US ACADEMY OF PARACHUTE RIGGING
FAA REGULATIONS

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PART 21

§ 21.3 Reporting of failures, malfunctions, and defects.

(a) Except as provided in paragraph (d) of this section, the holder of a Type Certificate (including a Supplemental Type Certificate), a Parts Manufacturer Approval (PMA), or a TSO authorization, or the licensee of a Type Certificate shall report any failure, malfunction, or defect in any product, part, process, or article manufactured by it that it determines has resulted in any of the occurrences listed in paragraph (c) of this section.

(d) The requirements of paragraph (a) of this section do not apply to—

(1) Failures, malfunctions, or defects that the holder of a Type Certificate (including a Supplemental Type Certificate), Parts Manufacturer Approval (PMA), or TSO authorization, or the licensee of a Type Certificate—

(i) Determines were caused by improper maintenance, or improper usage;

PART 65

Subpart A - General

§ 65.1 Applicability.

This part prescribes the requirements for issuing the following certificates and associated ratings and the general operating rules for the holders of those certificates and ratings:

(a) Air-traffic control-tower operators.

(b) Aircraft dispatchers.

(c) Mechanics.

(d) Repairmen.

(e) Parachute riggers.

§ 65.3 Certification of foreign airmen other than flight crewmembers.

A person who is neither a U.S. citizen nor a resident alien is issued a certificate under subpart D of this part, outside the United States, only when the Administrator finds that the certificate is needed for the operation or continued airworthiness of a U.S.-registered civil aircraft.

§ 65.11 Application and issue.

(a) Application for a certificate and appropriate class rating, or for an additional rating, under this part must be made on a form and in a manner prescribed by the Administrator. Each person who applies for airmen certification services to be administered outside the United States or for any certificate or rating issued under this part must show evidence that the fee prescribed in appendix A of part 187 of this chapter has been paid.

(b) An applicant who meets the requirements of this part is entitled to an appropriate certificate and rating.

(c) Unless authorized by the Administrator, a person whose air traffic control tower operator, mechanic, or parachute rigger certificate is suspended may not apply for any rating to be added to that certificate during the period of suspension.

(d) Unless the order of revocation provides otherwise—

(1) A person whose air traffic control tower operator, aircraft dispatcher, or parachute rigger certificate is revoked may not apply for the same kind of certificate for 1 year after the date of revocation; and

(2) A person whose mechanic or repairman certificate is revoked may not apply for either of those kinds of certificates for 1 year after the date of revocation.

§ 65.12 Offenses involving alcohol or drugs.

(a) A conviction for the violation of any Federal or state statute relating to the growing, processing, manufacture, sale, disposition, possession, transportation, or importation of narcotic drugs, marihuana, or depressant or stimulant drugs or substances is grounds for—

(1) Denial of an application for any certificate or rating issued under this part for a period of up to 1 year after the date of final conviction; or

(2) Suspension or revocation of any certificate or rating issued under this part.

(b) The commission of an act prohibited by §91.19(a) of this chapter is grounds for—

(1) Denial of an application for a certificate or rating issued under this part for a period of up to 1 year after the date of that act; or

(2) Suspension or revocation of any certificate or rating issued under this part.

§ 65.13 Temporary certificate.

A certificate and ratings effective for a period of not more than 120 days may be issued to a qualified applicant, pending review of his application and supplementary documents and the issue of the certificate and ratings for which he applied.

§ 65.14 Security disqualification.

(a) *Eligibility standard.* No person is eligible to hold a certificate, rating, or authorization issued under this part when the Transportation Security Administration (TSA) has notified the FAA in writing that the person poses a security threat.

(b) *Effect of the issuance by the TSA of an Initial Notification of Threat Assessment.* (1) The FAA will hold in abeyance pending the outcome of the TSA's final threat assessment review an application for any certificate, rating, or authorization under this part by any person who has been issued an Initial Notification of Threat Assessment by the TSA.

(2) The FAA will suspend any certificate, rating, or authorization issued under this part after the TSA issues to the holder an Initial Notification of Threat Assessment.

(c) *Effect of the issuance by the TSA of a Final Notification of Threat Assessment.* (1) The FAA will deny an application for any certificate, rating, or authorization under this part to any person who has been issued a Final Notification of Threat Assessment.

(2) The FAA will revoke any certificate, rating, or authorization issued under this part after the TSA has issued to the holder a Final Notification of Threat Assessment.

§ 65.15 Duration of certificates.

(a) Except for repairman certificates, a certificate or rating issued under this part is effective until it is surrendered, suspended, or revoked.

(b) Unless it is sooner surrendered, suspended, or revoked, a repairman certificate is effective until the holder is relieved from the duties for which the holder was employed and certificated.

(c) The holder of a certificate issued under this part that is suspended, revoked, or no longer effective shall return it to the Administrator.

§ 65.16 Change of name: Replacement of lost or destroyed certificate.

(a) An application for a change of name on a certificate issued under this part must be accompanied by the applicant's current certificate and the marriage license, court order, or other document verifying the change. The documents are returned to the applicant after inspection.

