. Contact Ramp/Ground Control for pushback clearance at all stations unless other local procedures are applicable. Local airport procedures may require that prior to the engines being started at the gate, authorization from aircraft authority (not necessarily ATC) is received.
5. During pushback, the flight crew monitors and communicates with Control Serviceman on the aircraft interphone and secondarily monitors Ramp/Ground Control.
6. HA ground personnel have the primary responsibility for detecting and advising of hazards during aircraft pushback.
7. After the pushback from the gate has begun, additional baggage or cargo will not be loaded unless the aircraft returns to the gate.



8. Engine starting will only be commenced after receiving authorization from the Control Serviceman. Distractions should be avoided during the engine start procedure
9. The flight crew is responsible for ensuring that the aircraft does not start taxiing until the salute (Salute from the Blocks) has been received from the Escort. When ready to taxi, flash the nose taxi light once. The Escort will ensure the area is clear of personnel and equipment and show the pin flag and issue the salute. The crewmember witnessing the salute will return the salute indicating the Captain has accepted full responsibility for aircraft movement. If an issue arises that requires re-establishment of interphone communications, the flight crew will flash the nose taxi light 3 times.

CAUTION

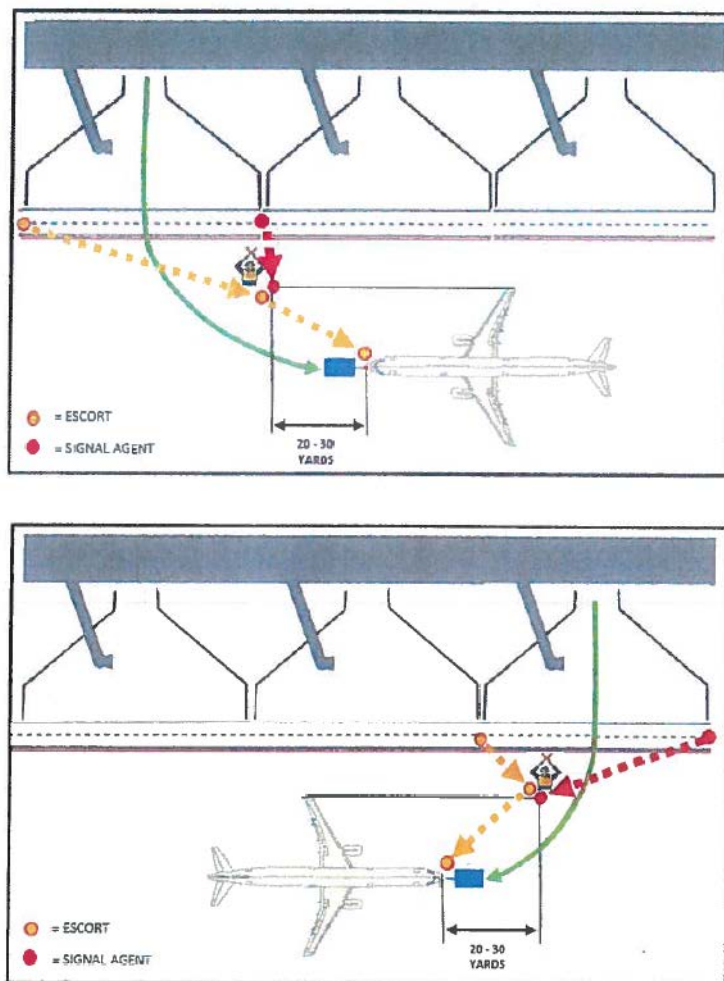
When utilizing external lights during nighttime operations, flight crews must remain highly vigilant anytime personnel are in the vicinity of the aircraft due to the risk of eyesight injury.

10. The salute from the Escort indicates that all aircraft doors are closed, ground equipment is clear, wheel chocks and ground personnel are ready to transfer responsibility for aircraft movement to the Captain.
11. For night or low visibility operations, to enhance visual communications, the flight deck flood lighting should be kept on until the engine starting sequence is complete and the Escort has issued the salute.
12. The use of reverse thrust for rearward movement of the aircraft is not authorized at any time.
13. For specific engine starting procedures, refer to the appropriate Flight Crew Operating Manual.

11.4.3.1 The Pushback Team

1. Control Serviceman
 - A. In charge of the Pushback Team, the Control Serviceman is the tug/tractor driver, performs the Circle Check, and communications with the Flight Deck via the interphone.
2. Escort
 - A. Initially serves as a Wing Walker, monitors engine starts, places and removes nose wheel chock, disconnects tow bar and steering bypass pin. The Escort will display the pin flag and give the flight crew the procedure ending salute.
3. Signal Agent (not applicable to B717)
 - A. Initially serves as a Wing Walker and then positions terminal-side of aircraft in clear view of the flight crew with the "Set Brakes" hand signal until the Escort has issued the salute.
4. Once pushback is complete and brakes set confirmation is made, the towbar will be removed. If the towbar is not to be disconnected (e.g., need for continued pushback), respond with "Standby (and any specific instructions to follow)".
5. The illustrations below depict the intended positioning of the Escort and Signal Agent after wing walking duties. Positioning may vary by airport or terminal requirements. Escorts using a vehicle should park the vehicle in the area of the Signal Agent. Once the interphone has been disconnected, the tug-towbar/tractor will also move to the position of the Signal Agent.
6. [Refer to 11.5 Marshaling Signals](#) for further explanation of hand signals.

