



U.S. Department
of Transportation
**Federal Aviation
Administration**

Aviation Safety

800 Independence Ave
Washington, DC 20591

Exemption No. 18736
Regulatory Docket No. FAA-2020-0545

Mr. Timothy Hansen
Firehawk Helicopters, Inc.
8850 Airport Boulevard
Leesburg, FL 34788

Dear Mr. Hansen:

This letter is to inform you that the Federal Aviation Administration (FAA) has partially granted your request for exemption. It transmits the FAA's decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

The Basis for Our Decision

By letters dated April 20, 2018 (posted to regulations.gov on May 26, 2020) and June 30, 2020, you petitioned the FAA on behalf of Firehawk Helicopters, Inc. (Firehawk) for an exemption from §§ 91.9(a), 133.43(a) and (b) of Title 14, Code of Federal Regulations (14 CFR). The proposed exemption, if granted, would allow Firehawk to use alternative rope, connecting devices and Personnel Carrying Device Systems (PCDS) for human external cargo (HEC) operations for Supplemental Type Certificate (STC) and Rotorcraft Flight Manual Supplement (RFMS) for STC SR03681NY installed on the Airbus AS350 series Type Certificated Data Sheet (TCDS) number H9EU, and STC SR02693LA and RFMS installed on the McDonnell Douglas (MD) 369 and 500 series TCDS number H3WE aircraft(s). Firehawk will use company-owned or leased helicopters authorized in Firehawk's Letter of Authorization (LOA) aircraft listing to perform Class B HEC operations. Firehawk makes this request because of the unavailability of FAA-approved attaching means for the aircraft listed and/or FAA-approved external ropes, connecting devices and PCDS compatible with the FAA-approved attaching means for use in a high-electrical environment related to conduction, heat, flashpoints, and abrasion.

The FAA has issued a grant of exemption in circumstances similar in all material respects to those presented in your petition. In Grant of Exemption No. 18595 (copy enclosed), the FAA found that willingness to comply with the HEC regulatory requirements currently is hindered by the unavailability of FAA-approved attaching means for the aircraft specifically listed, and external ropes, connecting devices and PCDS compatible with the approved attaching means for use in a high-electrical environment, and that a good faith alternative means of compliance is provided.

Having reviewed your reasons for requesting an exemption, we find that—

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- They are similar in all material respects to relief previously requested in the enclosed Grant of Exemption No. 18595;
- The reasons stated by the FAA for granting the enclosed Grant of Exemption No. 18595 also apply to the situation you present; and
- A grant of exemption is in the public interest.

The FAA's Decision

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to Firehawk.

In our review of Firehawk's petition, the FAA re-evaluated the FAA-approved HEC attaching means with appropriate rotorcraft flight manual supplement for the AS350 series TCDS# H9EU helicopter. The FAA determined that the STC is an all-inclusive STC package and requires no additional change to the type design, the performance standards and test criteria by which the attaching means was certified, and identifies both the applicable cargo types (non-human external cargo (NHEC) or HEC) and the jettison capability types (jettisonable or non-jettisonable). The structural loads and operating envelopes for each cargo type have been determined and used to formulate the flight manual supplement and basic loads. The applicant presented by analysis, test, or both, that the rotorcraft structure, the external load attachment means, and the PCDS meet the specific requirements of § 27.865 and other relevant part 27 requirements for the proposed operating envelope. Based on the re-evaluation of the FAA-approved HEC attaching means, rope, connecting devices and PCDS for the AS350 series helicopter, the FAA has determined the proposed relief requested for this make and model aircraft is not in the public interest and does not provide an equivalent level of safety to the complete FAA-approved STC.

Under the authority provided by 49 U.S.C. 106(f), 40113, and 44701, which the FAA Administrator has delegated to me, I hereby deny the proposed relief for STC SR03681NY and associated RFMS for the AS350 series helicopter for the reasons stated above. Under the same authority, I hereby grant Firehawk Helicopters, Inc. (Firehawk) an exemption from §§ 91.9(a) and 133.43(a) and (b) to the extent necessary to allow Firehawk to use STC SR02693LA for the MD369 and 500 series helicopters (TCDS #H3WE). Firehawk must utilize the appropriate attaching means and RFMS on company-owned or leased helicopters authorized in Firehawk's LOA aircraft listing to perform Class B HEC operations, subject to the conditions and limitations described below.