(b) An application for a replacement of a lost or destroyed certificate is made by letter to the Department of Transportation, Federal Aviation Administration, Airman Certification Branch, Post Office Box 25082, Oklahoma City, OK 73125. The letter must—

(1) Contain the name in which the certificate was issued, the permanent mailing address (including zip code), social security number (if any), and date and place of birth of the certificate holder, and any available information regarding the grade, number, and date of issue of the certificate, and the ratings on it; and

(2) Be accompanied by a check or money order for $2, payable to the Federal Aviation Administration.

(c) An application for a replacement of a lost or destroyed medical certificate is made by letter to the Department of Transportation, Federal Aviation Administration, Civil Aeromedical Institute, Aeromedical Certification Branch, Post Office Box 25082, Oklahoma City, OK 73125, accompanied by a check or money order for $2.00.

(d) A person whose certificate issued under this part or medical certificate, or both, has been lost may obtain a telegram from the FAA confirming that it was issued. The telegram may be carried as a certificate for a period not to exceed 60 days pending his receiving a duplicate certificate under paragraph (b) or (c) of this section, unless he has been notified that the certificate has been suspended or revoked. The request for such a telegram may be made by prepaid telegram, stating the date upon which a duplicate certificate was requested, or including the request for a duplicate and a money order for the necessary amount. The request for a telegraphic certificate should be sent to the office prescribed in paragraph (b) or (c) of this section, as appropriate. However, a request for both at the same time should be sent to the office prescribed in paragraph (b) of this section.

§ 65.17 Tests: General procedure.

(a) Tests prescribed by or under this part are given at times and places, and by persons, designated by the Administrator.

(b) The minimum passing grade for each test is 70 percent.

§ 65.18 Written tests: Cheating or other unauthorized conduct.

(a) Except as authorized by the Administrator, no person may—

(1) Copy, or intentionally remove, a written test under this part;

(2) Give to another, or receive from another, any part or copy of that test;

(3) Give help on that test to, or receive help on that test from, any person during the period that test is being given;

(4) Take any part of that test in behalf of another person;

(5) Use any material or aid during the period that test is being given; or

(6) Intentionally cause, assist, or participate in any act prohibited by this paragraph.

(b) No person who commits an act prohibited by paragraph (a) of this section is eligible for any airman or ground instructor certificate or rating under this chapter for a period of 1 year after the date of that act. In addition, the commission of that act is a basis for suspending or revoking any airman or ground instructor certificate or rating held by that person.

§ 65.19 Retesting after failure.

An applicant for a written, oral, or practical test for a certificate and rating, or for an additional rating under this part, may apply for retesting—

(a) After 30 days after the date the applicant failed the test; or

(b) Before the 30 days have expired if the applicant presents a signed statement from an airman holding the certificate and rating sought by the applicant, certifying that the airman has given the applicant additional instruction in each of the subjects failed and that the airman considers the applicant ready for retesting.

§ 65.20 Applications, certificates, logbooks, reports, and records: Falsification, reproduction, or alteration.

(a) No person may make or cause to be made—

(1) Any fraudulent or intentionally false statement on any application for a certificate or rating under this part;

(2) Any fraudulent or intentionally false entry in any logbook, record, or report that is required to be kept, made, or used, to show compliance with any requirement for any certificate or rating under this part;

(3) Any reproduction, for fraudulent purpose, of any certificate or rating under this part; or

(4) Any alteration of any certificate or rating under this part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for suspending or revoking any airman or ground instructor certificate or rating held by that person.

§ 65.21 Change of address.

Within 30 days after any change in his permanent mailing address, the holder of a certificate issued under this part shall notify the Department of Transportation, Federal Aviation Administration, Airman Certification Branch, Post Office Box 25082, Oklahoma City, OK 73125, in writing, of his new address.

§ 65.23 Refusal to submit to a drug or alcohol test.

(a) *General.* This section applies to an individual who holds a certificate under this part and is subject to the types of testing required under appendix I to part 121 or appendix J to part 121 of this chapter.

(b) Refusal by the holder of a certificate issued under this part to take a drug test required under the provisions of appendix I to part 121 or an alcohol test required under the provisions of appendix J to part 121 is grounds for—

(1) Denial of an application for any certificate or rating issued under this part for a period of up to 1 year after the date of such refusal; and

(2) Suspension or revocation of any certificate or rating issued under this part.

SUBPART F – PARACHUTE RIGGERS

§ 65.111 Certificate required.

(a) No person may pack, maintain, or alter any personnel-carrying parachute intended for emergency use in connection with civil aircraft of the United States (including the reserve parachute of a dual parachute system to be used for intentional parachute jumping) unless that person holds an appropriate current certificate and type rating issued under this subpart and complies with §§65.127 through 65.133.

