
UNIT 3 - AIRCRAFT PROCEDURES

RAM-AIR PARACHUTE
TRAINING MANUAL

BLM SMOKEJUMPERS

CHAPTER 3 - AIRCRAFT PROCEDURES

In this chapter, the student will be introduced to general aircraft safety, in-flight emergency procedures, and the duties of the spotter. They will also be asked to demonstrate the proper procedures for hooking up their static lines, the four point check, exiting the aircraft, jump count, and opening checks. This unit is divided into three lessons: General Aircraft Safety, Standard Aircraft Briefing, and The Mock-up.

CHAPTER OBJECTIVES

At the completion of this Chapter the student must:

1. Accurately demonstrate verbally and physically the safety procedures involved with aircraft propellers, approaching or leaving an aircraft, fueling operations, and take-offs and landings.
2. Accurately demonstrate verbally and physically the proper safety procedures for given in-flight emergencies that are jumper related and aircraft related.
3. Accurately demonstrate verbally and physically the proper safety procedures used during normal jumper operations including boarding the aircraft, the flight to the incident, the dropping of jumpers, and the dropping of cargo.
4. Accurately demonstrate verbally and physically the proper safety procedures for emergency exits from the aircraft both on a main and reserve parachute.
5. Accurately demonstrate verbally and physically proper reactions to given commands by a spotter during simulated jumper operations.
6. Flawlessly demonstrate verbally and physically the proper aircraft and exit procedures from a simulated jump ship. These procedures will include all aspects of general aircraft safety, in-flight emergency procedures, a proper hook-up, four-point check, exit, jump count and opening checks.
7. Flawlessly demonstrate physically the proper reactions to commands during simulated jump sequences.

EQUIPMENT NEEDS

- 1ea. - Aircraft Simulator ("the mock up")

Lesson I GENERAL AIRCRAFT SAFETY

This lesson can be covered at the mock-up, in a jumpship, or during a classroom session. However, it is best covered in an actual jumpship, with a pilot along to discuss location of fire extinguishers and crash procedures. Using a classroom should be the last resort.

Students will be introduced to various aspects of aircraft safety and smokejumper operations relating to aircraft.

LESSON OBJECTIVE:

At the completion of this Lesson, the students must:

- **Accurately demonstrate verbally and physically the safety procedures involved with aircraft propellers, approaching or leaving an aircraft, fueling operations, and take-offs and landings.**
- **Accurately demonstrate verbally and physically the proper safety procedures for given in-flight emergencies that are jumper related and aircraft related.**
- **Accurately demonstrate verbally and physically the proper safety procedures used during normal jumper operations including boarding the aircraft, the flight to the incident, the dropping of jumpers, and the dropping of cargo.**
- **Accurately demonstrate verbally and physically the proper safety procedures for emergency exits from the aircraft both on a main and reserve parachute.**

EQUIPMENT NEEDS:

1 ea. - jump ship or the Mock up

GENERAL AIRCRAFT SAFETY

A. PROPELLERS

1. Always avoid the aircraft propellers, even when they are motionless. Treat them as if they are always in motion.
2. Maintain propeller awareness. Know where they are and keep a safe distance away from them.

B. APPROACHING OR LEAVING AIRCRAFT

1. Always approach or leave aircraft on a path that avoids the propellers.
2. Do not take shortcuts close to the nose or under the wings of an aircraft.
3. Approach rear-loading aircraft from the rear.
4. Approach forward-loading aircraft from the front. Do not approach or attempt to leave until the props on the loading door side stop spinning.

C. FUELING OPERATIONS

1. No smoking allowed within 50 feet of the aircraft while it is being fueled or within 50 feet of fuel tanks at any time.
2. No one is allowed on board the aircraft during fueling operations.

D. BOARDING ORDER

1. Rear-loading aircraft, load in reverse order, i.e., last jumper first.
2. Front-loading aircraft, load in actual jump order.

E. TAKE-OFF AND LANDING

1. Wear seat belts.
2. Jumpers must wear a jump suit, gloves, and helmet with mask down on take-offs, landings, and during low-level cargo drops.

3. Do not move around inside the aircraft during take-offs, landings, or low-level patterns. Changes in the center of gravity can make the aircraft hard for the pilot to control.

F. FLIGHT TO FIRE

1. Avoid unnecessary movement.
2. Know the location of airsick bags and use them.
3. Know the location of the emergency exits and fire extinguishers.
4. Exercise caution near aircraft windows. Avoid putting pressure on them with boots, helmets, or other gear.
5. Stay away from an open door unless the spotter has given approval and static line is hooked up.
6. Guard your reserve. Be especially aware of your reserve handle and prevent it from getting snagged or caught.
7. Do not remove parachutes or jumpsuit unless specifically instructed to do so by the spotter.
8. When flight time to a fire is long, jumpers will normally be instructed to chute up in flight 20 minutes from a fire. Chute numbers will be recorded and each jumper will give and receive an equipment check.
9. 5 minutes out from a fire the spotter will instruct jumpers to attach PG bags and perform secondary equipment check (pin check).
10. First aid kits and Dow antennas may be handed out by the spotter depending on fire size.
11. En route to the fire, the spotter will hand a note back to the jumpers. Everyone should read it. The note will have some or all of the following information on it:
 - reported fire size, coordinates, district or zone, suppression response area
 - ground contacts, other A/C, and/or forces en route
 - frequencies for dispatch, air-to-ground, tactical resources
 - IC or JIC and trainees

G. OVER-THE FIRE - DROPPING JUMPERS

1. The spotter selects the jump spot (the IC may be involved in selection) and determines wind drift. During observation and streamer passes, pay particular attention to jump spot location and relationship to fire location, ground hazards, terrain features, water sources, and fire behavior.

