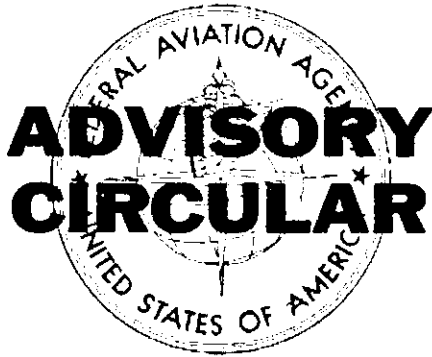


Cancelled See 105-2
+ 00-26

Federal Aviation Agency



AC NO: AC 105-1

AIR TRAFFIC CONTROL
AND GENERAL
OPERATIONS

EFFECTIVE :

11/19/63

SUBJECT : INTENTIONAL PARACHUTE JUMPING

1. **PURPOSE.** This circular is to provide information and guidance on intentional parachute jumping, and the parachute equipment used by the jumper.
2. **GENERAL.** The parachute has been used for many years as a lifesaving device and for exhibition jumping. Parachute regulations were, therefore, written primarily for these uses. In recent years a major change has occurred. There are now thousands of persons making parachute jumps-- in competition, for sport, and in public service activities. This expanded interest has generated new parachute designs and alterations to old ones. The Federal regulations did not provide for such a situation; consequently, some areas of misunderstanding have developed. The material that follows is intended to explain certain aspects of intentional parachute jumping that have given trouble to parachutists and parachute clubs. Wherever the abbreviation "FAR" is used, it means Federal Aviation Regulation.
3. **INFORMATION ABOUT PARACHUTES AND JUMPING.**
 - a. **Federal Aviation Regulations.** The Parts of the Federal Aviation Regulations which should be of interest to parachutists are described below. They may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, at 20¢ per copy.
 - (1) Part 65 [New] - "Certification: Airmen Other Than Flight Crewmembers." Subpart F concerns parachute riggers, their eligibility requirements, certification, privileges, and performance standards.
 - (2) Part 105 [New] - "Parachute Jumping." This is especially important to parachutists, and to pilots who carry them, since it contains rules on intentional jumping.

- (3) Part 149 /New/ - "Parachute Lofts." This contains rules on parachute lofts, their eligibility requirements, certification, ratings, and performance standards.

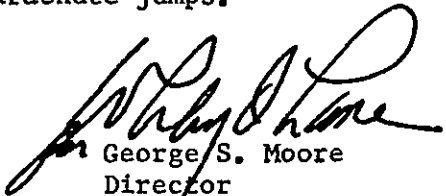
b. Other Information.

- (1) Technical Standard Order C23. This concerns minimum performance and quality control standards of parachutes carried for emergency use. Two revisions (C23a and C23b) of this TSO have been issued; they concern minor changes to the basic order.
- (2) FAA Advisory Circular No. AC 91-1. This concerns operation of aircraft with a door removed.
- (3) Part 514, Regulations of the Administrator (of FAA), which concerns manufacturing, including parachutes. Part 514, TSO C23, Advisory Circular AC 91-1, and the Advisory Circular you are reading, may be obtained, at no cost, by writing the Publishing and Graphics Division, Attention: Distribution Section, Federal Aviation Agency, Washington, D. C. 20553.
- (4) Parachute Club of America (PCA) Safety Standards. These are standards devised and published by the PCA for the training of students, checking equipment, and conducting sport parachuting. They have been developed for persons and organizations desiring dependable information on intentional jumping, and while not officially approved by the FAA, have been widely used for guidance by individuals and parachute clubs. Copies may be obtained at no cost from the Parachute Club of America, P. O. Box 409, Monterey, California.

4. THE PARACHUTE AND THE PACK. By Part 1 /New/ of the Federal Aviation Regulations, "Definitions and Abbreviations," a parachute means a device used or intended to be used to retard the fall of a body or object through the air. For the purposes of this advisory circular, a parachute is an assembly consisting of a harness, canopy, suspension lines, container, ripcord, pilot parachute (if required), and in some cases a deployment sleeve or bag. Of course, there are some lesser parts associated with these main components, such as connector links, "D" rings, and pack opening bands.

