U.S.Department
of Transportation
Federal Aviation Administration

Policy Statement

Subject: Alternative Personnel Carrying Device System (PCDS) Harness

Date: 09/08/2025

Initiated By: AIR-600

Policy No: PS-AIR-27/29.865

1 SUMMARY

1.1 This policy statement establishes design and rotorcraft-load combination flight manual (RLCFM) requirements for the use of alternative personnel carrying device system (PCDS) harnesses, also known as human harnesses, when operating Class B rotorcraft-load combination (Class B) Human External Cargo (HEC) under title 14, Code of Federal Regulations (14 CFR) part 133. The design requirements for PCDS, which includes the harness, are contained in 14 CFR §§ 27.865 and 29.865. Advisory Circulars (AC) 27-1B, *Certification of Normal Category Rotorcraft*, and AC 29-2C, *Certification of Transport Category Rotorcraft,* state that Technical Standard Order (TSO) TSO-C167, *Personnel Carrying Device Systems (PCDS), also known as Human Harnesses*, provides an acceptable means of approval for PCDSs.

1.2 The alternative PCDSs allowed via this policy are harnesses acceptable to the Occupational Safety and Health Administration (OSHA). The purpose of this policy is to provide guidance to Flight Standards District Office (FSDO) inspectors regarding the recognition of the American National Standards Institute (ANSI) and the American Society of Safety Professionals (ASSP) ANSI/ASSP Z359.11 standards for PCDS equipment used in Class B HEC operations under part 133.

1.3 There is no requirement or need to change the FAA-approved type design installation of the external load attaching means to allow the use of this policy if the rotorcraft or external load attaching means was certified to § 27.865 at amendment 27-36 or § 29.865 at amendment 29-43, or later requirements.

1.4 This is a guidance document. Its content is not legally binding in its own right and will not be relied upon by the Department as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with the guidance document is voluntary only. Nonconformity will not affect rights and obligations under existing statutes and regulations.

2 CURRENT REGULATORY AND ADVISORY MATERIAL

2.1 Title 14, Code of Federal Regulations.

- Part 1, *Definitions and Abbreviations*.
- Part 21, *Certification Procedures for Products and Articles*.
- Part 27, *Airworthiness Standards: Normal Category Rotorcraft*.
- Part 29, *Airworthiness Standards: Transport Category Rotorcraft*.
- Part 133, *Rotorcraft External-Load Operations*.

2.2 FAA Advisory Circulars.

- AC 27-1B, *Certification of Normal Category Rotorcraft*.
- AC 29-2C, *Certification of Transport Category Rotorcraft*.

2.3 FAA Technical Standard Orders.

- TSO-C167, *Personnel Carrying Device Systems (PCDS), also known as Human Harnesses*.

2.4 Industry Standards.

- ANSI/ASSP Z359.11-2021, *Safety Requirements for Full Body Harnesses*.
- ASSP Z359.0-2023, *Z359 Committee Guidance Document for Definitions and Nomenclature Used in Z359 Fall Protection and Fall Restraint Standards*.
- National Fire Protection Association (NFPA) 1983, *Standard for Fire Service Life Safety Rope and System Components (2001 Edition)*.
- Society of Automotive Engineers Aerospace (SAE) AS8043A, *Restraint Systems for Civil Aircraft.*

2.5 Definition of Key Terms.

2.5.1 The following definitions apply to this policy statement:

- **External load attaching means.** The structural components used to attach an external load to an aircraft, including external-load containers, the backup structure at the attachment points, and any quick-release device used to jettison the external load (14 CFR § 1.1).
- **PCDS.** A device or system that has the structural capability and features needed to safely transport occupants external to the rotorcraft during HEC operations. A PCDS includes, but is not limited to, life safety harnesses and rigid baskets or cages either attached to a hoist or cargo hook or mounted to the rotorcraft airframe (see TSO-C167) (AC 27-1B and AC 29-2C).

- **PCDS harness.** The portion of a PCDS that is responsible for securing the HEC. It consists of a system that secures the chest and pelvis of one or more persons and provides an attachment point, loop, or ring for the cable or line attachment.

Note: "PCDS harness," "body harness," or "full body harness (FBH)" are used interchangeably in this document.

