

FIRELINE HANDBOOK

CHAPTER 10—AIR OPERATIONS

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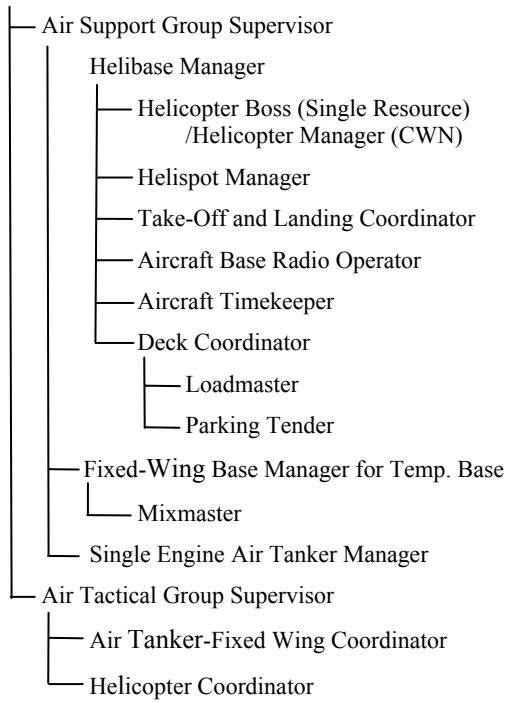
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ORGANIZATION CHART

AIR OPERATIONS BRANCH DIRECTOR



POSITION CHECKLISTS**Air Operations Branch Director (AOBD)**

The Air Operations Director reports to the Operations Section Chief and is primarily responsible for preparing the air operations portion of the Incident Action Plan, for implementing its strategic aspects, and for providing logistical support to aircraft operating on the incident.

Critical Safety Responsibilities:

- Obtain briefing from Operations Section Chief.
- Request declaration (or cancellation) of Temporary Flight Restriction.
- Coordinate airspace with other incidents and local or regional airspace coordinators.
- Apply risk management practices to all aviation operations.
- Ensure that agency aviation policies are established and followed.
- Establish procedures for emergency reassignment of aircraft on the incident.
- Inform the Air Tactical Supervisor of the air traffic situation external to the incident.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).

- Participate in preparation of the Incident Action Plan.
- Provide Incident Action Plan and Air Operations Summary Worksheet (ICS Form 220) to the Air Support Group and Fixed Wing Bases.
- Determine coordination procedures and coordinate with appropriate Operation Section personnel (Branch, Division, etc.).
- Orders and releases incident aircraft as needed.
- Supervise all Air Operations activities associated with the incident.
- Schedule approved flights of non-incident aircraft in the restricted airspace area.
- Coordinate the use of incident aircraft for non-tactical assignments.
- Resolve conflicts concerning non-incident aircraft.
- Coordinate with Federal Aviation Administration.
- Update air operations plans.
- Report incidents or accidents and arrange for reinspection of the aircraft as necessary.
- Maintain Unit Log (ICS Form 214).

Air Support Group Supervisor (ASGS)

The Air Support Group Supervisor reports to the Air Operations Director and is responsible for supporting and managing helibase and helispot operations and for maintaining liaison with fixed-wing air bases.

Critical Safety Responsibilities:

- Obtain briefing from Air Operations Branch Director.
- Obtain assigned ground to air frequency for helibase operations from Communications Unit Leader or Communications Plan (ICS Form 205).
- Obtain appropriate crash-rescue service for helibases and helispots.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Obtain copy of the Incident Action Plan.
- Participate in Air Operations planning activities.
- Request special air support items from appropriate sources through Logistics Section.
- Identify helibase and helispot locations.
- Coordinate requests for air logistical support.

- Maintain coordination with airbases supporting the incident.
- Inform Air Operations Branch Director of special aircraft and/or pilot restrictions.
- Ensure compliance with each agency's operations checklist for day and night operations.
- Provide helicopter fueling, maintenance, and repair services.
- Maintain Unit Log (ICS Form 214).

Helibase Manager (HEB1/2)

Critical Safety Responsibilities:

- Obtain briefing from Air Support Supervisor.
- Conduct briefings for helibase/helispot personnel and pilots.
- Ensure helibase is posted and cordoned.
- Ensure air traffic control operations are in effect.
- Manage appropriate crash-rescue services for the helibase and helispots.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Obtain Incident Action Plan.