(b) No person may pack, maintain, or alter any main parachute of a dual-parachute system to be used for intentional parachute jumping in connection with civil aircraft of the United States unless that person—

(1) Has an appropriate current certificate issued under this subpart;

(2) Is under the supervision of a current certificated parachute rigger;

(3) Is the person making the next parachute jump with that parachute in accordance with §105.43(a) of this chapter; or

(4) Is the parachutist in command making the next parachute jump with that parachute in a tandem parachute operation conducted under §105.45(b)(1) of this chapter.

(c) Each person who holds a parachute rigger certificate shall present it for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.

(d) The following parachute rigger certificates are issued under this part:

(1) Senior parachute rigger.

(2) Master parachute rigger.

(e) Sections 65.127 through 65.133 do not apply to parachutes packed, maintained, or altered for the use of the armed forces.

§ 65.113 Eligibility requirements: General.

(a) To be eligible for a parachute rigger certificate, a person must—

(1) Be at least 18 years of age;

(2) Be able to read, write, speak, and understand the English language, or, in the case of a citizen of Puerto Rico, or a person who is employed outside of the United States by a U.S. air carrier, and who does not meet this requirement, be issued a certificate that is valid only in Puerto Rico or while he is employed outside of the United States by that air carrier, as the case may be; and

(3) Comply with the sections of this subpart that apply to the certificate and type rating he seeks.

(b) Except for a master parachute rigger certificate, a parachute rigger certificate that was issued before, and was valid on, October 31, 1962, is equal to a senior parachute rigger certificate, and may be exchanged for such a corresponding certificate.

§ 65.115 Senior parachute rigger certificate: Experience, knowledge, and skill requirements.

Except as provided in §65.117, an applicant for a senior parachute rigger certificate must—

(a) Present evidence satisfactory to the Administrator that he has packed at least 20 parachutes of each type for which he seeks a rating, in accordance with the manufacturer's instructions and under the supervision of a certificated parachute rigger holding a rating for that type or a person holding an appropriate military rating;

(b) Pass a written test, with respect to parachutes in common use, on—

(1) Their construction, packing, and maintenance;

(2) The manufacturer's instructions;

(3) The regulations of this subpart; and

(c) Pass an oral and practical test showing his ability to pack and maintain at least one type of parachute in common use, appropriate to the type rating he seeks.

§ 65.117 Military riggers or former military riggers: Special certification rule.

In place of the procedure in §65.115, an applicant for a senior parachute rigger certificate is entitled to it if he passes a written test on the regulations of this subpart and presents satisfactory documentary evidence that he—

(a) Is a member or civilian employee of an Armed Force of the United States, is a civilian employee of a regular armed force of a foreign country, or has, within the 12 months before he applies, been honorably discharged or released from any status covered by this paragraph;

(b) Is serving, or has served within the 12 months before he applies, as a parachute rigger for such an Armed Force; and

(c) Has the experience required by §65.115(a).

§ 65.119 Master parachute rigger certificate: Experience, knowledge, and skill requirements.

An applicant for a master parachute rigger certificate must meet the following requirements:

(a) Present evidence satisfactory to the Administrator that he has had at least 3 years of experience as a parachute rigger and has satisfactorily packed at least 100 parachutes of each of two types in common use, in accordance with the manufacturer's instructions—

(1) While a certificated and appropriately rated senior parachute rigger; or

(2) While under the supervision of a certificated and appropriately rated parachute rigger or a person holding appropriate military ratings.

An applicant may combine experience specified in paragraphs (a) (1) and (2) of this section to meet the requirements of this paragraph.

(b) If the applicant is not the holder of a senior parachute rigger certificate, pass a written test, with respect to parachutes in common use, on—

(1) Their construction, packing, and maintenance;

(2) The manufacturer's instructions; and

(3) The regulations of this subpart.

(c) Pass an oral and practical test showing his ability to pack and maintain two types of parachutes in common use, appropriate to the type ratings he seeks.

§ 65.121 Type ratings.

(a) The following type ratings are issued under this subpart:

(1) Seat.

(2) Back.

(3) Chest.

(4) Lap.

(b) The holder of a senior parachute rigger certificate who qualifies for a master parachute rigger certificate is entitled to have placed on his master parachute rigger certificate the ratings that were on his senior parachute rigger certificate.

§ 65.123 Additional type ratings: Requirements.

A certificated parachute rigger who applies for an additional type rating must—

(a) Present evidence satisfactory to the Administrator that he has packed at least 20 parachutes of the type for which he seeks a rating, in accordance with the manufacturer's instructions and under the supervision of a certificated parachute rigger holding a rating for that type or a person holding an appropriate military rating; and

(b) Pass a practical test, to the satisfaction of the Administrator, showing his ability to pack and maintain the type of parachute for which he seeks a rating.

§ 65.125 Certificates: Privileges.

(a) A certificated senior parachute rigger may—

(1) Pack or maintain (except for major repair) any type of parachute for which he is rated; and

(2) Supervise other persons in packing any type of parachute for which that person is rated in accordance with §105.43(a) or §105.45(b)(1) of this chapter.