2.5.2 See ASSP Z359.0-2023 for the definition of "suspension."

3 BACKGROUND

3.1 In this policy, the FAA defines an acceptable use of an industry standard to support the FAA's acceptance of PCDS harnesses under the operational approval for part 133 Class B HEC operations. This policy provides an alternative standard for PCDS harnesses, which the utility industry generally uses for their PCDS harness equipment when operating Class B HEC under part 133. These types of work operations (e.g., utility work) often require both aviation and non-aviation operations. The aviation portion of the work, which is under FAA's jurisdiction, involves Class B HEC. The non-aviation portion, which is under OSHA's jurisdiction, involves work that also requires the use of harnesses (e.g., working on utility poles). The method established by this policy allows the FAA to deem the ANSI/ASSP Z359.11 standard as acceptable to meet the requirements for Class B HEC. As a result, under this policy, a harness that is used to perform work under OSHA's jurisdiction and that meets OSHA's standards could thereby be used in the aviation portion of the work because it also meets FAA's standards. This is in conjunction with additional requirements within part 133 operating requirements, as outlined in the FAA-approved RLCFM.

3.2 OSHA mandates the use of FBHs, such as those compliant with ANSI/ASSP Z359.11, for occupations requiring suspension or fall harnesses to be used in these work operations. OSHA regulates the use, inspections, and mandatory retirements, if required, of all FBH used in fall-risk work operations. This OSHA oversight of the non-aviation portion of the work requiring an FBH assures adequate control, inspections, and mandatory requirements of the PCDS that the FAA finds acceptable for Class B HEC. This policy only applies to the FBH portion of a PCDS.

3.3 This policy does not cover part 133 Class D rotorcraft-load combination HEC operations where the PCDS must be FAA type design approved as part of the installation, as required by § 133.45(e)(3), following the guidance in AC 27-1B and AC 29-2C. There is no requirement or need to change the FAA-approved type design installation of the external load attaching means to allow the use of alternative PCDS harnesses.

4 RELEVANT PAST PRACTICE

4.1 Amendment 27-36 to § 27.865 and amendment 29-43 to § 29.865 in 1999 were the first to establish FAA design requirements for HEC.[1] The type design for the external load attaching means and the PCDS for HEC are approved as compliant with these requirements. For each PCDS installation, a type certificate (TC) or supplemental type certificate (STC) specifies a harness that demonstrates the airworthiness of its design to the certification authority. AC 27-1B and AC 29-2C[2] provide guidance on complying with the associated airworthiness standard for the approval of HEC equipment.

4.2 In 2004, the FAA released TSO-C167, which laid out a standard for PCDS harnesses specifying the minimum performance requirements for a harness to gain a TSO certification and airworthiness approval. The TSO references SAE AS 8043A and NFPA 1983 as the basis on which the standard was developed.

4.3 After the release of TSO-C167, the FAA updated AC 27-1B and AC 29-2C to recognize TSO-C167 as an acceptable means of approval for a PCDS harness. Alternatives for PCDS in Class B HEC under part 133 have been an ongoing issue.

5 ISSUE REQUIRING ADDITIONAL POLICY

The FAA became aware of an issue with §§ 27.865 and 29.865 approvals where the entire PCDS is approved under the specific rotorcraft's type design. The issue is that the safety requirements for PCDS harnesses defined in the FAA design approval standards, and those of OSHA regulations for the non-aviation portion of work performed, are not aligned. OSHA regulations require any individual performing a work task involving elevation above the ground to wear an appropriate suspension and/or fall safety restraint harness that meets an industry specification such as ANSI/ASSP Z359.11. These harnesses are serialized, custom fitted, and assigned to a specific individual. The harnesses are also subject to specific storage, maintenance, and inspection intervals per OSHA regulations and oversight. As mentioned above, the work is under FAA jurisdiction when the worker is suspended from the helicopter operating under part 133 for Class B HEC. The current FAA certification guidance in AC 27-1B and AC 29-2C states that the entire PCDS must be installed under the rotorcraft's type design and maintenance data. This policy statement is intended to address the aviation portion of the work by allowing the use of body harnesses under part 133 operations if they meet the OSHA accepted ANSI/ASSP Z359.11 and are actively being used by the assigned individual for work under OSHA safety regulation and oversight.

[1] See *Rotorcraft Load Combination Safety Requirements*, final rule, 64 FR 43016 (Aug. 6, 1999).
[2] ACs provide an acceptable means, but not the only means, of compliance.

6 POLICY

6.1 Purpose.

This policy provides an acceptable alternative means of assessing the body harness portion of a PCDS for operational approval.