The term "pack" (such as back pack or chest pack) when used in this circular refers to a parachute assembly, LESS THE HARNESS. This distinction is essential for a clear understanding.

15. PARACHUTING REQUIREMENTS. The attached table summarizes basic requirements for making intentional parachute jumps.



George S. Moore
Director
Flight Standards Service

PARACHUTING REQUIREMENTS

AC 105-1
11/19/63

Type of Jump	Kind of Authorization or Approval Required	Where to Obtain Authorization or Approval or Give Notice	When to Apply Federal Aviation or Give Notice	Regulation Reference
Over or into congested areas or open air assembly of persons.	Certificate of authorization	FAA General Aviation District Office	At least 4 days before the jump	105.15
Over an airport without U. S. operated control tower.	Prior approval	Airport Management	Before the jump	105.17
Onto an airport (with or without a U. S. operated control tower).	Prior approval	Airport Management	Before the jump	105.17
In or into control zone with U.S. operated control tower.	Authorization*	Control Tower	Before the jump	105.19
In or into positive control areas or positive control route segments.**	Authorization*	Air Route Traffic Control Center	At least 24 hours before the jump	105.21
In or into other controlled airspace.	None necessary	Nearest air traffic control facility or Flight Service Station	At least 6 hours before the jump	105.23
Over or within restricted or prohibited area.	Authorization*	The Agency in charge of area	Before the jump	105.27

*Usually means VERBAL authorization.
 **Areas are 24,000 to about 60,000 feet. Route segments are 17,000 to 23,000 feet.

NOTE: This table does not apply to jumps by the Armed Forces over or within restricted areas that are under control of an Armed Force, or during military operations in uncontrolled airspace.

Attachment 1
Page 1

Information Required for Notification. (FAR 105.25)

- (1) Date and time jumping will begin.
- (2) Location of the jumping site or drop zone in relation to the nearest city or town, and airport.
- (3) Altitudes above the surface at which jumping will take place.
- (4) Time and duration of the intended jumping.
- (5) Name, address, and telephone number of the person requesting the authorization or giving notice.
- (6) Identification of the aircraft to be used.
- (7) Radio frequencies, if any, available in the aircraft.

NOTE: Although not specifically required by Part 105, the FAA recommends that--(1) Notice not be given more than 24 hours in advance, except at locations where jumping is an everyday occurrence; (2) When jumps are canceled, notice be given as soon as possible to the ATC facility or Flight Service Station where the notice was originally filed; and (3) The proposed jump areas be coordinated with the nearest ATC facility for advisory information concerning other airspace operations.

Clearance-From-Clouds Requirements and Visibility Minimums. (FAR 105.29, 105.31)

Within the Continental Control Area: 1,000 feet under, 1,000 feet over, 1 mile horizontally from clouds. Flight visibility 5 miles.

Elsewhere: 500 feet under, 1,000 feet over, 2,000 feet horizontally from clouds. Flight visibility 3 miles.

"Controlled Airspace" means airspace, designated as continental control area, control area, control zone, or transition area, within which some or all aircraft may be subject to air traffic control. (FAR 1.1)

Parachute Equipment and Packing Requirements for Intentional Jumping. (FAR 105.43)

The parachutist must wear a single harness dual parachute pack, having at least one main parachute and one approved auxiliary parachute. The main parachute must have been packed by a certificated parachute rigger, or by the person making the jump, within 120 days before its use. The auxiliary parachute must have been packed by a certificated and appropriately rated parachute rigger within 60 days before its use.

