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**FINAL REGULATORY EVALUATION, FINAL
REGULATORY FLEXIBILITY DETERMINATION,
INTERNATIONAL TRADE IMPACT ASSESSMENT,
AND UNFUNDED MANDATES ASSESSMENT**

PARACHUTE OPERATIONS

**Final Rule
(14 CFR PARTS 65, 91, 105, and 119)**

**OFFICE OF AVIATION POLICY AND PLANS
OPERATIONS REGULATORY ANALYSIS BRANCH, APO-310**

Mohan A. Samtani
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EXECUTIVE SUMMARY

This regulatory evaluation examines the potential costs and benefits of the Final Rule to reorganize and revise the rules--parts 65, 91, 105, and 119--applicable to parachute operations. The Federal Aviation Administration (FAA) is implementing these changes to improve existing operating procedures and to clarify the intent of these rules.

The FAA has determined that there will be negligible additional cost, if any, associated with the revision of these rules as described in this final rule. For the most part, the revision reflects current practice and equipment used today in the industry. The benefits of such revision will be to reduce the likelihood of midair collision involving aircraft engaged in parachute operations, and to reduce the risk of aircraft coming in proximity to parachutists who were descending to the ground near an airport or within controlled airspace. As a result, the final rule will enhance the safety of parachute operations in the National Airspace System (NAS).

The final rule will not have a significant impact on a substantial number of small entities nor constitute a barrier to international trade. In addition, the final rule does not contain any Federal intergovernmental or private sector mandates;

therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

I. INTRODUCTION

This regulatory evaluation is performed in accordance with Executive Order 12866, which requires analysis of each regulation to determine the relationship of its benefits to its costs. The final rule will clarify some sections and permit certain operations that currently are allowed only by exemption. The final rule will rename part 105, define terms associated with parachute operations, and require that parachute operations be coordinated with the air traffic control facility having jurisdiction over the airspace in which the operations will be conducted. The rule will also require pilots operating an aircraft engaged in parachute operations in an airport's airspace to establish and maintain communications with that airport's traffic control tower regardless of whether that control tower is or is not operated by the United States.

Furthermore, the rule will permit: (1) tandem free-fall parachute operations using an FAA-approved dual-harness system capable of supporting two parachutists, (2) a certificated senior or master parachute rigger to supervise other persons (who may not be certified) in packing parachutes for which the certificated rigger is rated, and (3) foreign parachutists to make jumps in the United States using their own parachutes manufactured and packed in their country of origin. Additionally, the rule will remove the requirement that parachutists use static-line assist devices with ram-air parachutes.

In addition to the regulatory evaluation, this document contains a Final Regulatory Flexibility Determination, which analyzes the economic effect of the regulatory changes on small entities, as required by the Regulatory Flexibility Act of 1980. This document also contains an assessment of the impact of the regulatory changes on international trade. Finally, this document contains an Unfunded Mandates Assessment.

II. DISCUSSION OF PUBLIC COMMENTS

In response to the Notice of Proposed Rulemaking (NPRM), there were a number of public comments on the economic impact of the parachute operations regulation on various entities. The comments and the FAA's responses are contained in the following paragraphs.

Comment: One commenter believes that section 105.13 implies the need for maintaining communications with two or more ATC facilities during a jump operation. The commenter contends that if communications must be maintained with more than one ATC facility, a second radio would be required, imposing a financial burden of at least \$1200 to \$1500. This commenter further states that the current requirement is sufficient and should not be changed.

Response: The FAA acknowledges that the proposal was unclear as to which ATC facility should be contacted during the jump

operation. It is not the intent of the FAA to require the pilot to contact more than one ATC facility, nor is it the intent of the FAA to increase the pilot's workload during a jump activity. It is common practice for ATC facilities at locations where parachute jumps take place on a continuing basis, to pass along to one another this information, thus eliminating the need for the pilot to contact more than one facility. By inserting the phrase "airspace of the first intended exit altitude" in the final rule, the FAA believes that this will eliminate the confusion. This amended language will make it clear which ATC facility to contact when parachute jumpers are ready to jump. Therefore, the aircraft will only require one two-way radio. The FAA contends that there will be no additional cost associated with the amendment of this section.

Comment: One commenter would like the maintenance schedule for reserve parachutes to be extended to at least 180 days, citing the cost savings that would be generated from a reduction in labor expenditures (i.e., costs of repacking reserve parachutes). Currently, section 105.43 requires that reserve parachutes made of synthetic material be repacked within 120 days before the date of use. The commenter estimates a \$600,000 saving and a \$2,000,000 saving if the requirement was extended from 120 days to 365 days.

Response: The commenter did not provide any cost data to support the purported cost savings. More importantly, the commenter's suggestion of extending the period from 120 to 180 days is outside the parameters of the revisions to this rule. The proposal did not make any modifications to the maintenance schedule for the reserve parachute in the current rule. Therefore, there are no additional costs associated with the implementation of this section.