- Participate in Air Support Group planning activities.
- Report staffing and equipment needs to supervisor.
- Manage resources and supplies dispatched to helibase.
- Manage retardant mixing and loading.
- Display organization and work schedule at each helibase, including helispot organization and assigned radio frequencies.
- Supervise manifesting and loading of personnel and cargo.
- Ensure dust abatement techniques are provided and used.
- Consider security at each helibase and helispot as appropriate.
- Request special air support items from the Air Support Supervisor.
- Receive and respond to requests for air logistical support.
- Maintain agency records and reports of helicopter activities.

Helicopter Manager (CWN)/Helicopter Boss (HCWN/HELB)

Critical Safety Responsibilities:

- Obtain briefing from helibase manager.
- Ensure fundamental helicopter safety rules are used.
- Administer contracts and verify helicopter and pilot qualifications.
- Ensure adherence to communications procedures.
- Ensure that load calculations are accurate and meet operational needs.
- Conduct and supervise loading and unloading of personnel and cargo.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Supervise and provide leadership for all aspects of helicopter operations.
- Coordinate activities of helicopter module personnel (if assigned).
- Conduct appropriate briefings.

Helispot Manager (HESM)

The Helispot Manager reports to the Helibase Manager and is primarily responsible for managing all activities at the assigned helispot.

Critical Safety Responsibilities:

- Obtain briefing from Helibase Manager.
- Ensure helispot air traffic control operations are in effect.
- Perform manifesting and loading of personnel and cargo.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Inform Helibase Manager of helispot activities.
- Manage resources and supplies dispatched to helispot.
- Coordinate requests from Helibase Manager for air support.
- Ensure adequate dust abatement.
- Supervise or perform retardant loading at helispot.
- Maintain agency records and reports of helicopter activities.

Takeoff and Landing Coordinator (TOLC)

The Takeoff and Landing Coordinator reports to the Helibase Manager and is responsible for providing coordination of arriving and departing helicopters and movement around the helibase.

Critical Safety Responsibilities:

- Obtain briefing from Helibase Manager.
- Check radio system before commencing operation.
- Coordinate with radio operator on helicopter flight routes and patterns.
- Maintain communications with all incoming and outgoing helicopters.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Coordinate with Deck Coordinator and Parking Tender.

Aircraft Base Radio Operator (ABRO)

The Aircraft Base Radio Operator reports to the Helibase or Fixed-Wing Base Manager and is responsible for establishing communication between incident assigned aircraft and airbases, Air Tactical Supervisor, Air Operations Director, and the Take-Off and Landing Coordinator.

Critical Safety Responsibilities:

- Obtain briefing from Base Manager.
- Maintain a log of all aircraft takeoffs and landings, ETAs, ETDs, and flight route check-ins.
- Establish and enforce proper radio procedures.
- Immediately notify supervisor of any overdue or missing aircraft.
- Understand crash/rescue procedures.
- Receive clearance from Air Tactical Supervisor before launching aircraft.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Obtain Air Operation Summary Worksheet (ICS Form 220).
- Notify Take-Off and Landing Coordinator of incoming aircraft.
- Verify daily radio frequencies with Base Manager.

Aircraft Timekeeper (ATIM)

The Aircraft Timekeeper reports to the Helibase or Fixed-Wing Base Manager and is responsible for keeping time on all aircraft assigned.

- Obtain briefing from Base Manager.

- Record operation time of aircraft.
- Fill out necessary agency time reports.
- Obtain necessary timekeeping forms.

Deck Coordinator (DECK)

The Deck Coordinator reports to the Helibase or Fixed-Wing Base Manager and is responsible for providing coordination at an aircraft landing area for personnel and cargo movement.

Critical Safety Responsibilities:

- Obtain briefing from supervisor.
- Establish emergency landing areas.
- Ensure deck personnel understand crash/rescue procedures.
- Establish and mark landing areas.
- Ensure sufficient personnel are available to safely load and unload personnel and cargo.
- Ensure deck area is properly posted.
- Ensure proper manifesting and load calculations are done.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Supervise deck management personnel.

- Apply dust abatement when necessary.
- Ensure Air Traffic Control operation is coordinated with the Take-Off and Landing Coordinator.
- Maintain agency records.

Loadmaster (Personnel/Cargo) (LOAD)

The Loadmaster reports to the Deck Coordinator and is responsible for the safe operation of loading and unloading of cargo and personnel.

Critical Safety Responsibilities:

- Obtain briefing from Deck Coordinator.
- Ensure proper posting of loading and unloading areas.
- Perform manifesting and loading of personnel and cargo.
- Ensure sling load equipment is safe.
- Know crash/rescue procedures.
- Supervise loading and unloading personnel.
- Coordinate with Take-Off and Landing Coordinator.
- Ensure that appropriate hazardous materials regulations are enforced.

