Rules and Regulations

Federal Register
Vol. 90, No. 148
Tuesday, August 5, 2025

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 29

[Docket No. FAA–2024–2383; Special Conditions No. 29–059–SC]

Special Conditions: Sikorsky Model S–61A, S–61L, and S–61N (Including Those Modified by Supplemental Type Certificate (STC) No. SH640NE) Helicopters; Overload Protection Device in a Hoist

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for Sikorsky Aircraft Corporation and Sikorsky Aircraft (Sikorsky) Model S–61A, S–61L, and S–61N helicopters. These helicopters, as modified by Carson Helicopters Inc. (Carson), will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category rotorcraft. This design feature is an overload protection device (OLPD) installed in the hoist. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: Effective August 5, 2025.

FOR FURTHER INFORMATION CONTACT: Scott Johnson, Mechanical Systems Section, AIR–623, Technical Policy Branch, Policy and Standards Division, Aircraft Certification Service, Federal Aviation Administration, telephone 202–267–4644; email *Scott.R.Johnson@faa.gov.*

SUPPLEMENTARY INFORMATION:

Background

On September 21, 2021, Carson applied for an amendment to supplemental type certificate (STC) No. SR02507NY to add a hoist with an OLPD to be installed on Sikorsky Model S–61A, S–61L, and S–61N (including those modified by STC No. SH640NE, which shortens the S–61N by 50 inches) helicopters. The Model S–61 helicopters subject to these special conditions, currently approved under Type Certificate Nos. H2EA and 1H15, are twin-engine rotorcraft. The maximum takeoff weight is between 19,000 and 22,000 pounds, depending on configuration, and the helicopter has a maximum capacity of 39 passengers and a crew of 2.

Type Certification Basis

Under the provisions of § 21.101, Carson must show that the helicopters for which it makes application to modify by STC No. SR02507NY, as changed, continue to meet the applicable provisions of the regulations listed in each helicopter's respective type certificate or the applicable regulations in effect on the date of application for the change except for earlier amendments as agreed upon by the FAA.

If the Administrator finds that the applicable airworthiness regulations (*e.g.,*14 CFR part 29) do not contain adequate or appropriate safety standards for the Sikorsky Model S–61A, S–61L, and S–61N (including those modified by STC No. SH640NE) helicopters because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Sikorsky Model S–61A, S–61L, and S–61N (including those modified by STC No. SH640NE) helicopters must comply with the exhaust-emission requirements of part 34 and the noise-certification requirements of part 36.

The FAA issues special conditions, as defined in § 11.19, in accordance with § 11.38, and they become part of the type certification basis under § 21.101.

Novel or Unusual Design Features

The Sikorsky Model S–61A, S–61L, and S–61N (including those modified by STC No. SH640NE) helicopters will incorporate the following novel or unusual design feature:

An OLPD installed in a hoist.

Discussion

These special conditions are necessary because regulations concerning external load carriage requirements for part 29 rotorcraft do not address hoists that include an OLPD feature.

In 1991 the FAA tasked the External Load Working Group (Working Group) of the Aviation Rulemaking Advisory Committee (ARAC) with investigating the need to complement the rotorcraft 14 CFR part 133 Class D external load carriage regulations (including transport of passengers external to the rotorcraft). Upon completion of their review, the Working Group issued a report [1] recommending updates to the external load regulations in 14 CFR part 27 and part 29.

Based on the Working Group's report, the FAA recommended several changes to part 27 and part 29 to improve safety. On July 13, 1998, the FAA published a Notice of Proposed Rulemaking [2] (NPRM) (63 FR 37746). This NPRM proposed amendments to the airworthiness standards for rotorcraft load combination certification. The FAA issued the final rule based on this NPRM for part 27 at amendment 27–36 and part 29 at amendment 29–43; however, the revised parts 27 and 29 did not address OLPD features in hoist systems. As a result, the current §§ 27.865 and 29.865 do not address hoist systems with OLPD features.