Figure 11-3: Pushback and Engine Start



11.4.4 Pushback and Engine Start Callouts (ØA330F)¹

NOTE

Refer to 21.5 Pushback and Engine Start for A330F callouts.

Table 11-1: Pushback and Engine Start Callouts (ØA330F)¹

Removal of Ground Power and/or Air Conditioning		
Event	Flight Deck	Ramp Crew
Prior to scheduled departure.(10 to 15 minutes prior to pushback)		"Ground to Flight Deck."
	"Flight Deck, Go Ahead"	
Flight Crew confirms aircraft status and clears the ramp crew to disconnect external power/ air. Upon confirming the brakes are set, the ramp crew will remove the chocks when ready.		"Confirm brakes are set?, Are You Ready to Disconnect External Power and/or Air?"
	"Brakes set, Standby" (not ready) or "Brakes set, Cleared to Disconnect External Power and/or Air"	
		"Cleared to Disconnect External Power and/or Air"

Circle Check Complete		
Event	Flight Deck	Ramp Crew
		"Ground to Flight Deck."
	"Flight Deck, Go Ahead"	
Tug is connected and the ramp crew confirms the chocks are removed and personnel / equipment is clear of aircraft (circle check).		"Circle Check Complete; Pitot Covers Removed. ⁽¹⁾ Ready for Push."
	"Standby for Push Clearance"	
After pushback clearance is received from ATC/ Ramp control, the parking brake is released.	"Cleared to Release Brakes?"	
		"Release Brakes"
	"Brakes Released, Cleared to Push" (pushback instructions)"	
		"Brakes Released, Cleared to Push" (reads back pushback instructions).
Engine Start Clearance, at the discretion of the ramp crew.		"Clear to Start Engines."
	"Cleared to Start Engines."	
⁽¹⁾ A321 / A330 only for the "Pitot Covers Removed"		

1. Content not applicable to the A330F

Pushback Completed		
Event	Flight Deck	Ramp Crew
Ramp Crew completes pushback		"Push Complete, Set Brakes."
	"Brakes Set" "Cleared to Disconnect Towbar"	
		"Brakes Set, Cleared to Disconnect towbar"
Once engines have been started and parameters are stabilized, the headset can be removed.	"Cleared to Disconnect Headset"	
		"Cleared to Disconnect headset"
The Ramp Crew will standby on the airport terminal side of the aircraft.		Upon confirming the area is clear, the ramp crew will: 1) Display the Pin. 2) Issue a Salute.
The Flight Crew will verify with each other that the Tug/Towbar are disconnected, the Pin is displayed & and Salute is received. The Pilot on the respective side of the aircraft that the ramp crew is on should return the salute to the ramp crew. Full control now transfers to the flight crew. The flight crew performs the After Start Checklist after returning the salute and flashing the nose light once.	Return Salute & Flash taxi light once	
NOTES 1. If an abnormal occurs during pushback, the flight crew and ramp crew will communicate in plain language with each other. i.e., "We have an abnormal indication, stay connected and standby." 2. Once off headset, the Flight Deck can flash the taxi light three times to gain the attention of the ramp crew to re-establish communication. CAUTION: When utilizing external lights during nighttime operations, flight crews must remain highly vigilant anytime personnel are in the vicinity of the aircraft due to the risk of eyesight injury. 3. The flight crew member operating the parking brake must always verbalize its movement so that all flight crew are aware of its status.		

11.4.4.1 Engine Start at the Gate Callouts

1. An engine may be started at the gate due to airport requirements or aircraft requirements (engine start with external pneumatic power). Depending on the situation, the flight crew can either start both engines at the gate, or one engine at the gate. Callouts in this section do not apply to Freighter operations, but a briefing must be accomplished between ground and flight crew to coordinate engine starts before pushback.
 - A. ► Face to Face Briefing
 - 1) Before commencing an engine start at the gate, the Flight Crew and Ramp Crew should perform a face-to-face briefing. This will ensure both parties have a shared mental model on the expected sequence of events (i.e., discussing which engine will be started first, the location of ground equipment, when ground power/air will be disconnected, etc.).
 - 2) Should a face-to-face briefing not occur, the flight crew and ramp crew must conduct a briefing via headset, prior to engine start.

CAUTION

Engine starts using external pneumatic air without a functional interphone available to the Ramp Crew and the Flight Crew are prohibited.

NOTE

Refer to [21.5 Pushback and Engine Start](#) for A330F callouts.