5. PARACHUTE EQUIPMENT.

- a. General. FAR 105.43 prescribes that in intentional jumping the parachutist must wear a single harness dual parachute pack having at least one main parachute and one approved auxiliary parachute. The main pack (a back pack) need not be an "approved" pack, but the auxiliary (emergency) pack, and the harness, must be approved.
- b. "Approved." With respect to FAR 105.43(b), "approved" parachutes are:
 - (1) Parachutes manufactured under a type certificate (an early method of approval);
 - (2) Parachutes manufactured under Technical Standard Order (TSO) C23, which prescribes the minimum performance and quality control standards for a parachute carried for emergency use. These standards are met before the manufacturer labels the parachute, or its components, as complying with TSO C23. Practically all civil parachutes are manufactured to comply with that TSO and they may be used for either intentional or emergency jumping; or
 - (3) "Demilitarized parachutes." These are parachutes originally manufactured for use by the armed forces, often referred to as "military surplus."

6. ALTERATIONS.

- a. General. Alterations are changes to the original configuration, such as the removal of a gore, installation of lift webbing or fittings, addition of a deployment sleeve or bag, changing standard canopy attachment fittings to quick release fittings, and dyeing of a canopy.
- b. Who May Make Alterations. Under FAR 65.125 and 149.9, alterations may be performed only by one of the following:
 - (1) The manufacturer;
 - (2) Any other manufacturer the Administrator considers competent;
 - (3) A certificated master parachute rigger (or a person under his supervision); or
 - (4) A parachute loft.

- c. Main Pack of a Dual Parachute Rig. Alterations to the main pack may be made only by the persons or facilities listed under 6b above; however, the regulations do not require the manufacturer or the FAA to approve the alterations, even if they are extensive.

The FARs do not require a person who performs alterations to the main pack to keep a record of them, but the owner should keep a record of these alterations for future reference.

- d. Auxiliary Parachute (Pack and Harness) of a Dual Parachute Rig. Alterations to the auxiliary parachute components may be made only by the persons or facilities listed under 6b above. An auxiliary parachute that has been altered (or is to be altered) by these persons or facilities so that it is no longer an approved parachute as required by FAR 105.43(b) may be approved by either a manufacturer or the Administrator. See 5b above for a description of "approved" parachutes.

A person seeking approval to alter an auxiliary parachute should submit a request and a description of the alteration, in duplicate, to the manufacturer, or if FAA approval is desired, to the local FAA General Aviation District Office. It may be necessary (depending on the nature and extent of the alteration) to provide drawings and test data with the request to prove that the parachute still meets acceptable safety standards. If the FAA District Office inspector is unable to determine the acceptability of the alteration, he will forward the request and data to the appropriate engineering office.

A harness used for intentional jumping may be either manufactured for the purpose or altered to accommodate the attachment of the main pack and the auxiliary pack. Harness alterations are approved in the same manner as explained in the preceding paragraph, and the alterations may be made only by the persons or facilities listed under 6b above. The harness should be inspected by a certificated and rated parachute rigger when he inspects and repacks the auxiliary pack.

- e. Removal of Pilot Parachute. Under FAR 65.129(d), the Administrator has authorized certificated parachute riggers to remove the pilot chute from the auxiliary pack. Removal may be made by a senior or master parachute rigger, and the pack is to be plainly marked as follows: "Pilot chute not installed. This parachute may be used for intentional jumping only." A person using such a pack should deploy the main canopy not less than 2,500 feet above the ground, so that he will have enough altitude to safely deploy the auxiliary canopy.

f. Extra Equipment. When an instrument panel or a knife sheath is secured to the pack by passing the pack opening bands through panel or sheath slots, it is not considered to be an alteration.