The spotter may give additional information to the designated IC or smokejumper crew boss, including:

- suppression strategy
- radio frequencies
- other aircraft in the area or responding to fire
- best route to the fire from the jump site
- ground contacts (if already manned)
- escape routes in case of a blow up
- potential demob routes
- maps of the area

2. Watch the streamers (and other jumpers dropped before you) to get an indication of wind direction and amount of drift. Do not bunch up at the rear of the aircraft.
3. The spotter will tell what size stick will be dropped. The first jumper in the stick will check that all jumpers in the stick are ready to jump.
4. The spotter will ask the first jumper in the stick "Are you ready?" The first jumper will answer for the whole stick.
5. The spotter will then ask "Are you tight?" to make sure the jumpers have tightened their leg straps, reserve belly bands, and pg bag straps. Again, the first jumper in the stick will answer for all.
6. The spotter will then tell the designated stick to hook up. The jumper will hook up and show the connected snap to the spotter (or assistant spotter) who will check to see that the static line snap is hooked up correctly, **but it is the jumper's responsibility to hook up at the spotter's command.**
7. Be cautious around the open door before your static line is hooked up.
8. The spotter will give each stick a pre-jump briefing. The pre-jump briefing will include:

- location of the jump spot and exit point
- jump spot elevation
- streamer drift and wind direction
- ground hazards
- type of pattern flown

The spotter will end the briefing by asking jumpers if they have any questions. Jumpers need to actively seek any needed clarifications necessary.

9. The spotter will confirm jump altitude with pilot and issue the command to activate AAD, "We are at 3000' AGL, activate your AAD." All jumpers designated to jump, will activate their AAD, if they have one, and will guard their reserve while doing so.
10. The spotter will tell the first jumper to get in the door. This is the signal for all jumpers in the stick to do a four-point check.
11. All jumpers must protect their reserve handles when moving towards the door.
12. The spotter (assistant spotter) will make a final visual check on each jumper prior to the exit. On final, the spotter will confirm the jump altitude and tell each jumper that his static line is clear. The spotter will say "Get ready" about three seconds from exit.
13. Jumpers exit the aircraft only when slapped on the shoulder by the spotter. If spotter discovers a safety problem and the pass is aborted, the spotter will block the door with his arm at face level and tell the jumper not to exit.
14. Upon conclusion of jump operations, the spotter will prompt any remaining jumpers to deactivate their AADs, "Turn your AADs off." Jumpers will deactivate their AADs and verify that their jump partner has deactivated their AAD.

H. CARGO DROPPING

1. During cargo drops jumpers must wear helmets, gloves and seat belts.
2. Avoid unnecessary movement.
3. Do not assist the spotter or assistant spotter unless asked. Stay out of the way. A fully suited jumper humping cargo for the spotter stands a much better chance of accidentally deploying his reserve in the plane.

I. IN-FLIGHT EMERGENCIES

1. Jumper-related:

A. Inadvertent deployment of reserve inside aircraft

- try to cover immediately, do anything to prevent reserve pilot chute from exiting aircraft
- if reserve pilot chute leaves aircraft, follow it very quickly

B. Jumper-in-tow

- If possible, place both hands on helmet, indicating that you are okay.
- be ready to be cut away by the spotter; as soon as the spotter sees that you can pull your reserve you will probably be cut away
- when cut away, pull reserve
- **do not pull your reserve until you are cut away**

2. Aircraft related:

A. Noncritical (landing gear stuck, electrical problems, etc.)

- pilot determines if bailout is necessary and confers with spotter
- remain seated, await instructions
- will probably go as normal jump

B. Critical (engine fire, hydraulic problem, etc.)

- when possible, the pilot will initiate emergency procedures through the spotter
- remain seated until told otherwise
- the spotter may indicate which chute to use
- when the spotter tells you to, move to the door and exit
- in an urgent situation, do not take the time to put on helmet, gloves, or P.G. bag

***The main and reserve open in about the same amount of time. Both canopies need an absolute minimum of 400 feet AGL to open. Therefore, in a critical emergency, the parachute you have on or can get on the quickest is the one you should exit on.**

J. EMERGENCY EXITS

1. Emergency exit on main parachute:
 - move to the rear of the aircraft in orderly fashion
 - follow “normal” procedures for the aircraft you are in and clip static line to the extender if you have time
 - several static lines can be clipped to the same extender in an emergency
 - clip your static line to an extender or directly to the overhead cable. **The point clipped into must allow the jumper to clear the door before the drogue starts to inflate.**
 - look at drogue release handle while exiting
 - pull drogue release handle immediately after exit (better to have less than optimal body position on canopy opening than hit the ground with an undeployed canopy)
 - do not switch on AAD if deactivated at time of emergency, do not switch off if activated at time of emergency.