Comment: Fifteen commenters, including the United States Parachute Association (USPA), the Aircraft Owners and Pilots Association (AOPA), and Southwest Airlines Pilot's Association, submitted comments on proposed section 105.27 (Accident Reporting Requirements). In the NPRM, the FAA proposed the new section to require the parachutist(s), the pilot of the aircraft, or the drop zone owner or operator to notify the FAA within 48 hours of any parachute operation resulting in a serious or fatal injury to the parachutist. Fourteen commenters strongly opposed the proposed accident reporting requirements. One commenter thought that the requirement was a good idea. Several commenters suggested that if the proposed requirement were adopted, that only "serious" injuries, requiring a physician's attention, be required to be reported.

Response: After further review of this section in the NPRM, the FAA has decided to eliminate this section from the final rule. As a result, all definitions associated with this section (i.e., "fatal injury" and "serious injury") will be deleted from section 105.3.

Based on the comments received, the FAA has revisited its original proposal to determine whether or not current FAA policy, as well as industry practices, could adequately address the NTSB recommendation regarding the collection of information pertaining to parachute operation incidents/accidents. The FAA believed that this type of information could be used to assess the safety of parachute operations and assist in preventing future parachute incidents/accidents.

However, to be effective, data collection requires a system, or infrastructure, to collect, store, and evaluate the information. After considering the FAA resources necessary to comply with this proposed requirement, the FAA has determined that the FAA infrastructure is not in place at this time to properly use this type of information.

Additionally, the FAA and the USPA have a close working relationship with regard to the safe conduct of parachute operations within the National Airspace System. When safety issues surface within either organization, an exchange of information is commonplace. The FAA expects this relationship to

continue, and believes that cooperation between the two organizations will provide the same, if not a better, alternative than regulations at this time.

Therefore, the proposal for accident reporting is withdrawn. Nonetheless, the FAA will continue to monitor the safety of parachute operations and the possible need for accident reporting requirements for possible consideration in a future rulemaking action.

Comment: Several commenters also noted that there was a big discrepancy in the number of estimated parachute jumping accidents per year that was used as a basis for cost analysis in the paperwork reduction package, versus the number of accidents that actually occur. One commenter felt that if appropriate numbers were used that the impact to collect and analyze the data would be significant.

Response: The FAA acknowledges that the estimated parachute jumping accidents per year may require revision. Nonetheless, as mentioned in the previous response to comment, the FAA has decided to eliminate the section on reporting requirements. For now, the FAA will gather this type of data from other sources.

Comment: The U.S. Small Business Administration (SBA) submitted comments on the FAA's certification under the Regulatory Flexibility Act (RFA) regarding small entities. The FAA

certified that the rule would not have a significant economic impact on a substantial number of small entities. According to the SBA, " the FAA failed to provide a factual basis for its certification and did not comply with the Regulatory Flexibility Act."

Response: As a result of the recent revisions to the NPRM, the FAA has amended its Regulatory Flexibility Determination section to include additional information and to clarify the reason for certification.

Since the NPRM was published, the FAA has made several revisions to the proposed rule. These changes are examined in the preamble to the final rule. Some of these changes will reduce the impact of the cost on the affected entities, as examined in the proposed rule. One example is the deletion of the phrase " in all directions" from proposed section 105.19, titled parachute operations between sunset and sunrise. By deleting this phrase, a person conducting a parachute operation between sunset and sunrise will not be required to purchase a special type of light, as required in the proposal. Another example involves the elimination of section 105.27, titled accident reporting requirements, from the NPRM. Much of the cost of the NPRM was associated with this section.

In this regulatory evaluation of the final rule, the FAA re-examined the costs and benefits of the revisions to each section of the rule. Consequently, the FAA has revised its reason for certification from "the proposed rule would require an additional expense of less than \$1,000 per entity in excess of normal business expenses" to "the final rule will impose negligible additional cost, if any, on each entity." The benefits of this rule, which include clarifying the existing rule and improving current operating procedures, are discussed in further detail in the preamble and in this regulatory evaluation.

III. DESCRIPTION AND EVALUATION OF THE FINAL RULE

Currently, part 105 is titled "Parachute Jumping" and prescribes the rules applicable to "parachute jumps." The final rule will change the title to "Parachute Operations." The change reflects the FAA's belief that the term "parachute operations" accurately describes activity addressed in part 105. The term "parachute operations" will be defined as any activity that includes a parachute jump or a parachute drop. This activity involves, but is not limited to, the following persons: parachutist, tandem parachute operation, drop zone operator, certificated parachute rigger, or pilot. The definition of "parachute operations" includes these personnel and their duties in relation to parachute jumps and drops.