Conditions and Limitations

1. Firehawk must follow the procedures set forth in the Rotorcraft Flight Manual (RFM) and RFMS, Rotorcraft Load Combination Flight Manual (RLCFM), STC and Instructions for Continued Airworthiness (ICAs) that are specific to external cargo operations.

2. This exemption requires the use of FAA approved attaching means that complies with 14 CFR §§ 27.865 or 29.865 for Class B HEC operations where the operator is requesting the use of a different external rope, connecting devices, and PCDSs only.
3. Firehawk must follow FAA accepted instructions for continued airworthiness for the attaching means assembly.
4. Under this exemption, the system installed on the aircraft should be HEC approved under 14 CFR §§ 27.865 and/or 29.865. The system will have two Quick Release Systems (QRS): one for the primary hook and one for the Backup Quick-Release Subsystem (BQRS). The control for the hook(s) shall have a dual-action quick-release device readily accessible to either the pilot or crewmember.
5. Class B HEC operations may be conducted during day Visual Flight Rules (VFR) only.
6. Prior to conducting any HEC operations, pilots and crewmembers will familiarize themselves with Firehawk's procedures as set forth in its RLCFM.
7. Prior to any Class B HEC operation, the pilot and all crewmembers must have established a clear method of communication. This may consist of hand signals, two-way radio communications, or both. Communications must be tested prior to each operation. When there are communication failures or confusion, operations must be suspended until clear communications are restored.
8. Firehawk must conduct a daily Class B HEC briefing attended by all persons involved in the operations for that particular day. The briefing should cover concerns, identified risks, and hazards. Additionally, this briefing will cover:
 - a. Defining the core operational and individual tasks for the day;
 - b. Identifying specific hazards;
 - c. Discussing hazard and risk mitigation;
 - d. Communication issues;
 - e. Weather conditions and forecasts (e.g., wind gusts, lightning, or other weather factors that could increase risk);
 - f. Any revisions to the site-specific safety plan;
 - g. Universal "go/no-go" authority;
 - h. Pre-operation reconnaissance flight;
 - i. Personal protective equipment (PPE) appropriate for the task;

- j. Reviewing key points of the Emergency Action Plan; and
 - k. Weight and Balance (W&B) calculation.
9. Pilots must receive initial and annual recurrent documented training in the following subject areas prior to HEC operations under this exemption:
- a. Knowledge and skill training;
 - b. Demonstrated proficiency with precision vertical reference load placement;
 - c. Proper load configuration, use, and application of Class B HEC;
 - d. Installation, inspection, and operation of secondary safety device(s);
 - e. Acceptance or rejection criteria of HEC attaching means to include long lines, chairs, and/or harnesses;
 - f. D-Ring Reversal / Dynamic Rollout During Winching or Long Line Operations;
 - g. Hazard identification, risk analysis, and mitigation;
 - h. Crew Resource Management (CRM);
 - i. Communication;
 - j. Normal/abnormal and emergency procedures pertinent to Class B HEC operations;
 - k. Electrical wire environment hazards; and
 - l. Fuel management.
10. Crewmembers working on or around the helicopter must receive initial and annual recurrent documented training by a competent person in the following areas:
- a. Acceptance or rejection criteria of HEC attaching means to include long lines, chairs, and/or harnesses;
 - b. Task-specific operations;
 - c. Hazard identification, risk analysis, and mitigation;
 - d. CRM;
 - e. Communication:
 - i. Emergency procedures pertinent to Class B HEC operations;
 - ii. Ground;
 - iii. Flight;
 - f. Mock-up training and review of:
 - i. Rigging inspection and acceptance or rejection criteria of equipment;