6.1.1 Sections 27.865 and 29.865 state:

> *(c) For rotorcraft-load combinations to be used for human external cargo applications, the rotorcraft must– […]*
>
> *(c)(2) Have a reliable, approved personnel carrying device system that has the structural capability and personnel safety features essential for external occupant safety.*

6.1.2 Current guidance in AC 27-1B and AC 29-2C states that a rotorcraft flight manual (RFM) or rotorcraft flight manual supplement (RFMS) should include the following:

> *For HEC installations, the following additional limitations should be included in the RFM or RFMS.*
>
> *(1) The external load system meets the 14 CFR part 27 certification requirements for Human External Cargo (HEC).*
>
> *(2) Operation of the external load equipment with HEC requires the use of a Personnel Carrying Device System (PCDS), which must be approved by the local Aviation Authority. TSO-C167 provides one such acceptable means of approval.*

6.1.3 This policy is intended to provide an alternative method for use by the local FSDO inspector to determine the acceptability of body harnesses that are managed under OSHA safety requirements and manufactured under specific industry specifications, including ANSI/ASSP Z359.11. Harness approvals under existing type designs, STCs, or TSO-C167 are still acceptable. The harness may be provided by the operator or by the individual using the harness, while meeting all other requirements in section 7 of this policy.

6.1.4 This policy allows the local FAA Flight Standards, through approval of the operator's RLCFM, to accept alternative PCDS body harnesses. This allows FAA FSDO inspectors, as the local authority, an alternative means by providing additional guidance with respect to approvals of body harnesses for which a broadly recognized industry standard (other than TSO-C167) already exists. The guidance in AC 27-1B and AC 29-2C state that TSO-C167 is an approved minimum performance specification for HEC body harnesses. This policy provides guidance in determining other acceptable minimum performance specifications for HEC body harnesses in conjunction with OSHA standards.

6.1.5 Section 133.43(a) and (b) require an approved external-load attaching means consisting of the structural components used to attach an external load to an aircraft, including external-load containers, the backup structure at the attachment points, and any quick-release device used to jettison the external load. This does not include the PCDS.

6.2 **Design Considerations.**

6.2.1 Paragraphs 7.1 to 7.5 of this policy are items the local authority should verify in approving an operation that proposes the use of an alternative PCDS harness. These five items define an acceptable alternative PCDS harness as required in the external-load TC/STC flight manual (RFM or RFMS).

6.2.2 While non-aviation industry standards are often not designed specifically to meet airworthiness requirements, they may have design requirements that the FAA can recognize as an acceptable means of compliance to airworthiness requirements. This policy considers the safety features required by these design industry standards in the Class B HEC work environment.

6.2.3 The FAA has completed a comparison of ANSI/ASSP Z359.11 to the parts 27 and 29 design requirements. It has reviewed FBH meeting ANSI/ASSP Z359.11 requirements and determined that they meet or exceed the current part 27 and 29 requirements. The FAA finds that, together, a harness' ANSI/ASSP approval, and OSHA safety and oversight requirements for harnesses used during the non-aviation portion of the work, provide a safe equipage and operation under part 133 Class B HEC.

6.2.4 These requirements must be addressed in the RLCFM per § 133.47(c)(3).

7 ITEMS THAT MUST BE INCLUDED IN THE RLCFM FOR USE AND CONTROL OF ALTERNATIVE PCDS HARNESSES

7.1 PCDS in conjunction with an FAA-Approved HEC External Load Attaching Means.

7.1.1 Requirement: The rotorcraft external-load attaching means for HEC must be approved as compliant with § 27.865 at amendment 27-36 or later, or § 29.865 at amendment 29-43 or later. PCDS harnesses may be approved independent of the external-load attaching means to which they connect.

7.1.2 Rationale: The external-load attaching means for HEC must be approved as compliant with parts 27 and 29 requirements and often includes a specified PCDS harness. Alternative PCDS selected under this FAA policy are acceptable for use if the pilot-in-command and crew are familiar with the equipment and procedures prior to executing operations.

7.2 **Design Appropriate for Intended Function.**

7.2.1 Requirement: ANSI/ASSP Z359.11 harnesses approved for suspension and work performed in conjunction with OSHA oversight. Harnesses approved for suspension must have a frontal d-ring attachment point.