The final rule will distinguish between the terms "parachute jump" and "parachute drop." The FAA will use the term "parachute jump" to refer to the type of parachute operation that involves the descent of one or more persons to the surface from an aircraft in flight when a parachute is used or intended to be used during all or part of that descent, and "parachute drop" to refer to a parachute operation that involves the descent of an object to the surface from an aircraft in flight when a parachute is used or intended to be used during all or part of that descent. Throughout the final rule language, the terms "parachute operations," "parachute jump," and "parachute drop" are used where appropriate to replace the term "parachute jumps." In addition, the FAA has made several editorial corrections and organizational changes to part 105. These and other changes, including amendments to parts 65, 91, and 119, are discussed section by section below.

Section 105.1 Applicability

This section incorporates the requirements of current §105.1 Subpart A General, Applicability and §105.11 Operating Rules, Applicability. No substantive changes were made to the current requirements.

Section 105.3 Definitions

This section will be new to part 105. It will contain the following definitions of terms associated with parachute operations: "approved parachute," "automatic activation device,"

"direct supervision," "drop zone," "foreign parachutist," "free fall," "main parachute," "object," "parachute drop," "parachute jump," "parachute operation," "parachutist," "parachutist in command," "passenger parachutist," "pilot chute," "ram-air parachute," "reserve parachute," "single-harness, dual-parachute system," "tandem parachute operation," and "tandem parachute system." This change will clear up any confusion surrounding parachute terminology.

Additionally, in response to commenters and after further review of the NPRM, the FAA will make the following three changes. First, the definition of "automatic activation device" will include the term "electro-mechanical device" within its definition. This is appropriate because many of these devices use a combination of electronic and mechanical functions. Second, the FAA will include the phrase, "and takes responsibility for that packing" in the definition of "direct supervision." This phrase is being added because as in any case where a certificated person observes a non-certificated person performing a task, the certificated person must take responsibility. Third, because the FAA has decided to eliminate §105.27 in the final rule, definitions associated with that section (i.e., "fatal injury" and "serious injury") will be deleted from this section. Therefore, under the definition "tandem parachute operations," the terms "fatal injury" and "serious injury" will be deleted.

Section 105.5 General

This section is based on current §105.13. The final rule will replace the term "make" with the phrase "to conduct," the term "parachute jump" with the term "parachute operation," the term "made" with the term "conducted," and the term "jump" with the term "operation." These changes are editorial in nature, not substantive. Therefore, there is no additional cost associated with this action.

Section 105.7 Use of alcohol and drugs

This section will be renumbered from §105.35 Liquor and Drugs. The final rule substitutes the term "alcohol" for the term "liquor" because alcohol is a more general term that includes liquor.

Section 105.9 Inspections

This section contains requirements currently found in §105.37 with no substantive changes.

Section 105.13 Radio equipment and use requirements

This section is based on current §105.14. Under this section, the FAA will amend requirements applicable to radio communications between the pilot of an aircraft involved in parachute operations and the air traffic control facility having jurisdiction over the affected airspace. This action is intended to clarify the existing rule and enhance the safety of parachute operations.

Currently, part 105 requires that the pilot of the jump aircraft establish radio communications with the nearest FAA air traffic control facility or FAA flight service station at least 5 minutes before the jumping activity is to begin. Under this rule, the FAA will require that the jump aircraft establish radio communications with the air traffic control facility having jurisdiction over the affected airspace.

This section will also be amended to require pilots to notify ATC when the last parachutist or object leaves the aircraft. The current rule requires the pilot of the jump aircraft to notify ATC when the last parachutist reaches the ground.

In addition, the FAA will amend the lost communication procedures applicable to parachute operations. Currently, if communications systems become inoperative in flight after receipt of a required ATC authorization, the jumping activity from that flight may be continued. The rule will require that if radio communications system is or becomes inoperative during any parachute operation in or into controlled airspace, the parachute operation must be aborted. The purpose of this rulemaking action is to enhance the safety of all aircraft in the vicinity of the parachute operation by ensuring that two-way radio communications have been established and maintained to relay traffic information or the status of the parachute operation between the jump aircraft and the ATC facility that has jurisdiction over the airspace.

The FAA reviewed a selection of Aviation Safety Reporting System (ASRS) reports filed with the National Aeronautics and Space Administration (NASA) between February, 1992 and November, 1998. The FAA studied numerous ASRS reports, in which pilots reported near midair collisions between their aircraft and aircraft involved in parachute operations. In addition, other reports involved aircraft flying in close proximity to parachutists who were descending to the ground near an airport or within controlled airspace.

The ASRS reports are submitted voluntarily. According to NASA, the existence of reports concerning a specific topic in the ASRS database cannot, therefore, be used to infer the prevalence of that problem within the National Airspace System. However, these reports are often used by the FAA to provide further background information and insight into safety issues that are already being addressed by the FAA.

The ASRS reports relate numerous incidents where aircraft on instrument flight plans were not provided with traffic advisories of parachute operations along their route of flight. In some cases, the air traffic controller was not in communication with the aircraft involved in parachute operations, and in other cases, not even aware the parachute activity was taking place. This rule will ensure that aircraft involved in parachute operations are in communication with the appropriate ATC

facility, thereby facilitating the exchange of traffic advisories, and reducing the risk of midair collisions between aircraft and persons conducting parachute operations.