Table 11-2: Engine Start at the Gate Callouts (ØA330F)¹

Ramp Crew Ready for MLG Chock Removal		
Event	Flight Deck	Ramp Crew
Ramp Crew establishes communications with the flight deck.		"Ground to Flight Deck."
	"Flight Deck, Go Ahead"	
The aircraft's parking brake is set to allow safe removal of Main Landing Gear chocks.		"Confirm brakes are set?"
	"Brakes Set"	

Circle Check Complete		
Event	Flight Deck	Ramp Crew
Ramp Crew establishes communications with the flight deck after they remove the MLG chocks.		"Ground to Flight Deck."
	"Flight Deck, Go Ahead"	
Tug is connected and the ramp crew confirms the chocks are removed and personnel / equipment is clear of aircraft (circle check).		"Circle Check Complete; Pitot Covers Removed." ⁽¹⁾
Ramp Crew is ready to set the Air Start unit to deliver pressure required to start an engine.		Ready for Air Start?"
Flight Deck obtains clearance to Start an Engine at the gate from ATC/Ramp control.	"Start Air"	
Engine Start Clearance, at the discretion of the ramp crew. ^{(2) (3)}		"Air Started, Clear to Start Engine ____."
	"Cleared to Start Engine ____."	
Flight Deck notifies ramp crew of a successful engine start and that all external equipment can be disconnected.	"Engine ____ Started, Cleared to Disconnect Air and/or External Power"	
		"Cleared to Disconnect Air and/or External Power"

⁽¹⁾ A321 / A330 only for the "Pitot Covers Removed."

⁽²⁾ B717 starts both engines using external air, ENG 1 then ENG 2.

⁽³⁾ A321 & A330 will normally perform a cross bleed start during taxi.

1. Content not applicable to the A330F

Ready for Pushback		
Event	Flight Deck	Ramp Crew
Ramp Crew establishes communications with the flight deck. "Ready for pushback" indicates all extra equipment has been removed.		"Ground to Flight Deck, Ready for Push"
	"Standby for Push Clearance."	
After pushback clearance is received from ATC/ Ramp control, the parking brake is released.	"Cleared to Release Brakes?"	
		"Release Brakes"
	"Brakes Released, Cleared to Push (pushback instructions)"	
		"Brakes Released, Cleared to Push, (reads back pushback instructions).

Pushback Completed		
Event	Flight Deck	Ramp Crew
Ramp Crew completes pushback.		"Push Complete, Set Brakes."
	"Brakes Set" "Cleared to Disconnect Towbar"	
		"Brakes Set, Cleared to Disconnect towbar"
Once engines have been started and parameters are stabilized, the headset can be removed.	"Cleared to Disconnect Headset"	
		"Cleared to Disconnect headset"
The Ramp crew will standby on the airport terminal side of the aircraft.		Upon confirming the area is clear, the ramp crew will: 1. Display the Pin. 2. Issue a Salute.
The Flight Crew will verify with each other that the Tug/Towbar are disconnected, the Pin is displayed & and Salute is received. The Pilot on the respective side of the aircraft that the ramp crew is on should return the salute to the ramp crew. Full control now transfers to the flight crew.	Return Salute & Flash taxi light once	

NOTES

- If an abnormal occurs during pushback, the flight crew and ramp crew will communicate in plain language with each other. i.e., "We have an abnormal indication, stay connected and standby"
 - Once off headset, the Flight Deck can flash the taxi light three times to gain the attention of the ramp crew to re-establish communication
- CAUTION:** When utilizing external lights during nighttime operations, flight crews must remain highly vigilant anytime personnel are in the vicinity of the aircraft due to the risk of eyesight injury.
- The flight crew member operating the parking brake must always verbalize its movement so that all flight crew are aware of its status.

11.4.4.2 Pushback Without an Interphone

1. Performing a pushback without an interphone uses the same process as a normal pushback but uses hand signals in place of the standard callouts. The flight crew should review Section 11.5 Marshaling Signals prior to commencing the pushback.

A. Face to Face Briefing

- 1) Before commencing a pushback, the Flight Crew and Ramp Crew must perform a face-to-face briefing to confirm both parties have a shared mental model on the expected sequence of events. This includes the hand signals to be used for both a normal pushback and any abnormal event that may occur.
- 2) Normally the ramp crewmember in charge of the pushback will initiate the briefing prior to door closure by entering the flight deck and talking with the flight crew. The flight crew is responsible for ensuring the brief occurs and is satisfied with the coordinated plan.

CAUTION

Engine starts using external pneumatic air without a functional interphone available to the Ramp Crew and the Flight Crew are prohibited.

B. ► Circle Check Complete Signal (ØA330F)¹

- 1) The "Ready for Pushback" hand signal from the ramp crew to the flight crew will serve as positive confirmation that the Circle Check is complete and that pitot tube covers are removed.
2. If hand signals are used, the Flight Crew should acknowledge each signal by repeating it back to the ground crew.

