



# SHAPE SAFETY BULLETIN #11A

(Safety & Health In Arts Production & Entertainment)

## ADDENDUM "A" - EXTERNAL LOADS

### FIXED WING AIRCRAFT

#### **GUIDELINES FOR ESSENTIAL PERSONNEL OR EQUIPMENT TO FILM OR BE FILMED WHILE ON THE EXTERIOR OF, ENTERING, OR EXITING AN AIRPLANE IN FLIGHT**

1. An **Airplane External Load** is equipment or essential personnel that may be required outside the airplane in flight, including wing walkers, parachutists, cameramen, stunt persons, etc.

Stunt persons are often suspended from landing gear struts, wing struts, trapeze devices, bungee cords or cables and perform various types of air to air transfers, air to ground transfers and air to surface vehicles transfers.

Safe completion of these traditional motion picture activities require the complete understanding and coordination of all parties involved (*i.e.* the **Aerial Coordinator and/or Pilot in Command, the Designated Production Representative, Stunt Persons, Stunt Riggers, Airplane Riggers, Special Effects and Grip Riggers**) and essential ground crew.

2. The **Pilot in Command** is at all times the final authority over his/her airplane and **shall** be in command over his/hers **flight operations and/or related activities**. The **Pilot in Command** and/or Aerial Coordinator shall have the authority to abort any flight operation **in the interest of safety**.
3. Risk Management:
  - a. **Participants will conduct a thorough evaluation of the operations to be conducted and the potential risk to essential personnel, if any.**
  - b. **External loads must not be flown over workers. Workers must remain in recognized safe areas when there is a hazard from airlifted loads.**

4. Personnel Involved:

**Aerial Coordinator and /or Pilot in Command**, essential personnel to be flown, airplane rigging, safety and production personnel.

5. Briefing:

Briefings will be conducted by the Aerial Coordinator and /or Pilot in Command, specific to the scheduled airplane external load operations and in compliance with the approved Motion Picture Operations Manual, briefing provisions.

Safety Bulletins Are Recommended Guidelines Only; Consult All Applicable Rules and Regulations



6. Communication:

Communication must exist at all times between the Pilot in Command and the essential personnel being flown. This can be accomplished through the use of radios, intercoms or pre-briefed hand signals.

Additionally, in the event of lost communications, the pilot must be able to maintain visual contact with the stunt person or cameraman. If visual contact cannot be maintained, then a third party, who can maintain visual contact, will be used. This person may be onboard the aircraft, on the ground, or in a chase aircraft.

10. Attaching Methods and Devices:

All personnel must be attached to the aircraft while in flight, unless those persons are performing an essential function outside the aircraft requiring them to depart the aircraft in flight (e.g. parachuting or transfers).

Seat belts, cables and safety lines will be attached to appropriate aircraft hard points (e.g., seat belt attach points, cargo tie down points, and airframe bridles or other suitable airframe locations).

Attaching devices, cables, carabineers, braided nylon climbing rope, nylon straps, steel clevises, body harnesses, etc. are normally provided by the motion picture special effects and stunt personnel. In Canada, attaching devices must be Airworthiness approved.

All of the above attaching devices have load ratings established by the manufacturer in compliance with various industry and government specifications and established Motion Picture Safety Guidelines and be Airworthiness approved in Canada.

**Note:** In Canada, a Class D external load must generally be jettisonable. However, a **person should never be attached to a load release device unless approved in the authorization given by Transport Canada.**

11. Parachutes:

If parachutes are to be utilized, they must be of a Transport Canada approved type and must have been packed and certified within the preceding 120 days.

While wearing a parachute the stunt person must not be attached to the aircraft except during takeoff and landing.

An accidental parachute opening while attached to the airplane could have serious negative effect on the aircraft and parachutist.

12. Weight and Balance:

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Due to the nature of airplane external loads involving persons or equipment, the longitudinal C.G. (center of gravity) considerations are nominal and can be easily calculated using the manufacturers' weight and balance data.

Conversely, the majority of airplane external loads involving persons and/or equipment are more likely to effect the lateral weight and balance.

Airplane manufacturers normally do not provide lateral C.G. charts or limits.

**Therefore, it is essential to determine what effect a wing walker or other essential personnel exterior to the airplane will have on the lateral C.G., prior to attaching them to a specific location.**

This can be accomplished through consultation with pilots having previous experience with similar aircraft and configuration or through a flight evaluation.

10. Pilots Check List:

a. Aircraft

- i. Load-bearing capacity and method of securing of all attaching devices related to the external load.
- ii. Verification of load bearing capacity and anticipated loads on the airframe attachment points to be utilized.
- iii. Accomplish Weight and Balance of the external load, including if necessary, the possible release or departure of the external load.

b. Personnel

- i. Verify that only essential personnel are onboard the aircraft.
- ii. Confirm essential personnel specific duties and responsibilities.
- iii. Communications check, audio and hand.
- iv. Review emergency procedures specific to the external load operation with all essential personnel.
- v. Review potential risk, if any, with the essential personnel.
- vi. **No essential personnel may participate in airplane external load operations unless they have read, understood, and agreed to comply with the conditions of the Waiver Holders, Certificate of Waiver and its special provisions, if any.**