Parking Tender (PARK)

The Parking Tender reports to the Deck Coordinator and is responsible for parking aircraft.

Critical Safety Responsibilities:

- Obtain briefing from the Deck Coordinator.
- Know and understand the crash/rescue procedures.
- Check personnel seat belts, cargo restraints, and aircraft doors.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Supervise activities at the landing area.
- Ensure landing area is properly maintained.

Fixed-Wing Base Manager (FWBM) (For Temporary Bases)

The Fixed-Wing Base Manager reports to the Air Support Group Supervisor and is responsible for all ground service operations at assigned base.

Critical Safety Responsibilities:

- Obtain the following information on each aircraft assigned to operating base:
 - ✓ Type of aircraft.
 - ✓ Owner and pilot.

- ✓ Estimated time of arrival.
- ✓ Any limitations on use.
- Request necessary communications and operators through the Air Support Group Supervisor.
- Coordinate all flights with the Air Tactical Group Supervisor.
- Regulate movement of assigned aircraft, motor vehicles, and personnel on the airfield.
- Be thoroughly familiar with and enforce all safety requirements of the operation.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Secure a priority list of air missions and schedule all flights.
- Secure and provide all necessary ground facilities, supplies, and services required at operating base.
- Maintain necessary records on aircraft, equipment, and personnel assigned to operating base.
- Serve as liaison with airport management.
- Receive overhead, crews, and supplies and verify arrangements for transportation to assigned destinations.

Mixmaster (MXMS)

The Mixmaster reports to the Helibase or Fixed-Wing Base Manager and is responsible for preparing fire retardant for helicopters and air tankers at the rate specified and for the expected duration of job.

Critical Safety Responsibilities:

- Obtain briefing from supervisor.
- Check accessory equipment, such as valves, hoses, and storage tanks.
- Supervise crew in loading retardant into aircraft.
- Attend to the safety and welfare of crew.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Make sure supply of retardants is kept ahead of demand.
- Keep necessary agency records.

Single Engine Air Tanker Manager (SEMG)

The Single Engine Air Tanker Manager reports to the Fixed Wing Base Manager or Air Support Group Supervisor, if assigned to an Incident Management Team.

Critical Safety Responsibilities:

- Conduct pre-use and daily briefing with pilot and support crew.
- Regulate all aircraft and ground traffic on and around SEAT base of operation.
- Verify correct communications and frequency procedures are followed.
- Suspend operations due to safety issues or other appropriate concerns.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Conduct pre-use walk around inspection of aircraft and ground support equipment.
- Order aircraft services as provided in contract specifications.
- Perform as liaison with airport/airstrip management.
- Perform as liaison between the SEAT vendor and the user agency.
- Initiate and sign correspondence and other contract administration documents.
- Complete all required forms, records, reports, and documents as required by using agency.
- Record and approve availability and flight times.

- Ensure all accepted retardant/suppressant mixing and loading procedures are followed.
- Act as liaison between vendor and Air Tanker Base Manager when operating for an established air tanker base.
- Perform SEAT logistical coordination according to the Interagency SEAT Operations Guide.
- Coordinate with the local dispatch organization or Air Support Group Supervisor, if assigned to Incident Management Team for mission assignments.

Air Tactical Group Supervisor (ATGS)

The Air Tactical Group Supervisor reports to the Air Operations Branch Director and is responsible for the coordination of fixed and/or rotary-wing aircraft operations over an incident.

Critical Safety Responsibilities:

- Obtain briefing from Air Operations Branch Director.
- Determine what aircraft are operating within area of assignment.
- Ensure that a good flight following plan is in place for all aircraft.
- Determine that adequate and appropriate FM and VHF radio frequencies are used.
- Identify aviation safety issues and mitigate any hazards.

- Establish and maintain communications with Air Operations Branch Director, Air Tanker and Helicopter Coordinators, Incident Helibase, and Fixed-Wing Support bases.
- Receive and act on reports of non-incident aircraft violating Temporary Flight Restriction (TFR).
- Manage air attack activities based upon Incident Action Plan.
- Coordinate approved flights of non-incident aircraft or non-tactical flights in Temporary Flight Restriction (TFR).
- Make tactical recommendations to appropriate operation section personnel.
- Inform Air Operations Branch Director of tactical recommendations affecting the air operations portion of the Incident Action Plan.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Report on incidents or accidents.
- Maintain Unit Log (ICS Form 214).

Air Tanker/Fixed Wing Coordinator (ATCO)

The Air Tanker/Fixed Wing Coordinator reports to the Air Tactical Group Supervisor and is responsible for coordinating assigned air tanker operations at the incident. The coordinator is always airborne.