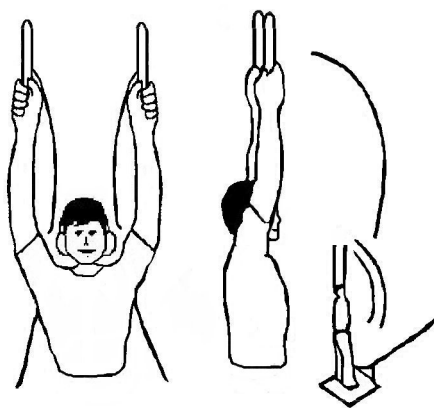
11.5 Marshaling Signals

1. At night and during low visibility operations, lighted wands must be used by the ground crew.

A. Ready to Assume Guidance

- 1) Identifies the parking spot and guideman. The guideman will identify the parking spot by standing at the spot with arms above the head in a vertical position with palms facing inward. Facing the direction from which the aircraft will approach, fully extend both arms and move them in a up and down motion.

Figure 11-4: Ready to Assume Guidance



1. Content not applicable to the A330F

11.4.4.2 Pushback Without an Interphone

1. Performing a pushback without an interphone uses the same process as a normal pushback but uses hand signals in place of the standard callouts. The flight crew should review Section 11.5 Marshaling Signals prior to commencing the pushback.

A. Face to Face Briefing

- 1) Before commencing a pushback, the Flight Crew and Ramp Crew must perform a face-to-face briefing to confirm both parties have a shared mental model on the expected sequence of events. This includes the hand signals to be used for both a normal pushback and any abnormal event that may occur.
- 2) Normally the ramp crewmember in charge of the pushback will initiate the briefing prior to door closure by entering the flight deck and talking with the flight crew. The flight crew is responsible for ensuring the brief occurs and is satisfied with the coordinated plan.

CAUTION

Engine starts using external pneumatic air without a functional interphone available to the Ramp Crew and the Flight Crew are prohibited.

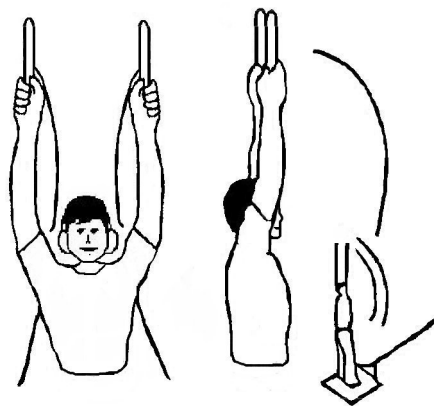
B. ► Circle Check Complete Signal (ØA330F)¹

- 1) The “Ready for Pushback” hand signal from the ramp crew to the flight crew will serve as positive confirmation that the Circle Check is complete and that pitot tube covers are removed.
2. If hand signals are used, the Flight Crew should acknowledge each signal by repeating it back to the ground crew.

11.5 Marshaling Signals

1. At night and during low visibility operations, lighted wands must be used by the ground crew.
- ##### A. Ready to Assume Guidance
- 1) Identifies the parking spot and guideman. The guideman will identify the parking spot by standing at the spot with arms above the head in a vertical position with palms facing inward. Facing the direction from which the aircraft will approach, fully extend both arms and move them in a up and down motion.

Figure 11-4: Ready to Assume Guidance

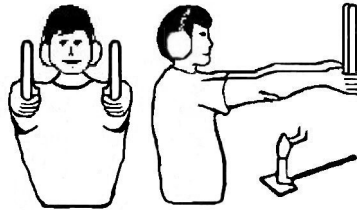


1. Content not applicable to the A330F

B. Aircraft Alignment

- 1) Signifies aircraft alignment with parking spot. After making eye contact with the captain, the guideman will fully extend arms forward with wands pointing upward.

Figure 11-5: Aircraft Alignment



C. Straight Ahead

- 1) Indicates move straight forward or discontinue turn. Arms a little aside, flexed at elbows moving hands up and down from waist to side of head. Speed of movement indicates desired speed.

Figure 11-6: Straight Ahead



D. Slow Down

- 1) Indicates that the taxi speed should be reduced. Arms down with palms toward ground, moved up and down as in straight ahead. Speed of arm movement indicates rate of speed desired.

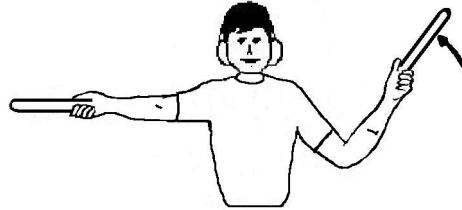
Figure 11-7: Slow Down



E. Turn Left

- 1) Indicates aircraft should be turned to the left. Right arm extended to the side, left arm moving up and down as in straight ahead. Speed of arm movement indicates rate of turn desired.

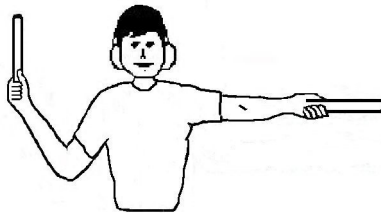
Figure 11-8: Turn Left



F. Turn Right

- 1) Indicates aircraft should be turned to the right. Left arm extended to the side, right arm moving up and down as in straight ahead. Speed of arm movement indicates rate of turn desired.

