Actsafe Safety Bulletin #29a

GUIDELINES FOR SAFE USE OF HOT AIR BALLOONS

GUIDELINES FOR ESSENTIAL PERSONNEL OR EQUIPMENT TO FILM OR BE FILMED WHILE ON THE EXTERIOR OF, ENTERING, OR EXITING A BALLOON BASKET OR GONDOLA IN FLIGHT

Traditional ballooning motion picture activities include air to ground transfers, air to surface vehicles or persons, rappelling, parachuting, long line and many other scenarios where essential personnel may be required outside of the balloon basket or gondola.

Stunt persons and camera operators are often called upon to stand outside of or hang from the basket or gondola, cargo hooks, trapeze devices, bungee cords, cables, ladders, long lines, etc.

Safe completion of these operations 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, Balloon Riggers, Special Effects and Grip Riggers, and essential ground crew. In performing these types of operations the following guidelines should be used:

1. PILOT IN COMMAND:
   The Pilot in Command is at all times the final authority over his/her balloon and shall be in command over his/hers flight operations and/or related activities.

   a. The Pilot in Command and/or Aerial Coordinator shall have the authority to abort any light operation in the interest of safety.

2. PERSONNEL INVOLVED:
   Aerial Coordinators and/or Pilot in Command, essential personnel to be flown, stunt persons, balloon rigging, safety and production personnel.

3. BRIEFING:
   Briefings will be conducted by the Aerial Coordinator and/or Pilot in Command specific to the scheduled balloon external load operations and in compliance with the approval granted by Transport Canada. Briefings are to include at least those persons essential to the activity being filmed and the filming.

4. RISK MANAGEMENT:
   Participants will conduct a thorough evaluation of the operations to be conducted and the potential risks to essential personnel, if any.

5. COMMUNICATION:
   Communication must exist at all times between the Pilot in Command, stunt person(s), camera operator and the essential personnel being flown. This can be accomplished through the use of radios, intercoms or pre-briefed hand or other visual signals.

   Additionally, in the event of lost communications the pilot must be able to maintain visual contact with the stunt person or camera operator. If visual contact cannot be maintained, then a third party who can maintain visual contact will be used.

   This person may be onboard the balloon, on the ground, or in a chase aircraft.

Hand signals used to communicate between air and ground crews should be understood by the workers exposed to identified hazards. A designated signaller must be clearly identifiable to the pilot by means of high visibility apparel and position.

6. ATTACHING METHODS AND DEVICES:
Belts, harnesses, cables and safety lines will be attached to existing balloon basket or gondola hard points, cargo tie down points, basket or gondola bridles, or other suitable basket or gondola locations.

Attaching devices, along with 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 devices have load ratings established by the manufacturer in compliance with various industry and government specifications and established Motion Picture Safety Guidelines.

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.

7. WEIGHT AND BALANCE:
Due to the nature of balloon external loads involving essential persons or equipment, diligent review and compliance with the manufacturer's maximum weight data is required.

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

8. PILOT CHECK LIST:

a. Balloon
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 basket or gondola attach 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 balloon.
ii. Confirm with essential personnel specific duties and responsibilities.
iii. Verify all communications and check audio and/or hand signals.
iv. Review emergency procedures specific to the external load operation with all essential personnel.
v. Review any potential risk factor, 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 Transport Canada approval and its special provisions, if any. All essential personnel must participate in the safety briefings related to the event.

c. Parachutes

If parachutes are to be used, they must have been packed and certified within the preceding 120 days.

9. RAPPELLING:

a. Pilot Qualifications:
In Canada, rappelling pilot qualifications must be in accordance with the Company Operations Manual. Further indications of qualification may include:

i. previous experience and safety record, or
ii. an actual flight demonstrating the pilot's knowledge and skill regarding rappelling operations.

b. Rappeller Qualifications:

i. In Canada, rappeller qualifications must be in accordance with the Company Operations Manual. This may include demonstration by rappellers and spotters (stunt persons) of their ability during required familiarization flights.
ii. The Waiver Holder and/or Pilot will have the authority to withhold approval of any rappeller or spotter (stunt person).

c. Rappelling Special Provisions:
The Pilot in Command has the authority to cancel or delete any activity or event, if in their opinion, the safety of persons, or property on the ground or in the air is at risk, or if there is a contravention to the provisions of the Transport Canada Authorization.

d. Rappelling Equipment:

i. Rope size appropriate to the rappel (friction) device being used, will be required for all rappel operations.
ii. Rope strength for each specific load, a safety factor of 10:1 between the strength of the weakest piece of attaching equipment and the load to be carried will be utilized.
iii. The absolute minimum tensile strength of any rappel rope will be 27kN (6000 lbs). Tested to NFPA and/or other regulatory standards.
iv. Ropes will have a rubber jacket or other appropriate edge protection to give protection on basket or gondola edges when using basket or gondola attach points.
v. Carabineers, steel or aluminum must have a minimum tensile strength of 23 kN (5000 lbs), be of a locking type and be tested to NFPA and/or other regulatory standards.
vi. Cutting devices, knifes, cable cutters, etc. shall be sufficient to cut any attaching device will be provided to the spotter or safety person(s) for use in an emergency.
vii. Rappel ropes will have a minimum of two (2) attach points per rope with test strengths greater than or equal to 23 kN (5000 lbs) per rappeller.

10. Except where necessary for takeoff or landing, Transport Canada prohibits the operation of an aircraft below the following altitudes:

    a. Over Congested Areas
    Over any congested area of a city, town or settlement, or over any open air assembly of persons, an altitude of 150 metres (500 feet) above the highest obstacle within a horizontal radius of 150 metres (500 feet) of the balloon.

    b. Over Other Than Congested Areas
    An altitude of 150 metres (500 feet) above the surface, except over open water or sparsely populated areas. In that case, the aircraft may not be operated closer than 150 metres (500 feet) to any person, vessel, vehicle or structure.