(b) A certificated master parachute rigger may—

(1) Pack, maintain, or alter any type of parachute for which he is rated; and

(2) Supervise other persons in packing, maintaining, or altering any type of parachute for which the certificated parachute rigger is rated in accordance with §105.43(a) or §105.45(b)(1) of this chapter.

(c) A certificated parachute rigger need not comply with §§65.127 through 65.133 (relating to facilities, equipment, performance standards, records, recent experience, and seal) in packing, maintaining, or altering (if authorized) the main parachute of a dual parachute pack to be used for intentional jumping.

§ 65.127 Facilities and equipment.

No certificated parachute rigger may exercise the privileges of his certificate unless he has at least the following facilities and equipment available to him:

(a) A smooth top table at least three feet wide by 40 feet long.

(b) Suitable housing that is adequately heated, lighted, and ventilated for drying and airing parachutes.

(c) Enough packing tools and other equipment to pack and maintain the types of parachutes that he services.

(d) Adequate housing facilities to perform his duties and to protect his tools and equipment.

§ 65.129 Performance standards.

No certificated parachute rigger may—

(a) Pack, maintain, or alter any parachute unless he is rated for that type;

(b) Pack a parachute that is not safe for emergency use;

(c) Pack a parachute that has not been thoroughly dried and aired;

(d) Alter a parachute in a manner that is not specifically authorized by the Administrator or the manufacturer;

(e) Pack, maintain, or alter a parachute in any manner that deviates from procedures approved by the Administrator or the manufacturer of the parachute; or

(f) Exercise the privileges of his certificate and type rating unless he understands the current manufacturer's instructions for the operation involved and has—

(1) Performed duties under his certificate for at least 90 days within the preceding 12 months; or

(2) Shown the Administrator that he is able to perform those duties.

§ 65.131 Records.

(a) Each certificated parachute rigger shall keep a record of the packing, maintenance, and alteration of parachutes performed or supervised by him. He shall keep in that record, with respect to each parachute worked on, a statement of—

(1) Its type and make;

(2) Its serial number;

(3) The name and address of its owner;

(4) The kind and extent of the work performed;

(5) The date when and place where the work was performed; and

(6) The results of any drop tests made with it.

(b) Each person who makes a record under paragraph (a) of this section shall keep it for at least 2 years after the date it is made.

(c) Each certificated parachute rigger who packs a parachute shall write, on the parachute packing record attached to the parachute, the date and place of the packing and a notation of any defects he finds on inspection. He shall sign that record with his name and the number of his certificate.

§ 65.133 Seal.

Each certificated parachute rigger must have a seal with an identifying mark prescribed by the Administrator, and a seal press. After packing a parachute he shall seal the pack with his seal in accordance with the manufacturer's recommendation for that type of parachute.

PART 91

§ 91.307 Parachutes and parachuting.

(a) No pilot of a civil aircraft may allow a parachute that is available for emergency use to be carried in that aircraft unless it is an approved type and—

(1) If a chair type (canopy in back), it has been packed by a certificated and appropriately rated parachute rigger within the preceding 120 days; or

(2) If any other type, it has been packed by a certificated and appropriately rated parachute rigger—

(i) Within the preceding 120 days, if its canopy, shrouds, and harness are composed exclusively of nylon, rayon, or other similar synthetic fiber or materials that are substantially resistant to damage from mold, mildew, or other fungi and other rotting agents propagated in a moist environment; or

(ii) Within the preceding 60 days, if any part of the parachute is composed of silk, pongee, or other natural fiber, or materials not specified in paragraph (a)(2)(i) of this section.

(b) Except in an emergency, no pilot in command may allow, and no person may conduct, a parachute operation from an aircraft within the United States except in accordance with part 105 of this chapter.

(c) Unless each occupant of the aircraft is wearing an approved parachute, no pilot of a civil aircraft carrying any person (other than a crewmember) may execute any intentional maneuver that exceeds—

(1) A bank of 60 degrees relative to the horizon; or

(2) A nose-up or nose-down attitude of 30 degrees relative to the horizon.

(d) Paragraph (c) of this section does not apply to—

(1) Flight tests for pilot certification or rating; or

(2) Spins and other flight maneuvers required by the regulations for any certificate or rating when given by—

(i) A certificated flight instructor; or

(ii) An airline transport pilot instructing in accordance with §61.67 of this chapter.

(e) For the purposes of this section, *approved parachute* means—

(1) A parachute manufactured under a type certificate or a technical standard order (C–23 series); or

(2) A personnel-carrying military parachute identified by an NAF, AAF, or AN drawing number, an AAF order number, or any other military designation or specification number.

PART 105

Subpart C—Parachute Equipment and Packing

§ 105.41 Applicability.

This subpart prescribed rules governing parachute equipment used in civil parachute operations.

§ 105.43 Use of single-harness, dual-parachute systems.