7.2.2 Rationale: Given the large range of operations for which human harnesses are required, and that the aviation portion of the work is part of that operation, it is important to evaluate harnesses to be used in HEC crew operations against the OSHA requirements for the appropriate industry and operations to be performed. OSHA regulations have been developed and evolved based on best practices and incidents within each industry. OSHA regulators have worked with industry partners to develop standards by which harnesses are certified and manufactured to protect workers and minimize injuries. These standards are recognized outside of aviation and have been developed into OSHA standards as required to provide a safe environment for the workers performing the tasks related to their occupation.

7.3 **Static Strength and Fatigue Resistance.**

7.3.1 Requirement: Use of an ANSI/ASSP Z359.11 approved harness will meet or exceed the static strength and fatigue resistance requirements of parts 27 and 29 for the harness. Inspections required by the ANSI/ASSP Z359.11 standard are acceptable in meeting these requirements. The Flight Standards inspector shall ensure the RLCFM, or other approved procedures, identifies the party responsible for verification of these inspections.

7.3.2 Rationale: Sections 27.865(f) and 29.865(f) require the PCDS and the attachment to the rotorcraft to have a fatigue evaluation under §§ 27.571 and 29.571. TSO-C167 includes this requirement. This covers the metallic components of the design. A fatigue evaluation is addressed throughout the ANSI specification by the significant amount of static test requirements, including a resultant additional load factor of 2.0 for material variability. The specification requires material wear evaluations by daily use inspection for wear and damage and the additional manufacturer's requirements for yearly documented inspections by a qualified person. Therefore, no further fatigue substantiation is necessary for each part of the harness that meets the applicable ANSI/ASSP Z359.11 standard.

7.4 **Maintenance Instructions.**

7.4.1 Requirement: ANSI/ASSP Z359.11 compliant harnesses are subject to maintenance, storage, and retirement times per the manufacturer's instructions, with a maximum life limit of five years from the date of manufacture (or the life set by the manufacturer, if less than five years). These requirements must be implemented and clearly specified in the RLCFM.

7.4.2 Rationale: The maintenance instructions should include an annual inspection by a qualified person specified by the manufacturer and have a life limitation of five years

from the date of manufacture (or the life indicated by the manufacturer, if less than five years). The pre- and post-flight check procedures should also be in the RLCFM to address the harness' functionality, damage, cleaning, and storage.

7.5 **RLCFM Requirement.**

As discussed above, any limitations or instructions for the use of Class B HEC equipment should be included in the RLCFM per § 133.47(c)(3).

8 EFFECT OF POLICY

8.1 The contents of this policy statement do not have the force and effect of law and are not meant to bind the public in any way. This policy statement is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.

8.2 This policy statement does not constitute a new regulation. Agency employees and their designees and delegations must not depart from this policy statement without the concurrence of the policy issuing office. The authority for FAA employees and designees to deviate from this policy statement is delegated to the Director of the Policy and Standards Division, AIR-600.

8.3 If a proposed method of compliance appears to differ from the guidance expressed in this policy statement, the reviewing office should coordinate any proposed approval or compliance finding with the policy-issuing office. Conversely, if the reviewing office believes that a proposed method of compliance, despite appearing to follow this policy statement, should not be approved, then it should coordinate any proposed denial with the policy issuing office.

8.4 Additional information on the effect of FAA policy statements may be found in FAA Order IR 8100.16, *Aircraft Certification Service Policy Statement, Policy Memorandum, and Deviation Memorandum Systems*.

9 IMPLEMENTATION

This policy discusses compliance methods that should be applied to Flight Standards operational approvals. The compliance methods apply to approvals with an application date on or after the effective date of the final policy. If the date of application precedes the effective date of the final policy, and the methods of compliance have already been coordinated with and approved by the FAA or its designee, the applicant may choose to either follow the previously acceptable methods of compliance or follow the guidance in this policy.

10 CONCLUSION

The FAA has concluded that an FBH, when used in accordance with a RLCFM, that meets paragraphs 7.1 to 7.5 of this policy is an acceptable alternative PCDS harness. If

other data were to be presented which demonstrated otherwise, the intent and content of this policy may require change.

The FAA accepts ANSI/ASSP Z359.11 as acceptable for use in conjunction with OSHA safety regulation and oversight for Class B HEC operations.

DANIEL J. ELGAS

Digitally signed by DANIEL J. ELGAS
Date: 2025.09.08 11:42:50 -04'00'

Daniel J. Elgas
Aviation Safety
Director, Policy & Standards Division, Aircraft Certification Service