- ii. Communication procedures;
 - iii. Simulation of task (both crew and pilot tasks); and
 - g. Documented completed proficiency on all of the above.
11. Pilots operating under this exemption must have previous HEC training and/or experience working for Firehawk.
 12. Pilot and crewmembers must be trained in the use and operation of the installed attaching means, BQRS, and associated quick release systems. That training must cover procedures for emergency release of the BQRS and the primary attaching means in case either system fails.
 13. Firehawk must perform periodic inspection of the BQRS equipment in accordance with the manufacturer's program.
 14. The FAA accepts consensus standard ASME B30 as a basis to construct/build Long Line ropes based on Public Law 104-113, National Technology Transfer and Advancement Act of 1995, established in OMB Circular No. A-119. Firehawk must ensure their Long Line ropes are built to ASME B30 standards.
 15. The FAA accepts consensus standard ANSI Z359, NFPA 1983 as a basis to construct/build harnesses based on Public Law 104-113, National Technology Transfer and Advancement Act of 1995, established in OMB Circular No. A-119. Firehawk must ensure their harnesses are built to either ANSI Z359, NFPA 1983 or TSO-C167 standards.
 16. The FAA accepts consensus standard ANSI Z359, NFPA 1983 or ASME B30 as a basis to construct/build metal connecting components based on Public Law 104-113, National Technology Transfer and Advancement Act of 1995, established in OMB Circular No. A-119. Firehawk must ensure their metal connecting components are built to either ANSI Z359, NFPA 1983 or ASME B30 standards.
 17. For the purpose of this exemption, the following life limits apply. Firehawk shall follow the requirements in the Airworthiness Limitations Chart listed below or the manufacturer's Airworthiness Limitations, whichever is more restrictive. Defined by Advisory Circular (AC) 27-1B, the PCDS is 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 by a Long Line rope. Additionally, the following items of the Long Line are life-limited. Captured metal parts (load rings, snap hooks, carabineers, etc.) associated with the assemblies are replaced at retirement cycle listed in the chart below.

Airworthiness Limitation Chart

Description	Maximum Service Life*
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Y-Rope	2 years
Long Line	2 years
Lanyard	2 years
Harness	2 years
Dielectric Long Line	2 years

*Service life begins when the item is placed into service in conjunction with this exemption and does not conflict with the manufacturer's inspection and replacement life limits. This date must be marked by the operator on the component ID tag and recorded in the equipment logbook.

18. For the purpose of this exemption, the following life limits apply. Firehawk shall inspect the Long Lines that includes a check before each use (not a maintenance activity) and an annual inspection. The inspection consists of the Y-rope assembly, load rings, carabineer, long line, weight bag, rigging plate, lanyard, carabineer, and snap hook. Refer to the manufacturer's Long Line and/or equipment user manual. All of the manufacturer's inspection requirements must be completed and documented in the equipment logbook. Inspect the parts in a clean, well-lighted room using standard dimensional measuring tools and visual methods. Replace any part found beyond limits. **No repairs authorized.** See below for inspection requirements.

Inspect the Y-rope Assembly per the following.

1. Open the covers and inspect them on the inside and outside per the following.
 - Loose, cut or pulled zipper stitching.
 - Loose, cut or pulled stitching of cover to webbing.
 - Torn, cut or otherwise damaged cover material.
 - Legibility of "PRIMARY" and "SECONDARY" markings.
 - Condition and function of zipper.
 - Condition and function of hook and loop closure strap.
2. Inspect the internal webbing material of the Y-rope Assembly per the following.
 - Legibility and security of ID tag.
 - Acid or caustic burns.
 - Holes, tears, cuts or snags.
 - Broken or worn stitching in the load bearing splices.
 - Excessive abrasive wear.
 - Knots in any part of the sling.
 - Discoloration and brittle or stiff areas on any part of the sling.
 - Wear on Load Ring: Wear on inside of ring – minimum thickness of cross section of ring - 0.50 in. (12.7 mm).

Inspect the high modulus fibers Long Line Assembly per the following.

Lay out the long line on a clean surface, as it should be thoroughly inspected both visually and by feel over its entire length.

