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United States Department
of Transportation Dockets

Docket No. FAA-99-5483 - 3
400 Seventh Avenue SW
Room Plaza 401
Washington, DC, 20590

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To Whom it May Concern;

Please consider the enclosed comments with regard to the proposed rule that will change 14 **CFR**, Parts **65, 91, 105**, and 119 relating to parachute jumping.

My experience in this matter is based on more than 4,000 parachute jumps made under Part 105 within the United States. I have earned Instructor certification from The United States Parachute Association (**USPA**) in the Static Line, Accelerated **Freefall**, and Tandem programs, as well as a Professional Exhibition rating. I have received certification as a Tandem Instructor from three of the four manufactures of tandem equipment certified in the United States. I have been **certificated** by the Federal Aviation Administration as a Senior Parachute Rigger, and Commercial Pilot in both single and multiengine airplanes. I remain an active skydiver, instructor, pilot, and rigger, and am a current member of the United States Parachute Association and Aircraft Owners and Pilots Association (AOPA).

In general the proposed changes to the relevant parts of the Federal Aviation Regulations are logical and reasonable, and will benefit the parachuting community and the general public. There are, however, several elements that require further study and additional **definition** as follows:

Parachute Packing (6.5.111)

The intent of the proposed change is to allow parachutists who do not have a rigger certificate to pack main parachutes under the supervision of a certified rigger. This change is designed to eliminate confusion regarding the inconsistent supervision requirements of main and reserve parachute packing by allowing a parachute rigger to supervise the packing of main parachutes, as well as reserve parachutes, as has been an established industry practice. The objective of the change is to make the **specific** supervisory requirements the same. However, the new regulation does not deal directly with the issue of responsibility for the work being supervised. When a parachute rigger supervises the packing of a reserve parachute he is required to take personal responsibility for the work by placing his signature on the packing data card and **affixing** his assigned seal to the pack. Although the work may have been completed by a person without a rating, it is the certificated rigger who takes the final responsibility for the task. This same requirement of responsibility is placed on the holder of an FAA maintenance certificate who supervises

others conducting aircraft maintenance under his supervision, and then **affixes** his signature to the record. The packing of main parachutes under current law **often differs from** reserve packing due the casual nature of the supervision of main parachutes, and lack of a required sign-off or seal impression. Generally, a packer without a rating will pack main parachutes with one or several riggers in the area available to answer questions. Several riggers may observe **different** parts of the process, or there may in fact be no direct observation. There is **often** not an established relationship between a packer and a specific parachute rigger, and thus under the current system there is no attribution of responsibility for the work to a specific rigger. In the absence of a stated relationship, a packer without a rating can claim to be supervised by those riggers in the area, when no such supervision is actually being provided. **Based on the above analysis of the current application of main parachute packing regulations, it is suggested that the language of 65.111(a)(2) include a requirement that the supervising rigger take responsibility for the work being supervised.** A packer lacking rigger **certification** would then be required to arrange for supervision by a specific certificated rigger who must at least verbally agree to be responsible for the work being done, rather than rely on random riggers who may be in the area. The burden of arranging supervision would be placed on the noncertificated packer who may later be required to identify the specific supervisor that is ultimately responsible for the work being done. Individual riggers would be relieved of responsibility for casual supervision unless an agreement had been established **in** advance of the work being done. The objective of this requirement is to prevent a packer from assigning responsibility to a rigger without first establishing a relationship and arranging for the necessary supervision.

The requirement for a supervising rigger to take responsibility for the work being supervised should be clearly noted in the definitions (Part 105.3) as follows:
Supervision means that a certificated rigger personally observes a noncertificated person packing a main parachute to the extent necessary to ensure that it is being done properly, and takes responsibility for that packing.

The requirement for supervision also appears to demand a **different** standard under 105.43/105.45 than required by 65.111. Part 61.111 requires simple “supervision”, while part 105.43/105.45 requires “direct supervision”. The **different** language indicates a greater level of supervision is required under part 105.43/105.45, but it is unclear how this supervision will differ, or why a separate standard has been listed. **It is suggested that a single standard of supervision be established (as seems to be the intent), and the same term be used to define this supervision in all parts of the regulations.**

Accident Reporting Requirements (105.27)

The intent of this change is to allow the Federal Aviation Administration to begin to build a database of parachuting accident history. The manner that this information will be used and processed remains unclear, and the need for this additional regulation is suspect. Further, the occurrence of an accident will have no statistical value without a report of the number of successful parachuting events, and this reporting is not required. Notwithstanding the lack of need for such a regulation, and duplication of voluntary data

collection by private agencies (**USPA**), the specific language of the proposed change demands reporting in far more cases than seems necessary.