No person may conduct a parachute operation using a single-harness, dual-parachute system, and no pilot in command of an aircraft may allow any person to conduct a parachute operation from that aircraft using a single-harness, dual-parachute system, unless that system has at least one main parachute, one approved reserve parachute, and one approved single person harness and container that are packed as follows:

(a) The main parachute must have been packed within 120 days before the date of its use of a certificated parachute rigger, the person making the next jump with that parachute, or a non-certificated person under the direct supervision of a certification parachute rigger.

(b) The reserve parachute must have been packed by a certificated parachute rigger—

(1) Within 120 days before the date of its use, if its canopy, shroud, and harness are composed exclusively of nylon, rayon, or similar synthetic fiber or material that is substantially resistant to damage from mold, mildew, and other fungi, and other rotting agents propagated in a moist environment; or

(2) Within 60 days before the date of its use, if it is composed of any amount of silk, pongee, or other natural fiber, or material not specified in paragraph (b)(1) of this section.

(c) If installed, the automatic activation device must be maintained in accordance with manufacturer instructions for that automatic activation device.

§ 105.45 Use of tandem parachute systems.

(a) No person may conduct a parachute operation using a tandem parachute system, and no pilot in command of an aircraft may allow any person to conduct a parachute operation from that aircraft using a tandem parachute system, unless—

(1) One of the parachutists using the tandem parachute system is the parachutist in command, and meets the following requirements:

(i) Has a minimum of 3 years of experience in parachuting, and must provide documentation that the parachutist—

(ii) Has completed a minimum of 500 freefall parachute jumps using a ram-air parachute, and

(iii) Holds a master parachute license issued by an organization recognized by the FAA, and

(iv) Has successfully completed a tandem instructor course given by the manufacturer of the tandem parachute system used in the parachute operation or a course acceptable to the Administrator.

(v) Has been certified by the appropriate parachute manufacturer or tandem course provider as being properly trained on the use of the specific tandem parachute system to be used.

(2) The person acting as parachutist in command:

(i) Has briefed the passenger parachutist before boarding the aircraft. The briefing must include the procedures to be used in case of an emergency with the aircraft or after exiting the aircraft, while preparing to exit and exiting the aircraft, freefall, operating the parachute after freefall, landing approach, and landing.

(ii) Uses the harness position prescribed by the manufacturer of the tandem parachute equipment.

(b) No person may make a parachute jump with a tandem parachute system unless—

(1) The main parachute has been packed by a certificated parachute rigger, the parachutist in command making the next jump with that parachute, or a person under the direct supervision of a certificated parachute rigger.

(2) The reserve parachute has been packed by a certificated parachute rigger in accordance with §105.43(b) of this part.

(3) The tandem parachute system contains an operational automatic activation device for the reserve parachute, approved by the manufacturer of that tandem parachute system. The device must—

(i) Have been maintained in accordance with manufacturer instructions, and

(ii) Be armed during each tandem parachute operation.

(4) The passenger parachutist is provided with a manual main parachute activation device and instructed on the use of that device, if required by the owner/operator.

(5) The main parachute is equipped with a single-point release system.

(6) The reserve parachute meets Technical Standard Order C23 specifications.

§ 105.47 Use of static lines.

(a) Except as provided in paragraph (c) of this section, no person may conduct a parachute operation using a static line attached to the aircraft and the main parachute unless an assist device, described and attached as follows, is used to aid the pilot chute in performing its function, or, if no pilot chute is used, to aid in the direct deployment of the main parachute canopy. The assist device must—

(1) Be long enough to allow the main parachute container to open before a load is placed on the device.

(2) Have a static load strength of—

(i) At least 28 pounds but not more than 160 pounds if it is used to aid the pilot chute in performing its function; or

(ii) At least 56 pounds but not more than 320 pounds if it is used to aid in the direct deployment of the main parachute canopy; and

(3) Be attached as follows:

(i) At one end, to the static line above the static-line pins or, if static-line pins are not used, above the static-line ties to the parachute cone.

(ii) At the other end, to the pilot chute apex, bridle cord, or bridle loop, or, if no pilot chute is used, to the main parachute canopy.

(b) No person may attach an assist device required by paragraph (a) of this section to any main parachute unless that person is a certificated parachute rigger or that person makes the next parachute jump with that parachute.

(c) An assist device is not required for parachute operations using direct-deployed, ram-air parachutes.

§ 105.49 Foreign parachutists and equipment.

(a) No person may conduct a parachute operation, and no pilot in command of an aircraft may allow a parachute operation to be conducted from that aircraft with an unapproved foreign parachute system unless—

(1) The parachute system is worn by a foreign parachutist who is the owner of that system.

(2) The parachute system is of a single-harness dual parachute type.

(3) The parachute system meets the civil aviation authority requirements of the foreign parachutist's country.

(4) All foreign non-approved parachutes deployed by a foreign parachutist during a parachute operation conducted under this section shall be packed as follows—

(i) The main parachute must be packed by the foreign parachutist making the next parachute jump with that parachute, a certificated parachute rigger, or any other person acceptable to the Administrator.

(ii) The reserve parachute must be packed in accordance with the foreign parachutist's civil aviation authority requirements, by a certificated parachute rigger, or any other person acceptable to the Administrator.