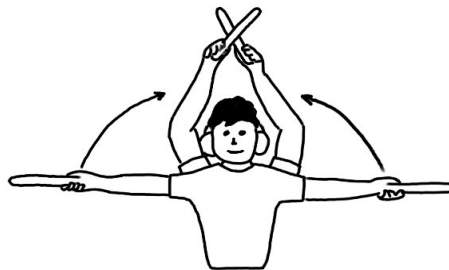
Figure 11-9: Turn Right



G. Normal Stop

- 1) Indicates that the aircraft is approaching the stopping point, and will slowly bring the aircraft to a stop. Executed with arms fully extended to the sides, slowly bring wands together above the head until wands cross. The distance relative to each other serves as a gauge to determine the stopping point.

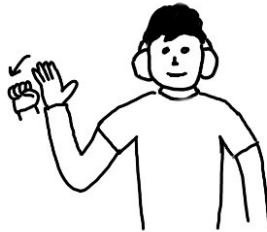
Figure 11-10: Normal Stop



H. Set Brakes

- 1) Advises the flight crewmember to set brakes. Executed with open-palm hand raised just above shoulder height. After ensuring eye contact with the flight crew, the marshaller's hand will close into a fist. The flight crewmember will respond with the thumbs up signal.

Figure 11-11: Set Brakes



I. Chocks In

- 1) Indicates that the aircraft wheel chocks have been inserted. Arms extended to the side in a upward position, wands inward, swing upward from extended position until they touch.

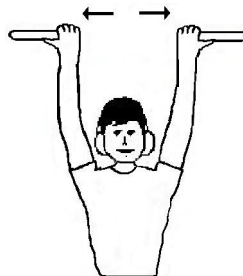
Figure 11-12: Chocks In



J. Chocks Out

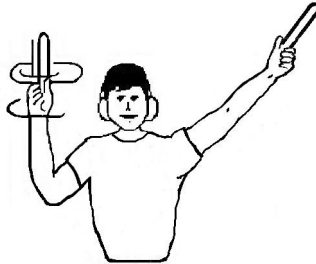
- 1) Indicates that the chocks will be removed. Arms upward, wands outward, swing arms outward in a single jabbing motion. Do not remove chocks until the flight crew has responded with the brakes set signals.

Figure 11-13: Chocks Out



K. Start Engines

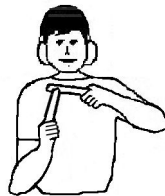
- 1) Indicates that engines are clear to start. Right arm extended to the side bent upward at the elbow, rotating wand at eye level. The left wand pointing at the engine to be started.

Figure 11-14: Start Engines**L. Cut Engines**

- 1) Indicates that engines are clear to shut down. If a particular engine is to be shut down, the guideman will point at the engine to be shut down. Either arm and hand held level with throat, wand drawn across the throat in a slicing motion.

Figure 11-15: Cut Engines**M. Connect/Disconnect Ground Electrical Power Unit**

- 1) Indicates connection or disconnection of Ground Electrical Power Unit. Left wand held horizontally chest height, right wand held upright under left, moved in a downward motions.
- 2) Captain: Use same motion from cockpit, only using clenched right fist under extended fingers of left hand.

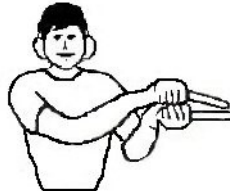
Figure 11-16: Connect/Disconnect Power**N. Connect/Disconnect Pneumatic Air Starter**

- 1) When a pneumatic air start is required, pre-coordinate with ramp personnel the hand signal to be used to request the connection/disconnection of pneumatic air.

O. Flaps Extend/Retract

- 1) Indicates need for flaps to be extended or retracted. Left arm extended and parallel to the ground, wand held horizontally, place right wand under and parallel keeping heel of hands together, alternately form a "V" with wands and return to original position.

Figure 11-17: Flaps Extend/Retract



P. Salute From Blocks

- 1) Indicates area around aircraft is clear, and aircraft is clear to move. Right hand salute.

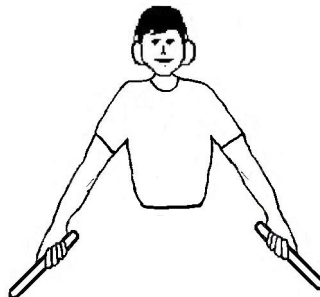
Figure 11-18: Salute From Blocks



Q. Hold Position

- 1) Indicates that the aircraft must be held in its present position. Arms extended to the sides in a downward position with wands pointing to the ground.

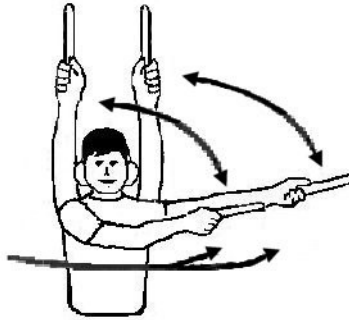
Figure 11-19: Hold Position



R. Proceed To Next Guideman

- 1) Indicates guidance being taken over by next guideman. Both arms pointing at shoulder height in direction of next guideman.