The proposed regulation would require the reporting of fatal accidents or serious injury accidents, with the term “**serious injury**” defined in the same manner that is used by the NTSB in aircraft accident investigations. It should be understood that in most cases when an **aircraft** is involved in an accident the **aircraft** must suffer substantial structural damage or experience severe turbulence in order for an occupant to suffer any degree of muscle, tendon, nerve or bone damage. Since an aircraft accident that causes any damage to muscle, tendon, nerves or bone will also cause substantial damage to the structure of the **aircraft** it must be reported. **In** parachuting operations the participant is not protected by the shell of an aircraft, and thus limited injuries to muscle, tendon, nerve, or bone happen more regularly. It is not inappropriate to equate the level of minor injury in skydiving to that in a contact sport such as football, **soccer**, or hockey. **Thus, the reporting requirement, if adopted at all, should be limited to fatal injury, or “serious hemorrhages or; serious injury to muscle, tendon, nerves or bone.” Serious injuries should be limited to those that require prolonged hospitalization. Minor injuries should not be included in the reporting requirements.**

It should also be noted that the analysis required by Paperwork Reduction Act **finds** that about 44 drop zone owners would spend about 1 hour each to comply with this regulation each year. However, that figure only **includes** fatal accidents, and not any cases involving injury. The true number of reports required would be **far** greater if injuries must be reported. The additional time and expense required of those reporting the accidents will be far greater than forecast. The benefit of this additional reporting has not been demonstrated.

This new regulation also specifies a requirement for reporting that is nebulous at best. The regulation requires the reporting be handled by; “each parachutist involved, or the pilot of the aircraft, or the **dropzone** owner, or the operator.” The regulation makes no effort to define who has the specific responsibility for meeting the reporting requirement. This regulation seems to have been adapted **from** standard NTSB requirements for accident reporting that place the requirement first on the operator of the **aircraft** involved. In parachuting operations the pilot is **often** not in any way responsible for an **injury**, or even aware an injury has occurred, and is thus not in a position to file a report. The injured jumper may not be able to file a report, and the “Owner” may simply be an absent landowner with no direct involvement in the parachuting operation. **The “operator” of the parachuting program seems to be the best person to make the reports required by this regulation, and this should be reflected in the language of the regulation, if adopted.**

It is also important to define the two distinct terms “Owner” and “Operator”, as used in this regulation. The “Owner” may be the parachute business owner, or it may simply be the person, corporation or government agency that owns the property the parachute business is leasing. In cases involving jumps away from an established dropzone, the “**owner**” may have no connection with the operation whatsoever. It is important not to assign any responsibility to the owner of the **property**, or to **define** this entity as a part of

the parachute business. **In** many cases the property is owned by one person or corporation, the various **aircraft** are owned by other entities, the parachuting equipment by another, and the training school (if applicable) by **yet** another **entity**. **If “owner” is included in the language of this regulation at all it should clearly be defined as the owner (singular or corporate) of the parachuting business, but even that definition is ambiguous. The “operator” should be defined as that person who submitted the required notification to ATC as listed under 105.15.**

Use of Alcohol and Drugs(105.7).

This change simply replaces the word liquor with **alcohol**. The intent of this regulation is to prevent a person “under the influence of alcohol” **from** conducting parachute operations. The Federal **Aviation** Regulations **include** two other distinct standards for alcohol use. The first and highest standard is listed under 91.17, and is a near-zero standard to be applied to pilots. This standard includes an eight hour preflight consumption time limit, and a blood alcohol limit, as well as a prohibition against operating while ‘under the **influence.**” The second standard is listed under **135.121** and simply prohibits serving alcohol to a passenger who “appears to be intoxicated.” The standard applied to parachutists under part 105 seems to be positioned between the other two mentioned standards. It appears that under this regulation a parachutist may be permitted to participate in parachute operations immediately following consumption of alcohol, providing he is not manifesting **identifiable** symptoms of being ‘under the influence.” The term “under the influence” is not defined in this part, or elsewhere in the regulations. It seems that a federal standard of “under the influence” as **defined** by DOT motor vehicle standards, or perhaps a blood alcohol limit of either **.02** or **.04**, may be the limitation here, but that is not clear (See Reasonable Suspicion Testing, Part 12 1 , Appendix J **(III)(D)(4)(c)**, and **91.17(a)(4)**). Although not well **defined**, this standard seems to be appropriate for parachutists involved in single harness operations. Part 105 is designed to protect the general public **from** the hazards of parachute operations, and limited alcohol use by individual parachutists does not seem to have a negative effect on public **safety. Thus, a relaxed standard of “under the influence” is reasonable. However, the higher standard of 91.17 seems more appropriate for a Parachutist In Command conducting tandem operations with a Passenger Parachutist, The nature of the risk of participation in tandem parachuting is such that a very tight alcohol standard should be applied.**

The term “under the influence” is not currently defined under FAA regulation, it has not been defined by existing NTSB case law, or by opinion of the Chief Council. This language should be clearly defined within 105.3, and the higher standard of 91.17 should be applied to tandem operations.