2. Emergency exit on reserve:
 - do not hook up static line
 - look at handle when in the door
 - look at handle while exiting
 - pull handle when clear of aircraft

3. Regrouping after bailout:
 - steer towards last person to exit
 - walk toward last person and then towards the plane

K. CRASH PROCEDURES

- helmets and gloves on
- if time, secure any loose cargo
- restrict movement
- wear your seat belt
- keep to rear of cargo if possible
- get out of plane quickly and help anyone who is injured

Lesson II STANDARD AIRCRAFT BRIEFING

This lesson can be covered at the mock-up, in a jumpship, or during a classroom session. However, it is best covered in an actual jumpship. Using a classroom should be the last resort.

Students will be introduced to the commands that will be given to each jumper during jumper operation and proper procedures to be followed during the jumping sequence.

LESSON OBJECTIVE:

- **At the completion of this Lesson, the students must accurately demonstrate verbally and physically proper reactions to given commands by a spotter during simulated jumper operations.**

EQUIPMENT NEEDS:

1 ea. - jump ship or the Mock up

1. Spotter tells jumpers the size of the "stick".
2. Spotter asks 1st jumper in the stick, "Are you ready?"
3. 1st jumper answers for entire stick, "Ready".
4. Spotter asks 1st jumper in the stick, "Are you tight?"
5. 1st jumper answers for the entire stick, "Yes".
6. Spotter: "Hook up".
7. All in the stick hook up.
8. Spotter briefs jumpers on jump spot, winds, flight pattern, and hazards. All jumpers guard their reserves while this takes place.
9. Spotter informs jumpers when aircraft reaches jump altitude, "We are at 3000' AGL, activate your AAD". All jumpers, designated to jump, will activate their AAD's, if they have one, and will guard their reserve while doing so.

10. Spotter: "Get in the door".
11. Using both hands the first jumper gets in the door while the other jumpers in the stick perform a 4-point check:
 - drogue release
 - main release
 - reserve handle
 - lower RSL
12. First jumper does his 4-point check, then guards his reserve and leans back to give spotter room to look out the door. Other jumpers in the stick move to ready position.
13. Spotter tells the jumpers they are turning final, 3000 feet AGL.
14. Spotter checks that jumpers are clear. Spotter: "You are clear".
15. Spotter aligns aircraft.
16. Three seconds from exit, spotter pulls back out of the door. Spotter: "Get ready."
17. Jumper cocks into position and waits for the slap.
18. Spotter slaps jumper on shoulder.
19. Jumper exits and performs jump count (while shuffling away from mock-up to allow other jumpers room to exit):
 - Jump thousand
 - Look thousand
 - Reach thousand
 - Wait thousand
 - Pull thousand
20. Chute opens and jumpers perform opening checks.
 - Check my canopy
 - Check my airspace
 - Canopy control check: "Right turn, Left turn, Stall"
21. Spotter will issue command to deactivate AAD prior to aircraft descent for any remaining jumpers. "Turn your AADs off". Cue to deactivate your AAD and verify that your jump partner has done the same.

Lesson III AIRCRAFT MOCK-UP

Students will be asked to perform actual jumper operations from boarding the aircraft to properly exiting and completing their opening checks from a simulated aircraft.

LESSON OBJECTIVE:

At the completion of this Lesson, the students must:

- **Flawlessly demonstrate verbally and physically the proper aircraft and exit procedures from a simulated jump ship. These procedures will include all aspects of general aircraft safety, in-flight emergency procedures, a proper hook-up, four-point check, exit, jump count and opening checks.**
- **Flawlessly demonstrate physically the proper reaction to given commands during simulated jump sequences.**

EQUIPMENT NEEDS:

1 ea. - Actual jump ship or Mock-up.

1. Explain to the students the objectives of the mock-up.
2. Have an experienced jumper go through a standard jump procedure from hook-up to opening checks, explain each step of the procedure. (See standard a/c briefing below).
3. Start with having each student sit in the door of the mock-up. Show them the correct body position for sitting in the door: hands, feet, etc.
4. Once the student gets comfortable in the door, have them exit and do the jump count and opening checks.
5. Next, add the hookup, AAD activation command and 4-point check. With the student standing in the mock-up, have the spotter ask them if they're ready and tight, and give the command to hook up. The spotter should give a standard briefing, the "get ready," and the slap. Students should already have a good understanding of the exit, the jump count, and the opening checks.
6. The mock-up progresses cumulatively, allowing the students to master one task before moving on to the next. The two-jumper exit comes next.

7. Make sure the students are performing each procedure properly before moving on to the next. By the end of the first session, the students should have a basic understanding of exit procedures, and should be performing mock exits with few mistakes.
8. By the end of mock-up training, all the students should be performing two-jumper exits with little difficulty. Students who are having problems at the end of the second session should return to the mock-up between other units or after hours for one-on-one work with an instructor.