Advisory circular 105-2C
Subject: Sport Parachute Jumping

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1. Purpose

This advisory circular (AC) provides suggestions to improve sport parachuting safety and disseminates information to assist all parties associated with sport parachuting in complying with Federal Aviation Regulations (FAR) Part 105, Parachute Jumping. It also contains a list of aircraft which may be operated with one cabin door removed and includes procedures for obtaining Federal Aviation Administration (FAA) authorization for flight with the door removed.

2. Cancellation

AC 105-2B, Sport Parachute Jumping, dated August 21, 1989, is cancelled.
Note: Distribution of this AC (105-2B) was not made.

3. Background

A. Sport parachute jumping (also called skydiving) activity continues to increase and is an FAA-recognized aeronautical activity. Even though parachutists (also called skydivers) are not certificated airmen the FAA recommends that all beginning parachutists obtain formal training. Training should be conducted in accordance with the United States Parachute Association (USPA) training recommendations or by training programs from other similar organizations.

B. Skydiving has certain inherent risks especially for students. In response to this risk, the skydiving community has developed procedures and practices to reduce the risk factors. A significant level of safety can be maintained by following these procedures and by properly preparing for each parachute jump. Developments in parachuting continue to contribute to the advancement of aviation technology and aviation safety.

C. In the revision process of this AC, the FAA solicited comments from the parachute industry and users. The USPA should be contacted for state-of-the-art information which relates to parachute jumping that is not specifically mentioned in this AC (see paragraph 5c).

4. Safety suggestions

A. Medical. All prospective skydivers are urged to receive a physical examination prior to their first jump. The physician should be informed of the purpose of the examination.

B. Initial Training. The FAA encourages beginning parachutists to seek instruction from a parachuting instructor recognized by the USPA. Initial training sets the foundation for the skydiver's continued education and advancement.

C. Current sport parachute student training programs include the following programs, details of which can be obtained from the USPA (see paragraph 5c).

1. The static line progression method.

2. The accelerated free fall progression method.

3. Tandem jumping, which uses a dual harness and dual pack parachute system.

D. FAR, technical standard orders (TSO), and AC's on sport parachuting with which all skydivers and jump pilots should be familiar:

1. FAR Part 65-Certification: Airmen Other Than Flight Crewmembers.

2. FAR Part 91-General Operating and Flight Rules.

3. FAR Part 105-Parachute Jumping.

4. FAR Part 149-Parachute Lofts.

5. TSO-C23c, Personnel Parachute Assemblies.

6. AC 65-5 (latest edition), Parachute Rigger-Senior/Master Certification Guide.

7. AC 140-7 (latest edition), Federal Aviation Administration Certificated Maintenance Agencies Directory. Note: See paragraph 5 for more detailed information.

E. Safety Devices and Equipment.

1. Deployment Assist Device. FAR Section 105.43(b) requires all persons making a parachute jump with a static line attached to the aircraft and the main parachute to use an assist device to aid the pilot chute in performing its function or, if no pilot chute is used, to aid in the direct deployment of the main parachute canopy.

2. Automatic Activation Devices. A jumper may have a tendency to feel more at ease if equipped with an automatic activation device (AAD). However, experience shows that such devices may not be completely reliable and should be used only as a backup to proper training and procedures. Skydivers who use an AAD on their reserve/auxiliary parachute should ensure that the installation of such a device has been approved by the parachute manufacturer or the FAA (see paragraph 8). The FAA does not approve AAD's. They do approve the installation which is submitted with the manufacturer's TSO paperwork. The manufacturer's instructions for installation should be followed. The installation of an AAD to a TSO or military specification (MIL-SPEC)-approved parachute constitutes a major alteration to that parachute. A jumper who uses any type of AAD should be aware of its level of reliability and become fully proficient with the device. A prejump check should be made for proper setting, arming, and operational reliability to ensure proper functioning of the AAD. When the situation requires use of the reserve parachute, the jumper should always manually pull the reserve/auxiliary ripcord even when using an AAD.

3. Water Safety Equipment. Some type of flotation gear should be worn whenever the intended exit point, or landing point of a skydiver is within 1 mile of an open body of water.

4. Oxygen Equipment. Jumpers should use supplemental breathing oxygen when the jump aircraft is at altitudes above 10,000 feet mean sea level (MSL) for more than 30 minutes. Oxygen must be used continuously at all times above 15,000 feet MSL. Above 25,000 MSL, pressure demand oxygen systems should be used. High altitude jumps should be made only after first becoming familiar with the problems and hazards created by low temperatures, lack of oxygen, and the various types of oxygen equipment. High altitude jumps should not be attempted under any circumstances without an adequate supply of breathing oxygen (welding and medical oxygen is unsafe and should not be used).

F. Weather. Strong or gusty winds can be dangerous especially to student jumpers. In addition, skydivers and pilots should ensure that there is adequate ceiling and visibility (see paragraph 14i).