In addition to enhancing safety, the FAA will amend the regulatory language for purposes of clarity. In response to commenters and after further review of the NPRM, the FAA will include the phrase "airspace of the first intended exit altitude" in paragraph (a)(1)(ii). This new language will make it clear which ATC facility to contact when parachute jumpers are ready to jump.

The FAA will also make the pilot in command of the jump aircraft solely responsible for establishing and maintaining radio communications and information about air traffic activity. In most cases, due to the configuration of the aircraft's avionics, it is impractical for both pilot and parachutist to share in the responsibility of establishing radio communications. Therefore, the requirement that the parachutist also be responsible for establishing radio communications will be deleted from the final rule.

The amendment of this section will impose negligible additional cost, if any, on the pilot in command, parachutists, or the FAA.

Section 105.15 Information required and notice of cancellation or postponement of a parachute operation

The section is based on current §105.15(c) and §105.25. Under the NPRM, paragraph (a)(8) would require that each person requesting authorization under §§105.21 and 105.25(a)(2) and each person submitting notification under §105.25(a)(3) to specify the radio frequencies appropriate to the facilities to be used during the parachute operation, rather than the radio frequencies available in the aircraft.

However, after reviewing the public comments on the NPRM, the FAA has decided to amend paragraph (a)(8). The FAA contends that it is often impracticable for a pilot to know which ATC frequency will be used in the parachute operation, until coordination is achieved with the proper ATC facility. Therefore, the rule will be amended to request the name of the ATC facility having jurisdiction of the airspace at the "first intended" exit altitude to be used in the parachute operation. The ATC frequency to be used will be provided by the ATC facility at the time the authorization is issued.

Paragraph (b) is based on current §105.15(c). Paragraph (c) will require the pilot in command of an aircraft involved in parachute operations to promptly notify the air traffic control facility having jurisdiction over the affected airspace if the proposed or scheduled parachute operation is canceled or postponed. The revision of this section will clarify the existing rule and improve operating procedures. This rulemaking action will impose

negligible additional cost on the parachutist or pilot in command.

Section 105.17 Flight visibility and clearance from cloud requirements

This section contains the flight visibility and clearance from cloud requirements currently found in §105.29. No substantive changes were proposed to the current requirements.

Section 105.19 Parachute operations between sunset and sunrise

Current §105.33 requires persons making parachute jumps between sunset and sunrise to be equipped with a light that is displayed and visible for 3 miles from the time that person exits the aircraft until that person reaches the surface. Under the NPRM, §105.19 specified that each person must display a light that is visible for 3 statute miles "in all directions." After reviewing public comments on this section, the FAA has decided to delete the phrase "in all directions" in the final rule.

The final rule will also allow objects equipped with a light to descend from an aircraft in flight between sunset and sunrise. Each object that is dropped from an aircraft must display a light that is visible for 3 statute miles from the time the object is dropped from the aircraft until the object reaches the surface. Based on internal expert opinion, the FAA believes that this type of parachute operation between sunset and sunrise is a relatively

rare event. Thus, there is negligible additional cost, if any, associated with the revision of this section.

Section 105.21 Parachute operations over or into congested areas or an open-air assembly of persons

This section contains provisions currently found in §105.15 and includes some changes. The rule will remove the 4-day requirement to apply for a certificate of authorization, since the administrative time necessary to process such requests has been reduced. The FAA has determined that removing the 4-day reporting requirement will not cause additional processing delays and will actually improve and expedite the process.

Additionally, after further review of the NPRM, the FAA has decided to make the following changes. In paragraph (b)(1), the FAA will remove the phrase "to the local FSDO." The FAA will also introduce paragraphs (c) and (d) to this section. These paragraphs will require each certificate holder described in this section to comply with the requirements of the certificate of authorization and, if requested by the appropriate official, to present that certificate for inspection. The revision and new paragraphs to this section will impose negligible additional cost, if any, on the certificate holder or on the participant in a certificate of authorization.

Section 105.23 Parachute operations over or onto airports

Currently, unless prior approval has been given by airport

management, part 105 prohibits parachute operations onto any airport or over an airport that does not have a functioning control tower operated by the United States. The FAA will amend the existing regulation, §105.17, to require pilots of aircraft conducting parachute operations to contact the air traffic control tower having jurisdiction over the area where parachute operations are taking place, regardless of who is responsible for tower operations.

There is negligible cost associated with requiring the pilots of aircraft to establish and maintain communications with the control tower prior to conducting parachute operations at airports or to receive prior approval of airport management to conduct parachute operations at airports that do not have operating control towers.