7. ASSEMBLY OF DIFFERENT COMPONENTS FOR THE AUXILIARY PARACHUTE. The assembly or mating of different, but APPROVED, parachute components by a certificated and rated parachute rigger or parachute loft, may be made without an authorization from the manufacturer or the FAA; however, THE RESULTING ASSEMBLY SHOULD NOT ADVERSELY AFFECT THE FUNCTIONING OF THE PARTS AS ORIGINALLY INTENDED. For example, the assembly of a TSO pack to a demilitarized harness, or vice versa, is permitted, as long as the assembled components continue to comply with the safety standards of the original design. If there is any question about this, the parachute rigger should resolve the doubt by actual tests to make certain the parachute is safe for emergency use.
8. REPAIRS. Major repairs are defined in Part 1 of the FARs as a repair "that, if improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness." Other repairs are considered to be minor, and under FAR 65.125, any appropriately rated senior parachute rigger may make minor repairs. Examples are: replacement of a ripcord pocket, darning, or sewing a small patch on a canopy. However, under the regulations, only an appropriately rated master parachute rigger or a person under his supervision (FAR 65.125), or a parachute loft (FAR 149.23(b)), or a manufacturer, may make major repairs. Examples are: replacement of a canopy panel, suspension lines, or riser connector links.
9. CHROME PLATING OF FITTINGS. Load-carrying fittings are originally cadmium plated by the manufacturer. Chrome plating of them may cause hydrogen embrittlement which may result in their failure under stress. The parachutist should be aware of this possible hazard.
10. PILOT'S RESPONSIBILITY. Part 105 of the FARs places joint responsibility on the pilot in command of an aircraft for the safety of a parachute jump made from it, until the parachutist leaves the aircraft. The joint responsibility rules can be identified by their first statement which reads--"No person may make a parachute jump, and no pilot in command of an aircraft may allow"
11. JUMPS OVER OR INTO CONGESTED AREAS OR OPEN AIR ASSEMBLY OF PERSONS. Written authorization is required by FAR 105.15 for these jumps (except for emergencies and certain armed forces' operations). Advance application, of at least four days, is made to the FAA General Aviation

District Office in charge of the area where the jump is to take place. Note that the rule concerns jumps over or into CONGESTED AREAS or an OPEN AIR ASSEMBLY OF PERSONS. Jumps made into a large open area, even though it is within or near a populated area, or near an assembly of persons, do not require FAA authorization. However, the parachutist should be careful to completely clear the area or the assembly of persons.

The determination of whether the FAA will authorize a jump will depend on the circumstances of each case. The FAA will not authorize a jump that is hazardous to the public safety, or in some other way is contrary to the public interest. One of the main considerations in granting authorization would be the skill of the parachutist making the jump. The FAA office will probably require that a well-qualified person be used. That office may also ask for a prior demonstration of landing accuracy, but this would depend on such factors as the parachutist's record, his known ability, and the PCA license he holds.

12. JUMPS OVER OR ONTO AIRPORTS. FAR 105.17 requires prior approval of the airport management for jumps made OVER an airport, unless it has a functioning U. S. operated control tower (in which case the tower would grant approval). Prior approval of the airport management is also required for jumps made ONTO any airport. Of course, the airport management may delegate authority for such approval to the control tower, if one is present. When a parachutist does not have approval to land on or jump over an airport, the jump should be planned so that the parachutist stays well clear of that airport's traffic pattern. Otherwise, the jump may create a hazard to air traffic or to persons or property on the ground.
13. JUMPS IN OR INTO CONTROL ZONES WITH FUNCTIONING CONTROL TOWERS OPERATED BY THE UNITED STATES. FAR 105.19 requires an authorization from the control tower for these jumps. No advance notice is specified, but reasonable notice is desirable so that control tower personnel can adjust the jumps to expected traffic conditions. The authorization and instructions that are issued by the tower for the jumps are based on Visual Flight Rules (VFR) and known air traffic, and do not relieve the parachutist, or the pilot in command of the aircraft from compliance with all rules. When the jumps are to be made near an airport, that airport's management should receive prior notification of the jump.
14. OPERATING AIRCRAFT WITH DOOR REMOVED. Operation of an aircraft with a door removed may be authorized by issuance of a Supplementary Type Certificate or by complying with FAA Advisory Circular No. 91-1. The local FAA General Aviation District Office may be contacted regarding operating restrictions for the aircraft to be used.