G. Advanced Parachuting. Many of the safety suggestions presented in this AC are intended primarily for the student parachutist. All student jumps should be made in a controlled training environment. Individual experience and judgement dictate what additional training should be obtained before undertaking more advanced parachuting activities. Acquire proper experience and training before using unfamiliar or high- performance parachute equipment.

5. Information on regulations and associated publications

A. FAR. This paragraph describes the FAR parts which are of interest to skydivers and jump aircraft pilots. They may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325. AC 00-44 (latest edition), Status of Federal Aviation Regulation, contains ordering instructions, prices, and stock numbers. This AC is based on FAR requirements in effect on the date of this AC. Since the FAR may be amended at any time, skydivers and pilots should keep up with changes in the FAR and always comply with current requirements.

1. FAR Part 65-Certification: Airmen Other Than Flight Crewmembers. Subpart F concerns parachute riggers, their eligibility requirements, privileges and performance standards.

2. FAR Part 91-General Operating and Flight Rules. FAR Section 91.307, Parachutes and Parachuting, prohibits a pilot of a civil aircraft from allowing an emergency parachute to be carried aboard that aircraft unless it is an approved type.

3. FAR Part 105-Parachute Jumping. This part is especially important to parachutists and to the pilots who fly them since it contains the rules on intentional parachute jumping.

B. TSO-C23c sets forth the minimum performance and safety requirements for parachutes. TSO-C23c may be obtained by writing to the FAA, Aircraft Certification Service, Aircraft Engineering Division (AIR-100), 800 Independence Avenue, SW., Washington, D.C. 20591.

C. The USPA has developed basic safety standards and additional information for skydiving activities. These standards and information are for training, checking equipment, and conducting a wide variety of sport parachuting activities. While not officially approved by the FAA, these standards are widely used for guidance by individuals and parachute centers. They may be obtained from the United States Parachute Association, 1440 Duke Street, Alexandria, Virginia 22314, telephone (703) 836-3495.

6. Parachute rules

FAR Section 1.1 defines a parachute as 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 AC, a parachute assembly normally, but not exclusively, consists of the following major components: a canopy, a deployment device, a pilot chute and/or drogue, risers, a stowage container, a harness(es), and an actuation device (ripcord). There are, of course, some lesser parts associated with these main components such as connector links, bridles, and hardware. The term pack (such as backpack or chestpack), when used in this AC, refers to the parachute assembly less the harness. In the case where the harness and parachute are TSO-approved as an intended component, the term pack refers to the complete parachute assembly, less the main canopy and risers. This distinction is essential for a clear understanding relating to the use, packing, repairing, and alteration of parachutes.

A. Parachute Equipment. FAR Section 105.43 requires a parachutist making an intentional jump to wear a single harness dual pack parachute having at least one main parachute and one approved auxiliary/reserve parachute. The main pack need not be an approved type, but the auxiliary/reserve pack and the harness are required to be an FAA-approved type. The FAA issues a TSO which specifies the minimum performance standard for materials, parts, processes, or appliances used on civil aircraft. (See FAR Part 43, Appendix A(4). The following are examples of approved parachutes as explained in FAR Section 105.43(d).

1. Parachutes manufactured under a type certificate (an early method of approval).

2. Parachutes manufactured under TSO-C23. This TSO, the most recent version of which is TSO-C23c, prescribes the minimum performance and quality assurance standards for a parachute which is carried aboard civil aircraft or by

skydivers for emergency use. The manufacturer must meet these standards before labeling its parachute or components as complying with the TSO.

3. Military parachutes (other than high altitude, high speed, or ejection kinds) are identified by a Naval Air Facility (NAF), Army Air Field (AAF), or Air Force-Navy (AFN) drawing number, an AAF order number, or any other military designation or specification number. These parachutes are often referred to as demilitarized or military surplus parachutes.

7. Parachute packing

FAR Section 105.43 requires that a certificated and appropriately rated parachute rigger pack the reserve/auxiliary parachute. The main parachute may be packed by:1. Any certificated parachute rigger; or 2. Anyone under the supervision of a certificated parachute rigger. However, only those who have been thoroughly checked out by a certificated parachute rigger or USPA-rated instructor should attempt to pack for themselves. The FAA requires each parachute to be packed as follows:

A. A certificated parachute rigger or the person making the jump must have packed the main parachute within 120 days before the date of its use.

B. A certificated and appropriately rated parachute rigger must have packed the auxiliary/reserve parachute:

1. Within 120 days before the date of use, if its canopy, shroud, and harness are composed exclusively of nylon, rayon, or other similar synthetic fiber or material that is substantially resistant to damage from mold, mildew, or other rotting agents propagated in a moist environment; or

2. Within 60 days before the date of use, if the assembly is composed in any amount of silk, pongee, or any other natural fiber or material not specified above.

8. Parachute alterations

Parachute alterations are changes to the FAA-approved configuration. Examples include installation of reinforcement tape or fittings, alteration of the harness such as changing the size, removal of a manufacturer-installed part, or the installation of an AAD on an auxiliary/reserve parachute system in which the manufacturer does not authorize such installation.