Section 105.25 Parachute operations in designated airspace

This section contains provisions currently found in §§105.19, 105.23, and 105.27. Paragraph (a)(1) will contain the requirements currently in §105.27 for parachute operations in restricted or prohibited airspace. Paragraph (a)(2) addresses parachute operations in Class A, Class B, Class C, and Class D airspace, which are currently in 105.19. Paragraph (a)(3) is based on the current 105.23 and will use the Class E and Class G airspace designations instead of the phrase "other airspace" as used in current 105.23.

After reviewing public comments to this section, the FAA has also decided to amend paragraphs (a)(3) and (b). The final rule will replace the phrase "the affected airspace" with "the airspace at the first intended exit altitude(s)" in both paragraphs. Since ATC airspace jurisdiction is often layered or stratified by altitude, there may be some confusion as to which ATC facility to notify of parachute operations. This action will make it clear which ATC facility to contact when parachute jumpers are ready to jump. This revised section will clarify the phrases "other airspace" and "affected airspace."

In addition, the FAA replaced "air traffic control" with "the FAA" in paragraph (c) of this section. This is to indicate that other FAA services, besides air traffic, may revoke the acceptance of the notification for any failure of the organization conducting the parachute operations to comply with FAA requirements.

Section 105.27 Accident reporting requirements

After further review of this section in the NPRM, the FAA has decided to eliminate this section from the final rule. All the definitions associated with this section (i.e., "fatal injury" and "serious injury") will be deleted from §105.3. The FAA proposed this accident reporting requirement to establish and maintain an accident/incident database. This database could be used to enhance the safety of parachute operations in the National Airspace System. Nevertheless, the FAA has determined

that the FAA infrastructure is not in place to properly use this type of information.

Additionally, the FAA and the USPA have a close working relationship with regard to the safe conduct of parachute operations within the National Airspace System. When safety issues surface within either organization, an exchange of information is commonplace. The FAA expects this relationship to continue, and believes that cooperation between the two organizations will provide the same, if not a better, alternative than regulations at this time.

Therefore, the proposal for accident reporting is withdrawn. Nonetheless, the FAA will continue to monitor the safety of parachute operations and the possible need for accident reporting requirements for possible consideration in a future rulemaking action.

Section 105.41 Applicability

This section will be amended to read, "this subpart prescribes rules governing parachute equipment used in civil parachute operations." There is no additional cost associated with the amendment of this section.

Section 105.43 Use of single-harness, dual-parachute systems

This section is based on current §105.43(a) and makes some changes. This section currently provides that only a

certificated parachute rigger, or the person making the parachute jump with that parachute, may pack a main parachute. The rule will state that a main parachute may also be packed by a person under the direct supervision of a certificated parachute rigger. This addition provides flexibility to the requirements of this section.

The final rule will also state that if installed, the automatic activation device (AAD) must be maintained in accordance with manufacturer instructions for that AAD. There is no additional cost associated with the revision to this section.

Section 105.45 Use of tandem parachute systems

This section will allow tandem parachute operations, and will incorporate the conditions and limitations, with some modification, set forth in the grants of exemption issued to experimental tandem parachute operators. These conditions and limitations include instructor experience requirements, briefings for passenger parachutists, equipment inspections, and packing requirements. Because the FAA no longer refers to passenger parachutists as students, those persons will be referred to as "passenger parachutists," and tandem instructors will be referred to as "parachutists in command." In addition, the FAA will require that a certificated parachute rigger supervise persons packing parachutes who are not certificated under part 65, unless the person packing the parachute is a parachutist in command making the next jump with that parachute.

The parachutist in command will be required to provide evidence of previous experience in tandem operations and will be required to conduct passenger parachutist briefings before each flight on parachute operations and tandem procedures.

Additionally, after further review of the NPRM, the FAA has decided to make the following changes to the rule. The FAA will replace the requirement that 300 of the 500 free-fall jumps required in paragraph (a)(1)(ii) be completed using a ram-air parachute with all of the 500 parachute jumps must be completed using a ram-air parachute. The FAA believes that three hundred ram-air free-fall parachute jumps do not require enough expertise to properly execute all of the maneuvers required in a tandem parachute operation. Currently, all tandem parachute operations and most free-fall jumps are conducted with ram-air parachutes. Therefore, this action updates the existing requirements and makes it consistent with current practice. There is negligible additional cost associated with this amendment.

The FAA will also add the sentence "(the automatic activation device must) be armed during each tandem parachute operation" to paragraph (b)(3)(ii), which was "reserved" in the NPRM. The AAD is a piece of emergency equipment and should always be armed for commercial tandem parachute operations. Since nearly all tandem parachute operations are made with passenger parachutists who have never made a parachute jump, the passenger parachutists are

not provided with any way of controlling the main parachute cutaway and reserve parachute activation systems. In a case where the parachutist in command may be incapacitated or there was a malfunctioning main parachute, the tandem passenger has no way to activate the reserve parachute. If the AAD were to function properly, the reserve activation sequence would begin. This action is consistent with the current requirement in the grant of exemption for tandem parachute operations. Thus, there is negligible additional cost associated with this revision.