The hoist being installed by Carson includes an OLPD in its design. The OLPD reduces the likelihood of the loss of rotorcraft and crew due to an entanglement of the hoist cable. Upon activation, the OLPD affords the pilot time to respond and potentially jettison

[1] External Load Working Group report *https://www.faa.gov/sites/faa.gov/files/advisory_rulemaking_committees/RelwgT1-12041991.pdf.*

[2] Docket No. 29277; Notice No. 98–6, ''Rotorcraft Load Combination Safety Requirements.''

the load to save the aircraft and the crew onboard.

Because the OLPD activation range is less than the limit static load factor for human external cargo published in §§ 27.865 and 29.865, it introduces a risk that the cable could completely unspool (*i.e.,* loss of cargo), particularly if unspooling is not subsequently arrested once the load is reduced below the activation threshold. Despite this risk, the overall safety will be improved with the inclusion of this OLPD. Meeting the requirements of these special conditions demonstrates that the OLPD in the hoist installed by Carson will allow an OLPD activation and recapture in response to the load conditions outlined in these special conditions. By ''activation'' the FAA means uncommanded cable payout (*i.e.,* slippage). The FAA intends the activation range to bound payout. The FAA is requiring an activation range for these special conditions of 2.2 to 3.5 times the rated load. The functionality and activation requirement comes from SAE AS6342, ''Minimum Operational Performance Standard (MOPS) for Helicopter Hoist Systems,'' December 2020, section 4.7 paragraph 2.[3]

The OLPD must activate within the range of 2.2 to 3.5 times the rated load. These special conditions do not change the structural limit load factors specified in §§ 27.865 and 29.865. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

In addition to the activation range explained previously, the OLPD must be designed to continue working correctly or as expected in every way (*i.e.,* function properly) when experiencing the maximum external limit load specified in §§ 27.865 and 29.865.

Discussion of Comments

The FAA issued Notice of Proposed Special Conditions No. 29–24–02–SC for Sikorsky Model S–61A, S–61L, and S–61N (including those modified by STC No. SH640NE, which shortens the S–61N by 50 inches) helicopters, which published in the **Federal Register** on March 26, 2025 (90 FR 13705).

The FAA received comments from five commenters, including Carson, Onboard Systems, Airbus Helicopters, and the European Union Aviation Safety Agency (EASA).

[3] SAE AS6342 is available for purchase at *https://saemobilus.sae.org/standards/as6342-minimum-operational-performance-standard-mops-helicopter-hoist-systems.*

Supportive Comments

The FAA received a comment from an anonymous commenter, who supported the proposed special conditions without change.

Load Function

Paragraph (a)(1) of the special conditions requires the OLPD to function properly. EASA requested the FAA clarify paragraph (a)(1) regarding the following points: (1) a single failure should not lead to a catastrophic event, which includes serious injury or fatality of human external cargo; and (2) the reliability of the OLPD should be in accordance with the potential failure criticality.

The FAA addresses structural requirements through 14 CFR 29.571 and system requirements through 14 CFR 29.1309. The FAA's current guidance on reliability and failure criticality is contained in Advisory Circular (AC) No. 29–2C, ''Certification of Transport Category Rotorcraft.'' AC No. 29–2C at change 9 references ARP4761 ''Guidelines and Methods for Conducting the Safety Assessment Process on Civil Airborne Systems and Equipment,'' which provides guidance on labeling the severity and probability and assigning an assurance level requirement for which to hold the applicant accountable.

Load Limits

Airbus Helicopters, Onboard Systems, and Carson requested the FAA revise the special conditions to define activation consistent with SAE AS6342. Onboard Systems stated activation should be limited to the OLPD static response, and the OLPD dynamic response should be characterized or demonstrated through tests in SAE AS6342 Section 5.1.9.1. Carson requested the FAA define activation solely as the initiation of slip (static slip point). Airbus Helicopters stated that while the lower limit of the activation band can be well controlled, the upper limit may be higher than 3.2 times the rated load, that the 3.2 value is arbitrary, and that any upper limit should be justified depending on the undesired event the OLPD is designated for. Airbus Helicopters further stated that in this context, the upper limit as specified in paragraph (a)(2) of the special conditions appears to be redundant with paragraph (a)(3)(i). Airbus Helicopters and Onboard Systems expressed concern that, under the special conditions as written, existing hoist/OLPD designs would be ineligible for installation certification and new designs would be unable to meet the requirements.