Critical Safety Responsibilities:

- Obtain briefing from the Air Tactical Group Supervisor.
- Determine all aircraft including air tankers and helicopters operating within incident area of assignment.
- Survey incident area to determine situation, aircraft hazards, and other potential problems.
- Coordinate the use of assigned ground-to-air and air-to-air communications frequencies.
- Ensure air tankers know appropriate operating frequencies.
- Determine incident air tanker capabilities and limitations for specific assignments.
- Coordinate with Air Tactical Group Supervisor and assign geographical areas for air tanker operations.
- Implement air safety procedures. Immediately correct unsafe practices or conditions.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Receive assignments, assign missions, schedule flights, and supervise air tanker activities.
- Provide information to ground resources.
- Inform Air Tactical Group Supervisor of overall incident conditions including aircraft malfunction or maintenance difficulties.
- Inform Air Tactical Group Supervisor when mission is completed and reassign air tankers as directed.
- Report incidents or accidents.
- Maintain records of activities.

Helicopter Coordinator (HLCO)

The Helicopter Coordinator reports to the Air Tactical Group Supervisor and is responsible for coordinating tactical or logistical helicopter mission(s) at the incident.

Critical Safety Responsibilities:

- Obtain briefing from the Air Tactical Group Supervisor.
- Survey assigned incident area to determine situation, aircraft hazards, and other potential problems.

- Coordinate with Air Tactical Group Supervisor in establishing locations and takeoff and landing patterns for helibase(s) and helispot(s).
- Coordinate the use of assigned ground-to-air and air-to-air communications frequencies with the Air Tactical Group Supervisor.
- Ensure that all assigned helicopters know appropriate operating frequencies.
- Coordinate geographical areas for helicopter operations with Air Tactical Group Supervisor and make assignments.
- Implement air safety procedures. Immediately correct unsafe practices or conditions.

Other Duties:

- Review Common Responsibilities (Chapter 7, Page 158).
- Ensure that approved night flying procedures are in operation.
- Coordinate activities with Air Tactical Group Supervisor, Air Tanker Coordinator, Air Support Group, and ground personnel.
- Inform Air Tactical Group Supervisor when mission is completed and reassign helicopter as directed.
- Report incidents or accidents.
- Maintain records of activities.

OPERATIONS

Pre-plan aviation operations in advance to meet aircraft support needs. The following points should be considered when aircraft are used in fire operations:

Communications

Aircraft should not be used until communications (both ground-to-air and air-to-air) with contact and control personnel have been established and understood.

Pilot Briefing Checklist

- Overall plan for next day's strategy and tactics
- Smoke conditions
- Visibility limits at the fire and airports/fly with aircraft landing/taxi lights on
- Conduct high-level recon before low-level flight
- Established flight routes, helispot locations, marking, etc.
- Flight path obstructions/wires, towers, etc.
- Topographic problems
- Working altitude Mean Sea Level (MSL)
- Local wind turbulence
- High wind predictions

- Known downdraft areas
- Other aircraft operations over the incident
- Receive briefing on all Temporary Flight Restrictions (TFR) in the area when transitioning from one incident/fire to another or being released to another location.
- Work schedules
- Flight and duty limitations
- Communications frequencies
- Parking areas
- Taxi ways
- Fueling procedures

Airport Facilities and Procedures

Facilities. Check out what facilities are available.

- FAA towers, flight service stations (FSS), emergency tower operational needs.
- Airport areas for assigned loading, unloading, and parking for retardant aircraft, helicopters, cargo, and transport aircraft.
- Location for office space, phone communication facilities, ramp personnel for loading and unloading, eating and sleeping accommodations.

- Other items such as crash trucks, major or minor repairs for aircraft, forklifts, APUs, and passenger stairs available for use.

Procedures. Meet with airport manager and Federal Aviation Administration (FAA), tower, or flight service station personnel who can assist operations and provide valuable information.

- Check out landing, take-off, taxiing procedures, and radio frequencies used at airport.
- Know lengths, altitudes, surface of runways, normal take-off and landing patterns, if lights available after dark, gross take-off and landing weights for single, tandem and dual tandem wheeled aircraft.
- As needed develop memorandum of understanding or other agreement including any financial arrangements.

Air Traffic Operations

Following are factors to be considered in air traffic operations:

En route to the Fire. Request a Temporary Flight Restriction (TFR) designation.

- Set up flight routes for all air traffic to and from fire considering the following:
 - ✓ Best route with least hazards for types of aircraft and missions to be accomplished.
 - ✓ Flying around special use airspace.