By permitting the use of tandem parachutes, the FAA is recognizing the growth and popularity of tandem parachute operations in the United States. The FAA's first exemption to authorize tandem parachute operations was issued in 1984. Since then, it is estimated that more than 3.3 million experimental tandem parachute operations have been conducted throughout the world¹, including those operations conducted under exemption authority in the United States.

When part 105 was originally issued, the only civilian parachute operations being conducted involved single-harness, dual-parachute equipment, which allow a single person to descend to the surface from an aircraft in flight while using a parachute. Since then, the parachuting industry has developed new harness systems that support two people under a single canopy. Because part 105 only allows parachute operations with

¹ The estimate was provided by the USPA.

"single-harness" parachutes, an operator of parachute equipment that has a harness capable of supporting two people must obtain an exemption from part 105 to conduct that type of parachute operation. These exemptions allow operators to conduct parachute operations using "dual-harness" parachute packs; that is, a harness assembly that supports two persons. For purposes of the exemptions, the FAA and the parachuting industry have adopted the term "tandem" to describe those parachute operations that use a dual-harness, dual-parachute system.

Comparing the fatality rate of tandem parachute operations and parachute operations allowed by current regulations, the FAA finds that the various companies operating under an exemption from part 105 have demonstrated that tandem parachute operations can be conducted safely. The FAA reviewed accident statistics from 1991 through 1999, of the 26,890,000 total parachute operations conducted: 1,148,700 were tandem operations. Of the total parachute operations, 300 resulted in fatalities, of which 23 involved the use of tandem parachutes.

The following table provides the overall fatality rates of experienced jumpers for single-harness and tandem parachute operations based on statistics gathered by the FAA and USPA from 1991 to 1999:

Experienced Skydivers

	Single-Harness	Tandem
Total number of jumps	23,864,700	1,148,700
Total number of fatalities	260	12
Fatalities per 100,000 jumps	1.09	1.04

For first time skydivers, the results were as follow: for a total of 727,900 jumps using a static line, the fatality rate was 2.34 deaths per 100,000 jumps. For first time tandem skydivers: for a total of 1,148,700 jumps, the fatality rate was 0.96 deaths per 100,000 jumps.

First Time Skydivers

	Single-Harness	Tandem
Total number of jumps	727,900	1,148,700
Total number of fatalities	17	11
Fatalities per 100,000 jumps	2.34	0.96

During the period 1991-99, the fatality rate for experienced jumpers using tandem parachutes was slightly lower (1.04 deaths per 100,000 jumps) than for experienced jumpers using single harness parachutes (1.09 deaths per 100,000 jumps). For first time skydivers, the fatality rate for tandem was also lower than

for single harness jumpers--0.96 deaths versus 2.34 deaths in 100,000 jumps².

There are negligible additional costs associated with the compliance with the section on use of tandem parachutes because it incorporates the conditions and limitations set forth in the grants of exemption issued to experimental tandem parachute operators with certain conditions. In fact, this provision should provide parachutists in command some flexibility in their parachute operations. This is because they will not have to operate under a manufacturer's exemption umbrella. This action will also provide some relief to the manufacturers regarding liability.

Section 105.47 Use of static lines

This section is based on the current §105.43(b) and will no longer require the use of assist devices with ram-air parachutes. The USPA submitted a second petition for rulemaking in July 1997 requesting that the FAA amend §105.43 to permit parachute operations using static-line, direct-deployed, ram-air parachutes without using a static-line assist device.

² When compared to fatality statistics reported (from 1991 to 1996) in the regulatory evaluation of the NPRM, statistics for 1997 to 1999 show a noticeable decline in fatality rates for experienced and first time tandem skydivers. See the Appendix for the 1991 to 1996 and the 1997 to 1999 statistics.

Skydiving schools and parachute manufacturers have been concerned that a direct deployment assist device could cause canopy damage and malfunctions. Due to this concern, the USPA Safety & Training Committee and the Parachute Industry Association Technical Committee, conducted a series of tests to determine the effect of the required device in 1989. The tests showed that an assist device does not improve the reliability of the static line direct deployment of a ram-air canopy. The tests also show that there are no adverse effects when the device is removed.

As a result of these tests, the FAA believes that safety will not be compromised by removing the static-line assist device requirements for ram-air parachutes.

Section 105.49 Foreign parachutists and equipment

This section addresses the equipment and packing requirements for foreign parachutists. The final rule will incorporate, with certain modifications, the conditions and limitations set forth in the grants of exemption issued to organizations that sponsor events attended by foreign parachutists.