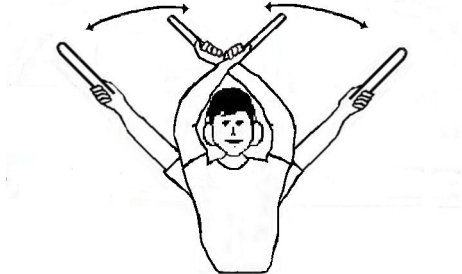
Figure 11-20: Proceed To Next Guideman



S. Emergency Stop

- 1) Indicates that the aircraft is to be stopped immediately due to an emergency condition. Executed with both wands extended overhead, moving rapidly side to side in a waving motion.

Figure 11-21: Emergency Stop



T. Engine Fire

- 1) Indicates that a fire has developed in an engine. Right arm moves in a figure 8 motion. Point at fire location with left wand.

Figure 11-22: Engine Fire



U. Brake Fire

- 1) Indicates fire has developed in a brake. Right arm moves in a figure 8 motion. Point at fire location with left hand at waist level.

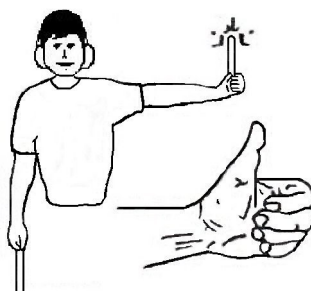
Figure 11-23: Brake Fire



V. Affirmative

- 1) Indicates "YES", "OKAY". Arm extended, fist clenched, thumb up. At night signal by turning wand up. The other wand is held to the side pointing down. The signal will be continuously executed until the Captain acknowledges by returning the affirmative signal.

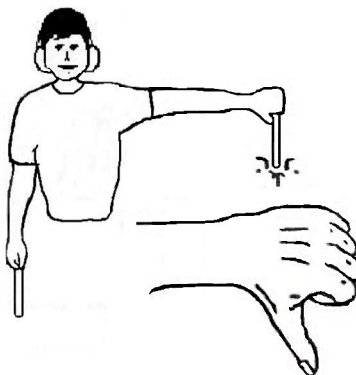
Figure 11-24: Affirmative



W. Negative

- 1) Indicates "NO", "NEGATIVE". Arm extended, fist clenched, thumb down. At night signal by tuning wand down. The other wand is held to the side pointing down. The signal will be continuously executed until the Captain acknowledges by returning the negative signal.

Figure 11-25: Negative



X. Door Open Light

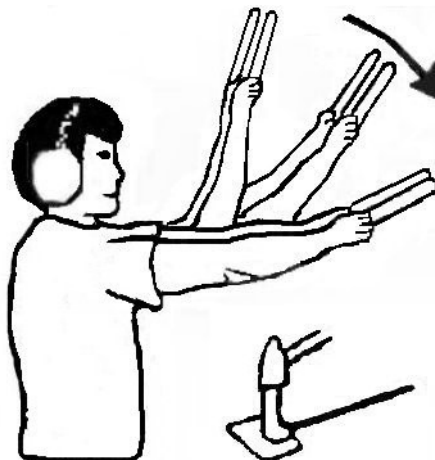
- 1) Indicates that a door warning light is on in the cockpit. Executed by the Captain with left hand clenched and rotating.

Figure 11-26: Door Open Light



Y. Ready For Pushback

- 1) Indication from the Escort to cockpit that Escort is ready to pushback. Hands at eye level with index fingers (or wands) extended pointing rearward with a fore and aft movement.

Figure 11-27: Ready For Pushback**Z. Gate Hold**

- 1) Indicates flight crew not ready for aircraft movement. Executed by Captain with raised hand and open palm, fingers together. Guideperson will acknowledge by returning the same signal.

Figure 11-28: Gate Hold**AA. Brakes Set**

- 1) Indication from the Captain that the parking brakes are SET. Executed by Captain with raised hand, clenched fist, fingers facing outward.

Figure 11-29: Brakes Set

AB. Brakes Off

- 1) Indication from the Captain that the parking brakes are RELEASED. Executed by Captain with raised hand, clenched fist opening to full open palm, fingers spread. Repeated as necessary.

Figure 11-30: Brakes Off**AC. Cleared To Pushback**

- 1) Indication from the Captain that tug driver is "cleared to pushback". A motion similar to a "hitchhiker", initiated by the Captain with closed fist, thumb extended, moving fist side to side.

Figure 11-31: Cleared To Pushback**AD. Wing Walkers**

- 1) Two wing Walkers are required for all gate arrivals or pushbacks.
- 2) Walkers will ensure the pushback area is clear. The Wing Walkers will position themselves in alignment with and at least ten feet back of the wing tips. Wing Walkers will communicate with the Control Serviceman (tug driver) with hand signals.
- 3) ► Control Serviceman (tug driver) shall verify there are two wing walkers in position prior to commencing pushback.