Use of Tandem Parachute Systems(105.45).

This regulatory change has been requested by **USPA** based on submitted documentation of a successful experimental program operated under a series of exemptions to Part 105. The success of this experimental test program has been the direct result of strict mandatory supervision by **USPA** and the **manufacturers**.

Tandem operations **differ from** single harness parachute jumps in that they are clearly commercial in nature. If approved by this regulation tandem parachute jumps and Parachutists in Command should be held to a higher safety standard than conventional single harness parachute operations. A tandem parachute jump at a commercial parachute center involves a clear “holding out” to the public by the operator, and is in fact often sold to the public as an amusement-park style ride. The passenger is not required to have any special skill, ability to handle any of the controls, or knowledge of emergency procedures. In most cases, the passenger is by necessity neither trained to use the reserve parachute, nor provided with the necessary controls to use the reserve parachute. Unlike a conventional training program, a tandem passenger is completely depending on the training and professionalism of the tandem Parachutist in Command. **Further**, the revenue generated by a tandem program is substantial, and **will** provide an unprofessional operator with a strong incentive to cut costs and maximize profit at the expense of safety. **Supervision of tandem skydiving should be required at a much higher level due to a direct threat to public safety experienced by the first time Passenger Parachutists, and the “hold out” nature of the operation.**

The proposed regulation is presented within the NPRM as being similar to the exemptions currently issued to tandem manufacturers and their field instructors. While the specific language of the proposed regulation is similar to the exemption the regulation does not make any allowance for additional requirements to be imposed upon a tandem Parachutist in Command or the tandem operation. The exemptions currently issued to tandem **manufacturers** require that the Tandem Instructor (Parachutist in Command) work under the direction and control of one of the four approved equipment manufacturers. This control includes a large package of additional requirements not **included** in the exemption, but mandatory based on the relationship between the Tandem Instructor and the Tandem Manufacturer. Further, the revocation of authority to conduct tandem operations as a Tandem Instructor is clearly defined as being permitted by each manufacturer. The proposed regulation makes no provision for such supervision or control. Nor does it in **any** way require compliance with **manufacturer directives. A tandem Parachutist In Command should be required to follow all manufacturer directives and instructions, as is required of pilots under 91.9(a), and parachute riggers under 65.129(e)(f).**

The proposed **regulation** requires that the Parachutist in Command must have completed a tandem instructor course, and must have been certified by the appropriate manufacturer or tandem course provider, but the regulation makes no provision for the suspension or revocation of the certification by the issuing agency or any other authority. The regulation also fails to require any standard of subsequent supervision, currency, proficiency, or training beyond the initial authorization. **The suspension or revocation of a certificate should be permitted by at least the manufacturer or agency issuing the certification. Currency requirements should be added, and the agency or approved manufacturer issuing the certification should have the authority to enforce those requirements.**

The proposed regulation requires that a Parachutist In Command “provide documentation” regarding his experience (**105.45(a)(i)**), but it does not indicate what agency this reporting must be supplied to, or in what form. This language should be clarified.

The proposed regulation requires that a tandem Parachutist in Command have at least three years of experience and **500 jumps**, but there is no minimum age **limit** indicated. There are currently children as young as 12 years old making parachute jumps without the approval of the **USPA**. These children will be eligible to work as tandem Parachutists in Command under this regulation when they are just 15 years old. Likewise, there is no age limitation on the Passenger Parachutist. Under the proposed regulation minors will be permitted to act as Parachutist in Command, and children will be permitted to ride as passengers at any age. **Currently, age limits for both the Passenger and Parachutist in Command are set at 18 years by the tandem manufacturers under exemption authority. No such limitation is included in the proposed regulation, yet it should be.**

The proposed regulation also fails to establish any medical requirement for the Parachutist in Command. When a passenger is taken on a tandem parachute jump, all control is maintained by the Parachutist in Command. A medical emergency that renders the Parachutists in Command unable to operate the controls will clearly threaten the life of the Passenger Parachutist. Many of the manufacturers and the **USPA** require at least an FAA class III medical certificate at the time of certification, and both **USPA** and some manufacturers require a current FAA medical certificate when operating the tandem system. This requirement should be incorporated into the regulation.

The proposed regulation does not include any altitude limitations for either tandem exits or parachute openings. These limitations are currently specified by the manufacturers and mandated under the authority of the exemption process. **Minimum** exit and opening altitudes should be mandated to allow a Parachutist in Command to have **sufficient** time to handle any likely emergency. The best form for this requirement is by manufacturer directive with mandatory compliance.