Part 105 states that only a certificated parachute rigger can pack a reserve parachute. Specifically, §105.43(a) states that no person may make a parachute jump wearing a single-harness, dual-parachute pack having at least one main parachute and one approved reserve parachute, unless the main parachute was packed by a certificated parachute rigger or by the person making the

jump, within 120 days before the date of its use, and the reserve parachute is packed by a certificated and appropriately rated parachute rigger. The requirements of §105.43(a) were originally adopted to protect parachutists from inadequate equipment at a time when the sport parachute industry was virtually nonexistent.

Accordingly, part 105 currently does not exempt foreign parachutists and the use of foreign equipment from the requirement that certificated parachute riggers must pack reserve parachutes. Therefore, foreign parachutists making parachute jumps in the United States with their own equipment are required to have their reserve parachute packed by a U.S. certificated parachute rigger.

As a result of this requirement, experienced foreign parachutists must operate under an exemption from the provisions of §105.43(a) to use their own parachute equipment while conducting parachute operations in the United States. Since 1972, the FAA has issued such exemptions to organizations sponsoring parachuting events attended by foreign parachutists and finds that those operations conducted under these exemptions have proven to be safe.

The FAA recognizes that the parachute equipment industry has become more sophisticated and safety conscious, and foreign manufacturers of parachute equipment often meet U.S. standards. In addition, permitting the practice of having foreign parachutist use parachutes that are packed in their country of origin, will

encourage foreign countries to grant permission for U.S. skydivers to jump in those countries using parachutes packed in the United States. Therefore, the FAA will add \$105.49 to address foreign parachutist equipment and operations.

Under the final rule, only single-harness, dual-parachute systems which contain a non-technical standard order (TSO) reserve parachute or non-TSO'd harness and container would be allowed to be used in the United States by the owner or agent of that equipment. The parachute system used by the foreign parachutist must also meet the civil aviation authority requirements of the foreign parachutist's country, and must be packed by the foreign parachutist making the next parachute jump with that parachute, or a U.S. certificated parachute rigger.

In addition, after further review of the NPRM, the FAA has decided to make the following changes to the rule. The FAA will replace the terms "non-TSO'd" with "unapproved" in paragraphs (a) and (a)(4). The FAA will also add the phrase "or any other person acceptable to the Administrator" to paragraphs (a)(4)(i) and (a)(4)(ii). This addition will allow a non-certificated person to pack the main parachute under supervision. This may be particularly applicable for parachute riggers in training.

There are no additional costs associated with this section because the final rule only incorporates, with certain modifications, the conditions and limitations set forth in the

grants of exemption issued to organizations that sponsor events attended by foreign parachutists. In fact, this rulemaking action will simplify the parachute operation process for foreign parachutists by eliminating the current requirement for a sponsor.

Changes to Other 14 CFR Parts

To standardize the final rule language with the language of other regulations, the FAA will amend sections of 14 CFR parts 65, 91, and 119 applicable to parachute operations. In addition, part 65 will also contain language to permit persons other than a certificated parachute rigger to pack parachutes as long as it is performed under supervision of a certificated parachute rigger.

Section 65.111 Certificate required

Currently, §65.111(b) states that no person may pack, maintain, or alter any main parachute of a dual parachute pack unless that person has an appropriate current certificate issued under Subpart F of part 65 or is the person making the jump using that parachute. The FAA will revise paragraph (b) to allow persons to pack a main parachute in accordance with §105.43(a), under the direct supervision of a certificated parachute rigger or to allow a parachutist in command to pack a main parachute for tandem parachute operations in accordance with §105.45(b)(1). The FAA will also add the word "next" to the provision that a person may pack a main parachute if that person intends to make the "next" parachute jump using that parachute.

Section 65.125 Certificates: Privileges

The FAA will revise §65.125(a)(2) and §65.125(b)(2) by permitting a certificated rigger to supervise other persons packing any type of parachute for which the certificated parachute rigger is rated in accordance with §105.43(a) or §105.45(b)(1).

The FAA is concerned about the various interpretations of the term "supervision." The term "supervision" in this regulation means that certificated parachute riggers must be present where the parachute packing is taking place by noncertificated parachute riggers. Certificated parachute riggers will be required to direct, watch over, consult with, and scrutinize the work and performance of the person who is not a certificated parachute rigger, unless the person packing the parachute is (1) the person making the next parachute jump with that parachute or (2) a parachutist in command conducting a tandem parachute jump in accordance with §105.45.

In the regulatory evaluation for the NPRM, the FAA requested cost data from the public on the supervision of noncertificated parachute packers by certificated parachute riggers. However, no such data was received during the comment period. Therefore, for §§65.111 and 65.125, the FAA has determined that clarifying existing requirements will impose negligible cost on those engaged in parachute packing.

Section 91.307 Parachutes and parachuting

The FAA will revise paragraph (b) by replacing "make" with "conduct," and "parachute jump" with "parachute operation." This revision will make the final rule consistent with terminology in part 105. There is no additional cost for this amendment.

Section 119.1 Applicability

The FAA will amend paragraph (e)(6) to read, "Nonstop flights conducted within a 25-statute-mile radius of the airport of takeoff carrying persons or objects for the purpose of conducting intentional parachute operations."