AE. Wing Clear

- 1) Indicates wing clearance adequate, movement of aircraft okay. The affirmative signal will be used.
- 2) Wing Walkers will remain in position and continue to signal until the wings of the aircraft are clear of the ramp roadway and clearly on the taxiway.

11.6 Taxiing

14 CFR: 91.129

MISC: AIM 2-3-5 AIM 4-3-18

1. ▶ A taxi clearance shall be obtained from ATC before brake release, or before entering the movement area, as applicable. The Captain shall make sure that one or both of the flight crew write down the clearance. The crew shall brief the taxi instructions. This can be as simple as a repeat of instructions by the Captain to the First Officer verifying the ATC taxi instructions. Unless operating at a non-towered airport, no aircraft may be taxied on a runway unless an appropriate clearance has been received from ATC.
 - A. When assigned a takeoff runway, ATC will first specify the runway, issue taxi instructions, and state any hold short instructions. Instructions to cross a runway can only be issued one runway at a time. You must have crossed the previous runway before another runway crossing instruction can be issued.
 - B. When issuing taxi instructions to any point other than an assigned takeoff runway, ATC will specify the point to taxi to, issue taxi instructions, and state any hold short instructions or runway crossing clearances if the taxi route will cross a runway.
2. To preclude any misunderstandings, only standard phraseology shall be used in ATC communications. Non-essential tasks shall not be performed while obtaining the taxi clearance. Writing down taxi instructions, especially complex instructions can reduce the vulnerability to forgetting or misunderstanding a part of a taxi clearance. All taxi or runway hold short clearances shall be read back verbatim to ATC.
 - A. If a flight crewmember is uncertain about any ATC instruction or clearance, it shall be immediately verified. Any misunderstanding or disagreement regarding a taxi clearance shall be clarified with ATC before taxiing the aircraft.
3. Prior to the start of taxi, the Captain shall visually check the left side of the aircraft and announce "Clear Left." The First Officer shall visually check the right side of the aircraft and announce "Clear Right."
4. During taxi operations, the airport taxi diagram shall be out and plainly visible to all assigned flight crew. The aircraft's progress shall be followed on the airport taxi diagram to ensure that the taxi clearance is being adhered to. Obtain directions or progressive taxi instructions when taxi route is in doubt or stop aircraft on the taxiway and request ATC clarification if there is confusion regarding aircraft position or ATC taxi clearance. If on a runway, taxi off the active runway if possible and then initiate communications with ATC to regain orientation.
5. When instructed by ATC to "Hold short of Runway ##," the Captain shall stop so no part of the aircraft extends beyond the painted holding position marking.
6. Anytime the aircraft is cleared to hold short of or cross an active runway, the Captain and First Officer will verbally confirm the ATC clearance with each other.
7. Prior to crossing or positioning an aircraft for takeoff, each end of that runway shall be visually cleared by both the Captain and First Officer. Each shall announce that the runway is clear by stating: "Clear (left or right)" as applicable.
8. The flight crewmember operating the parking brake must always verbalize the movement of the parking brake so that all flight crew are aware of its status.

11.6.1 Sterile Flight Deck

1. Flight crew may not engage in any activity during a critical phase of flight which could distract any flight crewmember from the performance of their duties or which could interfere in any way with the proper conduct of those duties.

11.6.2 Flight Deck Duties During Taxi

1. While taxiing in the ramp/gate area, any congested area, where taxi instructions are complex, or during periods of reduced visibility, the flight crew shall devote their full attention to taxiing the aircraft.
2. Aircraft checklists shall not be completed while in any congested ramp area or where a potential ground collision may occur. [Refer to 11.9 Low Visibility Taxi Procedures](#) for guidance on ground operations during low-visibility conditions.
3. When the First Officer's attention is away from scanning outside the aircraft and not able to visually monitor the aircraft's progress, they shall verbally notify the Captain. Any "heads down" activity will be kept to an absolute minimum.

11.6.3 Taxi Thrust / Jet Exhaust Blast

1. Engine thrust must be kept to the minimum necessary for moving the aircraft when starting the taxi.
2. At the start of taxi, set the engine N1 to the lowest required amount and wait for the aircraft to move. It may take a couple of seconds for the engines to develop enough thrust to move the aircraft. During that time, do not continue to increase engine thrust because the aircraft is not moving instantly. This will result in more engine thrust than is required. Rolling forward before turning will avoid the need to use higher thrust settings.
3. The Captain must remain aware of the potential of jet exhaust blast damage to other aircraft, vehicles and equipment as well as injury to persons behind the aircraft.
4. The jet exhaust blast hazard area can extend nearly two football fields beyond the tail of the aircraft and can generate a hurricane force blast that can approach 110 MPH.