1. Unzip the cover and inspect it inside and outside per the following.
 - Loose, cut, or pulled zipper stitching
 - Torn, cut, or otherwise damaged loops (attaching each end of cover to thimbles).
 - Torn, cut, or otherwise damaged cover material.
 - Condition and function of zipper.
 - Condition and function of hook and loop closure strap.
2. Inspect the rope and end terminations of the Long Line Assembly for the following.
 - Security of thimble, verify it is securely captured by the eye splice.
 - Condition of thimbles, inspect for signs of damage including corrosion, cracks, distortion, nicks, or rough surfaces.
 - Condition of the rope's lockstitch thread and whipping thread at each eye splice, inspect for broken, cut or frayed threads.
 - Legibility and security of ID tag.

Along the entire length of the rope, inspect for the following.

- Externally observed abrasion, cut strands or areas of extensive fiber breakage.
- Fiber breakage, fused or melted fibers observed internally (observed by prying or twisting to open the strands). Remove from service if an estimated 10 percent of fiber in any strand or the rope as a hole is damaged.
- Uniform fiber breakage along the length of rope such that the entire rope appears covered with fuzz or whiskers.
- Consistent diameter of the rope. Measure the rope diameter in several locations and inspect for flat areas, bumps, or lumps. Remove from service if the diameter has been reduced by more than 10 percent in any area.
- Discoloration, brittle fibers and hard or stiff areas that may indicate chemical, ultraviolet or heat damage.
- Melted, hard or charred areas that may be evidence of excessive heat. Remove from service if areas in this condition affect more than 10 percent of the rope diameter or affect several adjacent strands along the length that affect more than 10 percent of strand diameters.
- Cleanliness of the rope, stiffness of the rope may indicate dirt or grit embedded within its fibers.

Inspect the Lanyard Assembly per the following.

1. Unzip the cover and inspect the inside and outside per the following.
 - Loose, cut or pulled zipper stitching
 - Loose, cut or pulled stitching of cover to webbing.
 - Torn, cut or otherwise damaged cover material.
 - Condition and function of zipper.
 - Condition and function of hook and loop closure strap.
2. Inspect the load carrying webbing material of the Lanyard Assembly for the following.
 - Legibility and security of ID tag.
 - Acid or caustic burns.
 - Holes, tears, cuts or snags.
 - Broken or worn stitching in the load bearing splices.
 - Excessive abrasive wear.
 - Knots in any part of the sling.
 - Discoloration and brittle or stiff areas on any part of the sling.
3. Inspect the captive carabineer and the two snap hooks of the Lanyard Assembly: Nicks, dents, scratches, corrosion – 0.020 in. (0.127 mm) deep. Proper engagement and operation of gate mechanism, opening action should be free of any binding that may be an indication of deformation.

Inspect the Rigging Plate per the following.

1. Inspect the Rigging Plate - Nicks, dents, scratches, corrosion beyond 0.020 in. (0.127 mm) deep is considered unserviceable and require replacement. Ensure no visible wear on the inside diameter of holes for attachment to long line and loads.
19. If applicable, Firehawk's Dielectric Long Line inspections shall be completed in accordance with the Long Line manufactures inspection and maintenance program. Subject to the maximum service, life limits per the chart listed above.
 20. If applicable, Firehawk's Metal Long Line inspections shall be completed in accordance with the Long Line manufactures inspection and maintenance program. Subject to the maximum service, life limits per the chart listed above.
 21. Firehawk may exercise the privileges of this grant of exemption within sterile areas that are not over person(s) or property on the surface that are not directly associated with the HEC operation.

22. Before conducting HEC operations, Firehawk must provide a copy of this grant of exemption to those person(s) being carried external to the aircraft.
23. Before conducting HEC operations, Firehawk must provide a copy of this grant of exemption to its responsible Flight Standards Office.

If you request an extension or amendment to this exemption, please submit your request by using the Regulatory Docket No. FAA-2020-0545 (<http://www.regulations.gov>). In addition, you should submit your request no later than 120 days prior to the exemption's expiration date listed below or the date you need the amendment.

Any extension or amendment request must meet the requirements of § 11.81 of 14 CFR.

This exemption terminates on March 31, 2023, unless sooner superseded or rescinded.

Sincerely,

Enclosure