The FAA agrees and has revised the Discussion section to clarify that ''activation'' means uncommanded cable payout (*i.e.,* slippage). The FAA also agrees that the proposed maximum limit of the activation range tolerance is too restrictive for both OLPD activation and recapture and has revised paragraph (a)(2) of the special conditions to change the activation range to 2.2 to 3.5 times the rated load. The FAA has also added a requirement to paragraph (a)(2) that recapture must occur before the load falls below 2.2 times the rated load (2.2 or greater). Paragraph (a)(3)(i) of the special conditions requires that the OLPD prevent excess cable tension that could result in cable failure or pulling the aircraft into an unrecoverable attitude.

The FAA notes that it did not choose the proposed 3.2 value arbitrarily. Over several years of discussions among the FAA, EASA, and industry, 3.2 was determined to be an appropriate value that would provide enough protection from cable failure due to excessive loads. This number also keeps the energy from a broken cable low enough to prevent the cable from rebounding into the rotor system. However, as previously explained, the FAA has increased the limit to 3.5 times the rated load to provide additional range to the tolerance band. Regarding the comment on justification for the upper limit setting, the FAA has determined that the minimum operational performance for OLPD is that it must prevent excess cable tension that might result in cable failure or loads on the helicopter that endanger the aircraft. Paragraphs (a)(2) and (a)(3)(i) are two separate requirements. Paragraph (a)(2) establishes a maximum hoist design point, while paragraph (a)(3) contains installation level requirements protecting the aircraft and HEC. EASA requested the FAA evaluate whether the minimum load factor of 2.2 is sufficiently above the normal operational load to prevent the activation of the OLPD during normal operation.

The FAA acknowledges the comment and finds the 2.2 load factor acceptable, as established and published in SAE AS6342. No changes were made as a result of this comment.

Carson recommended that OLPD activation must not occur below 2.2 times the rated load to prevent unintentional OLPD activation.

The FAA agrees. Paragraph (a)(2) of the special condition already requires a minimum activation range of 2.2 times

the rated load. No changes are necessary as a result of this comment.

Carson recommended the FAA revise paragraph (a)(3)(iv) of the proposed special conditions to address arresting cable slip (recapture) separately.

The FAA agrees. The Discussion section of the proposed special conditions defined activation as all states of its intended function (uncommanded cable payout and recapture). The FAA has revised the Discussion section of these final special conditions to limit the definition of activation as cable payout (slippage). Recapture is a separate event from OLPD activation. Recapture must occur before the load falls below 2.2 times the rated load as stated in paragraph (a)(2).

Aging Factors

EASA stated that the proposed special conditions do not address the aging of the OLPD through time or through an OLPD activation event and that friction material could degrade over time, which could lower the OLPD set point below the prescribed value. EASA requested the FAA revise the proposed special conditions to account for these factors.

The FAA agrees and has revised paragraph (a)(2) of the special conditions to clarify that production and maintenance tolerances include aging and wear considerations.

Design Activation Limits

EASA requested the FAA clarify that ''design activation limit (*i.e.* defined set point(s))'' in paragraph (a)(3) of the proposed special conditions corresponds to the activation range in paragraph (a)(2).

The FAA concurs with EASA that the ''design activation limit (*i.e.* defined set point(s))'' corresponds to the activation range and added clarification to the special condition.

Airbus Helicopters commented that the OLPD effectivity may be impacted when the hoist-cable is fully reeled-out due to the cable being attached to the drum. Airbus Helicopters stated that in this condition, the load required to break the cable off the drum can be even higher than the OLPD upper activation limit.

The FAA disagrees. The OLPD would not be further impacted from the cable being fixed to the drum causing even higher loads to break the cable from the drum. There is a minimum requirement of cable wraps around the drum determined by the hoist manufacturers that must be present in order to maintain load capacity.

Airbus Helicopters commented that with state-of-the-art hoists available on the market, arresting the cable after a triggering event may occur close to or slightly below the lower OLPD activation limit due to the physics of friction. Airbus Helicopters further stated that the time or cable-length to arrest the load after an activation event is dependent on various conditions, such as actual payload, cable-length, cable-reeling (slipping) speed, and temperature.