The final rule adds the words "or objects" and changes the word "jumps" to "operations". This revision will make the rule consistent with terminology in Part 105. There is no additional cost associated with implementing this revision.

IV. COMPARISON OF BENEFITS AND COSTS

The benefits of the final rule are: (1) it should reduce the risk of a midair collision between aircraft and persons engaged in parachute operations, and reduce the risk of aircraft coming in close proximity to the parachutists in the vicinity of an airport or within controlled airspace; (2) it will revise some sections of the rule for better understanding; and (3) it will permit certain operations that currently are only allowed through exemptions granted by the FAA.

The amendments to part 105 will impose negligible additional cost, if any, on parachutists, pilots of aircraft used in parachute operations, certificated parachute riggers, and drop zone operators (skydiving training schools fall under this category). Major aspects of this rule such as the requirements for tandem parachute operations and for parachute jumps by foreign parachutists are already being met under exemptions granted by the FAA. Therefore, this rulemaking action will not impose additional business expenses on drop zone operators, parachute clubs, or foreign parachutists. Costs imposed on the FAA are negligible, since the agency will not be required to provide additional oversight of parachute operations under the revision of parts 65, 91, 105, and 119.

In view of the negligible additional cost of compliance to the final rule, compared with the improvements in operating procedures that enhance the safety of parachute operations, the FAA has determined that the final rule is cost-justified.

V. FINAL REGULATORY FLEXIBILITY DETERMINATION

The Regulatory Flexibility Act of 1980 (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation." To achieve that principle, the Act requires agencies to solicit and consider flexible

regulatory proposals and to explain the rationale for their actions. The Act covers a wide-range of small entities, including small businesses, not-for-profit organizations and small governmental jurisdictions.

Agencies must perform a review to determine whether a proposed or final rule will have a significant economic impact on a substantial number of small entities. If the determination is that it will, the agency must prepare a regulatory flexibility analysis as described in the Act.

However, if an agency determines that a proposed or final rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the 1980 act provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The FAA conducted the required review of this final rule and determined that it will not have a significant economic impact on a substantial number of small entities. The small entities affected by this final rule consist of parachutists, pilots of aircraft used in parachute operations, certificated riggers, and drop zone operators. The final rule will impose negligible additional cost, if any, on these entities. Major aspects of

this rulemaking such as permitting tandem parachute operations will not impose additional business expenses for compliance on drop zone operators or parachute clubs because these entities currently adhere to the requirements of the rule through grants of exemptions issued by the FAA under part 105. Accordingly, pursuant to the Regulatory Flexibility Act, 5 U.S.C. 605 (b), the FAA certifies that this final rule will not have a significant economic impact on a substantial number of small entities.

VI. INTERNATIONAL TRADE IMPACT ASSESSMENT

The Trade Agreement Act of 1979 prohibits Federal agencies from engaging in any standards or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and where appropriate, that they be the basis for U.S. standards. In addition, consistent with the Administration's belief in the general superiority and desirability of free trade, it is the policy of the Administration to remove or diminish to the extent feasible, barriers to international trade, including both barriers affecting the export of American goods and services to foreign countries and barriers affecting the import of foreign goods and services into the United States.

The FAA has determined that the rule will promote parachuting by foreign parachutists in the United States. The final rule will permit foreign parachutists to jump in the United States using parachutes that are packed in their country of origin and thereby encourage foreign countries to grant permission for U.S. skydivers to jump in those countries using parachutes packed in the United States.

VII. UNFUNDED MANDATES ASSESSMENT

The Unfunded Mandates Reform Act of 1995 (the Act), enacted as Pub. L. 104-4 on March 22, 1995, is intended, among other things, to curb the practice of imposing unfunded Federal mandates on State, local, and tribal governments.

Title II of the Act requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in a \$100 million or more expenditure (adjusted annually for inflation) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action."

This final rule does not contain such a mandate. Therefore, the requirements of Title II of the Unfunded Mandates Reform Act of 1995 do not apply.

APPENDIX

Fatality Statistics for Experienced and First Time Skydivers

1991 - 1996

Experienced Skydivers

	Single-Harness	Tandem
Total number of jumps	15,245,100	670,700
Total number of fatalities	166	9
Fatalities per 100,000 jumps	1.09	1.3

First Time Skydivers

	Single-Harness	Tandem
Total number of jumps	403,500	670,700
Total number of fatalities	11	8
Fatalities per 100,000 jumps	2.7	1.2

1997 - 1999

Experienced Skydivers

	Single-Harness	Tandem
Total number of jumps	8,619,565	478,000
Total number of fatalities	94	3
Fatalities per 100,000 jumps	1.09	0.63

First Time Skydivers

	Single-Harness	Tandem
Total number of jumps	324,435	478,000
Total number of fatalities	6	3
Fatalities per 100,000 jumps	1.84	0.63