A. An alteration to an approved parachute system used for intentional jumping must be done in accordance with approved manuals and specifications and only by those with specific authorization to perform that alteration. Specific approval is not needed for the method of altering a main parachute. A person seeking authorization to alter an approved parachute system should proceed as follows:

1. A person qualified to alter a parachute (as listed below) should contact his/her local FAA Flight Standards District Office (FSDO) inspector to discuss the proposed alteration. The applicant should be prepared to show the inspector the nature of the alteration by using a sample assembly, sketch or drawing, and be prepared to
discuss the nature of the tests that will be needed to show the altered parachute meets all applicable requirements.

2. The inspector will review the proposal with the applicant, and a plan of action will be agreed upon.

3. The applicant will then prepare an application, in letter form, addressed to the local FSDO. All pertinent data should be attached. The data should include:

a. A clear description of the alteration.

b. Drawings, sketches, or photographs if necessary.

c. Information such as thread size, stitch, pattern, materials used, and location of altered components.

d. Some means of identifying the altered parachute (model and serial number).

4. When satisfied, the inspector will indicate approval by date stamping, signing, and placing the FSDO identification stamp on the letter of application.

a. Alterations to Approved Parachutes may be Performed Only By:

1) A certificated and appropriately rated master parachute rigger.

2) A certificated parachute loft with an appropriate rating.

3) A parachute manufacturer.

4) Any other manufacturer that the Administrator considers to be competent.

9. Removal of pilot chute

A certificated senior or master parachute rigger may remove the pilot chute from an auxiliary/reserve parachute. When this is done, the parachute must be plainly marked "PILOT CHUTE REMOVED. This parachute may be used for intentional jumping only."

10. Extra equipment

Attachment of an instrument panel, knife sheath, or other material to the exterior of the parachute assembly is not considered an alteration. If any extra equipment is attached to a harness, care should be taken not to impair the functional design of the system.

11. Assembly of major parachute components

A. The assembly or mating of approved parachute components from different manufacturers may be made by a certificated appropriately rated parachute rigger or parachute loft in accordance with the parachute manufacturer's instructions and without further authorization by the manufacturer or the FAA. Specifically, when various parachute components are interchanged, the parachute rigger should follow the canopy manufacturer's instructions as well as the parachute container manufacturer's instructions. However, the container manufacturer's instructions take precedence when there is a conflict between the two.

B. Assembled Parachute Components Must be Compatible. Each component of the resulting assembly must function properly and may not interfere with the operation of the other components. For example:

1. Do not install a high volume canopy into a low-volume parachute container since the proper functioning of the entire parachute assembly could be adversely affected.

2. A TSO'ed canopy may be assembled with a demilitarized harness, or vice versa, as long as the assembled components comply with the safety standard of the original design.

C. Any questions about the operation of the assembly should be resolved by actual tests by the rigger or loft to make certain the parachute is safe for emergency use.

D. The parachute rigger or the parachute loft who are assembling components manufactured under TSO-C23c will record, in the space provided on the container, the data required by Aerospace Standard AS-8015B, paragraph 4.2.1. (Copies may be obtained from the Engineering Society for Advancing Mobility Land, Sea, Air and Space, 400 Commonwealth Drive, Warrendale, PA 15096-0001.)

E. The strength of the harness must always be equal to or greater than the maximum force generated by the canopy during certification tests.

1. In a case where the harness is certificated under TSO-C23b and the canopy under TSO-C23c, the maximum generated force of the canopy must not exceed the certificated category force of the harness and container; i.e., Low-Speed Category (3,000 lbs.) and Standard Category (5,000 lbs.). In this instance, no additional marking on the container is necessary.

2. In the case where the canopy is certificated under the TSO-C23b and the harness under TSO-C23c, the strength of the harness must be equal to or greater than the certificated category force of the canopy.

F. The user of a single harness, dual pack parachute system, which is a sport assembly consisting of a main and auxiliary/reserve parachute, may perform simple assembly and disassembly operations necessary for transportation, handling, or storage between periods of use if the parachute is designed to simplify such assembly and disassembly without the use of complex operations.

12. Repairs

Parachute repairs can be classed as major repairs or minor repairs. A major repair, as defined in FAR Section 1.1, is a repair "...that, if improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness." (Balance and powerplant operation do not apply to parachutes.) A minor repair, as defined in FAR Section 1.1, "...means a repair other than a major repair." Major repairs to parachutes may be made by a master parachute rigger, an appropriately rated parachute loft, or a manufacturer. Examples of major repairs are replacement of a canopy panel or suspension line, or sewing a large patch on a canopy. The parachute manufacturer's instructions should be followed when completing repairs to any portion of the parachute.

13. Plating of fittings

Plating or replating of load-carrying parachute fittings may cause hydrogen embrittlement and subsequent failure under stress unless the plating is done properly. Chrome plated harness adjustment hardware may also have a smoother finish than the original and may permit slippage. The parachutist should be aware of these possible hazards.