The proposed regulation includes no limitation on the proximity of **freefall** tandem parachutists and non-tandem jumpers. The manufacturers have strictly limited the tandem jumpers by prohibiting **freefall** contact (relative work). Although several fatalities have been directly attributed to **freefall** contact between parachutists using single harness parachute systems and tandem parachutists, no limitation is included in this regulation and the manufacturers limitations will no longer apply without the exemption. The best form for this requirement is by manufacturer directive with mandatory compliance.

The proposed regulation includes a requirement that the Passenger Parachutist be provided with a manual activation device (**105.45(b)(4)**), but then mitigates this requirement by making it optional based on a decision by the “owner/operator”. The owner/operator is not defined under this regulation and there is no indication of why this authority is placed in the owner/operator rather than the Parachutist in Command.

This proposed regulation includes no specific limitation regarding alcohol or drug use, and instead relies on part 105.7. The alcohol limitation is then simply **defined** by “**under the influence**”, rather than a higher standard. While **the limited “under the influence” standard may be appropriate for experienced parachutists and the Passenger**

Parachutist, a near zero tolerance should be applied to the tandem Parachutist in Command.

The nature of federal regulation is such that changes and modifications to this part can not be applied easily or quickly, yet the tandem program requires flexibility to continue to grow safely. Several of the above oversights need to be addressed in regulatory form, while others should be incorporated within a manufactures manual that should then be approved by the Administrator. **Elements such as alcohol, age, currency, and a medical certificate should be mandated through regulation, while other requirements should be mandated by the equipment manufactures, with approval of a related operations handbook by the Administrator. It is, however, important that the manufactures directives be mandatory, and that this be clearly reflected in the language of the regulation.**

Parachute Operations in Designated Airspace (105.25)

The proposed regulation requires that requests for authorization and notifications be submitted to “the air **traffic** control facility having jurisdiction over the affected airspace.” Prior to this regulation, notification was provided to a Flight Service Station (FSS), and the **FSS_distributed** the notification within the NAS. The change is designed to improve communication between the parachutist and ATC, and assumes that ATC will distribute the **notification** within the NAS. The regulation does not require any new notifications, but rather simply changes where the notification is **filed**. This regulatory change has been requested by ATC following a number of NASA reports involving **inflight** conflict between parachutists and aircraft under ATC **control**. It is unclear why ATC was not aware of the parachutists in these cases, but it can be assumed there is a break in communication between FSS and ATC. The regulation will require direct notification to ATC, but **will** not further insure improved communication between ATC and FSS. It is unclear how the **NOTAM** system will receive notification from ATC, or why this process will be less prone to communication **failure** than the current system

The regulation does not **define** what ATC element should be contacted, other than the facility having **jurisdiction** over the affected airspace. **Often**, a parachute operation will takeoff or begin a climb through airspace controlled by an approach **facility**, but the jump will begin in airspace controlled by a center facility, then **re-enter** the approach control airspace in **freefall**. The language of the regulation indicates that the parachutist is required to notify each of the controlling agencies since each is affected by the operation. **The regulation should be written to make it clear that only one ATC facility needs to be contacted, and that the ATC element given the initial notification will provide coordination within the NAS, and be responsible for that coordination.**

Radio Equipment and Use Requirements (105.13)

The proposed regulation includes a slight change regarding notification to ATC “**when** the last parachutist or object leaves the aircraft.” The current regulation requires the pilot to notify ATC when “the last parachute jumper from the **aircraft** reaches the ground”. This change places the responsibility for airspace protection through the **freefall** and parachute flight within ATC, rather than upon the pilot. The notification required of a pilot has always been troublesome because the jumpers are landing as the pilot is descending, and

Thomas Buchanan, Comments **Regarding 14 CFR Part 105**

they may not always be visible to the pilot **in** flight. The change will require that ATC maintain control over the airspace with an assumption of parachutes in the sky for a predetermined period of time **following** the reported exit. The new language is not listed as a change, and although welcome, may not be intended.

Definitions (105.3)

As noted, changes to the definitions should include SUPERVISION and DIRECT SUPERVISION (as used in 65.111, 105.43, 105.45), DROPZONE OWNER (as used in 105.27), DROPZONE OPERATOR (as used in 105.27), OWNER/OPERATOR (as used in 105.45), UNDER THE INFLUENCE (as used in 105.7), SERIOUS INJURY (as used in 105.27).

The above listed changes **will** improve the proposed regulations and insure they can be understood and applied to operations in the field for many years to come.

Sincerely,

Tom Buchanan
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