- Aircraft arriving 5 to 10 minutes away from fire should contact appropriate Air Traffic Operations over the fire.

Over the Fire. Operations Section Chief sets priorities of aircraft use on fire area working in conjunction with Air Tactical Group Supervisor.

Air Tactical Group Supervisor Guidelines

- Brief all pilots before arrival at the fire, if possible.
- Have air tankers orbit left hand pattern and report to Air Tanker Coordinator.
- Ensure that military training routes have been amended or adjusted for the fire area.
- Set mean sea level altitudes and orbit patterns for different type aircraft.
- Set checkpoint areas on reporting into Temporary Flight Restriction (TFR).
- Maintain primary and secondary radio frequencies for all aircraft that are en route or remain in fire area.
- Cancel or abort missions when safety of aircraft or pilots is in jeopardy.
- All aircraft shall fly with their landing/taxi lights on.

Records

It is important to keep the following records:

- Use appropriate ICS Forms found in the Interagency Helicopter Operations Guide (IHOG).
- Use appropriate ICS Forms for Interagency Fixed-Wing Base Operations.

Maintain a flight log to provide for flight following:

- Flight manifests for personnel and cargo incoming or outgoing from airports, helibases, and helispots.
- Receipts for fuel, oil, and other equipment used.

A log for:

- Flight hour limitation.
- Flight times.
- Property accountability forms for property issued to pilots.

Time Recording: Time for aircraft and personnel will be recorded and completed daily. **Report All Accidents Per Agency Policy and Procedures.**

Flight/Duty Hour Limitations

Check contract or furnishing agency for limitations. Most restrictive limitations will prevail.

Aerial Retardant Use Considerations

Main Principle: Call for retardant early in sufficient quantity, dropped from an effective altitude with absolute minimum time lapse between drops. Between each drop, follow up with aggressive ground suppression action.

Consider:

- Will drop be effective? If conditions allow, very early morning is most effective due to lower air temperatures and higher humidity.
- Will drop be safe for ground personnel?
- Can mission be accomplished during daylight?
- Type of fuels
- Wind conditions (normally not over 30 mph)
- Fire behavior
- Ability to follow up with ground action.
- If terrain prohibits use of large air tankers, consider using single engine air tankers and/or helicopters.
- Can pilot see target?
- Suspend drops when no longer effective or essential.
- Notify pilot if there are physical hazards in drop pattern, such as utility lines, towers, trees, other aircraft, etc.

Paracargo and Aerial Retardant Operations Safety

The paracargo danger zone is a strip of 200 feet on each side of the flight path, 300 feet in the direction of approach, and 1300 feet in the direction of the aircraft when it leaves the target. The following should be observed at all times:

- Mark target area with white or orange “T” in open or cleared area with top of “T” into the wind. Erect paper streamer or flagging on long pole to indicate wind direction.
- An individual should be in charge at drop site.
- All persons, vehicles, and animals should be cleared from the danger zone prior to arrival of the cargo aircraft.
- Camps should be at least 600 feet from target area and outside of danger zone.
- Allow no one in danger zone until drop is complete.
- Beware of “streamers” or parachutes that don’t open.

Personnel can be injured by the impact of material dropped by aircraft. Clear personnel out of target area when drop is to be made. If you can’t escape:

- Hold your hand tool away from your body.
- Lie face down with head toward oncoming aircraft and hardhat in place. Grasp something firm to prevent being carried or rolled about by the dropped liquid.

- Do not run unless escape is assured.
- Get clear of dead snags, tops, and limbs in drop area.
- Working in an area covered by wet retardant should be done with caution due to slippery surfaces.

Drop-Site Marking

- A white or orange “T” made with two strips of cloth or crepe paper should be staked or held in place with rocks to identify the target as follows:
 - ✓ Letters should be at least 7 feet long.
 - ✓ Top of the “T” should be toward the wind to indicate direction.
 - ✓ When several drop sites are used in the same vicinity, a number will be placed below and to the right of the “T” to designate individual drop site.
 - ✓ In all cases, prior to abandoning a drop site, the marker shall be removed or destroyed.

Retrieving Cargo

- All cargo parachutes should be returned to base for repacking at first opportunity.
- Care must be exercised to prevent damage in recovering parachutes if they are tangled in brush or trees.

Other Considerations

- Place all paracargo orders well in advance of need.
- Keep all personnel, animals, and vehicles clear of danger zone. Danger zone is 200 feet on each side, 300 feet on approach, and 1,300 feet on getaway leg of flight line.
- Do not have camp closer than 600 feet from target and outside danger zone.