11.6.4 Taxi Speed

1. For given conditions, taxi speed, acceleration, braking and cornering shall be accomplished in a manner that provides:
 - A. A safe and comfortable ride for passengers.
 - B. Limits tire, brake and landing gear wear and possible damage.
 - C. Maintains brake temperature within the normal range for the aircraft type.
 - D. Efficient operation of the aircraft, including runway and taxi planning and FCOM procedures such as single engine taxi to limit taxi fuel burn.
2. Speed shall be limited to not more than 30 knots, achieved only on straight, smooth taxiways, and 10 knots in congested areas. Cornering and suboptimal conditions require slower speeds (uneven taxi surface, wet or slippery surface, for example). Use of single engine taxi procedures may help keep taxi speed manageable.

11.6.5 Exterior Lighting

1. The use of aircraft exterior lighting will make the aircraft more conspicuous to vehicles and other aircraft during taxi operations.
2. [Refer to 7.20 Exterior Lights Usage](#) for additional information.

11.6.6 Runway Incursion Prevention Actions

1. The following are recommended practices that enhance situational awareness and safety during airport surface operations.

11.6.6.1 Planning

1. Review the meaning of airport signage, markings, and lighting.
2. Review airfield NOTAMS and current ATIS for any taxiway closures, runway closures, construction activity, or other airfield specific risks.
3. Review the current airport diagrams and planned taxi route, including Hot Spots.
4. Be aware that hold short lines may be located as far as 400 feet from runway edge.
5. Before initial taxi out, or before landing, brief a plan to include location of hold short lines.
6. Plan to complete as many checklist items as possible at the gate before initial taxi.

11.6.6.2 Situational Awareness

1. All pilots display the current airport diagram for immediate reference during taxi.
2. Cross reference the heading indicator to assure turns are being made in the correct direction and you are following the assigned taxi route.
3. Exercise increased awareness when taxiing between parallel runways.
4. Wait until you have exited the runway and you are sure of your taxi clearance prior to beginning an after-landing checklist or non-essential communications.

11.6.6.3 Written Taxi Instructions

1. Write down the taxi clearance
2. Clarify complex or lengthy taxi instructions or request a "progressive taxi".

11.6.6.4 Crew Resource Management (CRM)

1. Use CRM to control crew workload and reduce distractions.
2. Keep the crew in the loop by announcing when going "heads down" and also reporting "back up, are there any changes?"
3. Approaching a clearance limit, verbalize the hold short clearance limit.
4. Prior to crossing any hold short line visually check to ensure there is no conflicting traffic on the runway. Verbalize "clear right, clear left."

11.6.6.5 Communication

1. Adhere to proper radio terminology guidelines set forth [refer to Chapter 13: Approach – Landing](#).
 - A. Be alert to similar aircraft call signs operating on the field.
2. STOP aircraft on the taxiway and request ATC clarification if there is confusion regarding aircraft position or ATC taxi clearance.
3. If you have been holding in position on the runway for more than a reasonable amount of time or upon seeing a potential conflict, contact the Tower.
4. When assigned a departure at an intersection, state "intersection departure" during the clearance read back.

11.6.6.6 Taxi

1. Maintain appropriate taxi speed.
2. Avoid transferring aircraft control at unsafe speeds or in turns.
3. Have a heightened situational awareness of hold short line location when using high speed taxiways or during shorter taxi distances.

11.6.6.7 Exterior Lighting

1. [Refer to 7.20 Exterior Lights Usage.](#)

11.7 Non-Towered Airport Taxi / Takeoff Procedures

MISC: AIM 4-1-9

1. The absence of an operating airport traffic control tower creates a need for increased vigilance on the part of the flight crew while at these airports.
2. If at a non-towered airport, flight crew shall monitor the Common Traffic Advisory Frequency (CTAF) for other aircraft. Before taxiing, a “blind” radio transmission shall be made on the CTAF stating position on the airport, taxi route and intentions.
3. Before taxiing on the active runway for departure, a “blind” radio transmission shall be made stating that the aircraft is taking the runway for departure, the direction of flight, and initial altitude.
4. Flight crew shall not rely solely on the absence of CTAF radio transmissions to determine the absence of other aircraft at the airport or in the traffic pattern. Frequent visual scanning of the taxiways, runways, and approach /departure paths for conflicting traffic is necessary.
5. At a non-towered airport, the aircraft shall be taxied to the departure runway by the shortest practicable route. HA aircraft shall not be taxied on any runway unless that is the only taxi route available.
6. During calm or nearly calm wind conditions, be aware that flight operations may occur on more than one runway at the airport.
7. After departure, continue to monitor the CTAF until 10 NM from the airport. Make a final “blind” radio broadcast stating position, altitude and direction of flight.

11.8 Exceedance of Maximum Taxi Weight

1. If it is determined during taxi that the actual weight of the aircraft is greater than the maximum allowable taxi weight, the Captain shall contact HA Dispatch and Maintenance Control for guidance.

11.8.1 Overweight for Takeoff / Not for Taxi

1. If the aircraft maximum weight is over that specified for takeoff, but not for taxi, the Captain will delay the takeoff to burn down fuel to the maximum allowable takeoff weight.