The FAA disagrees that the hoist will not recapture below 2.2 times the rated load. Industry set this condition in SAE AS6342 Section 4.7. The FAA will not certify a hoist installation that allows the load to go below 2.2 times the rated load.

Out of Scope Comments

The FAA received some comments that were beyond the scope of the proposed special conditions. The FAA did not make any changes as a result of these comments.

EASA requested the FAA revise the proposed special conditions to include a requirement that the cable sustain a minimum load of 3.2g.

These special conditions address the OLPD installed on the hoist system and do not address the cable. The cable is part of the hoist critical load path and is addressed through compliance with 14 CFR 29.865 and other relevant regulations within 14 CFR part 29 Subparts C and D.

EASA requested the FAA revise paragraph (a)(3)(iv) of the proposed special conditions to include a maximum unspooling length before arresting the human external cargo (HEC) and a maximum arresting load similar to the one in the EASA ETSO–2C208 paragraph 5.1.9.1.2. EASA expressed concern that a full cable unspooling or significant shock load from the cable arresting could cause injury to the HEC.

The FAA disagrees. While the FAA acknowledges the comment that human external cargo could experience bodily injury from a full cable unspooling or shock loads from recapture, these conditions are out of scope for these special conditions. These events are speculative, and the FAA does not have data to support this happens regularly during operations in the field.

Except as discussed above and in the Summary of Changes, the special conditions are adopted as proposed.

Applicability

As discussed above, these special conditions are applicable to the Model S–61 helicopters listed on the approved model list (AML) of STC No. SR02507NY, which is available at *https://drs.faa.gov/.* Should Carson apply at a later date for a change to STC No. SR02507NY to include any other model on the AML to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well.

Under standard practice, the effective date of final special conditions would be 30 days after the date of publication in the **Federal Register**. However, as the certification date for Sikorsky Model S–61A, S–61L, and S–61N (including those modified by STC No. SH640NE, which shortens the S–61N by 50 inches) helicopters, as modified by Carson, is imminent, the FAA finds that good cause exists to make these special conditions effective upon publication.

Conclusion

This action only affects certain novel or unusual design features for the helicopters listed on the AML of STC No. SR02507NY. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the helicopter.

List of Subjects in 14 CFR Part 29

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

Authority Citation

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40113, 44701, 44702, 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for the Sikorsky Model S–61A, S–61L, and S–61N, and S–61N (including those modified by STC No. SH640NE) helicopters listed on the AML of STC No. SR02507NY, as modified by Carson.

(a) The Overload Protection Device (OLPD) must:

(1) Function properly for all loads up to and including the § 29.865(a) maximum external limit load.

(2) Be designed to hold any load up to 2.2 times the rated load and shall activate between 2.2 times the rated load and 3.5 times the rated load. This activation range must take into account production and maintenance tolerances (including aging and wear considerations), variations due to the environment (*e.g.,* temperature and humidity), and operations (*e.g.,* length of cable paid out). The above requirements must be met over the entire activation range. Recapture must never be below 2.2 times the rated load.

(3) Protect the helicopter and cargo by incorporating design activation limits (*i.e.,* defined set point(s) established in paragraph (a)(2)) which:

(i) Prevent excess cable tension that might result in cable failure or loads on the helicopter that endanger the aircraft,

(ii) Prevent uncommanded cable payout when experiencing cable loads below the activation range,

(iii) Allow cable payout when experiencing loads above the activation range, and

(iv) Arrest cable unspooling to prevent loss of cargo after an activation event.

(b) The OLPD installation, maintenance, and inspection instructions must be made a part of the applicable section(s) of the Instructions for Continued Airworthiness (ICA).

Issued in Des Moines, Washington, on July 31, 2025.

Michael T. Thompson,

Acting Manager, Technical Policy Branch, Policy and Standards Division, Aircraft Certification Service.

[FR Doc. 2025–14779 Filed 8–4–25; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2025–1726; Project Identifier 2008–NM–169–AD; Amendment 39–23100; AD 2010–09–11R1]

RIN 2120–AA64

Airworthiness Directives; BAE SYSTEMS (Operations) Limited Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; removal; request for comments.

SUMMARY: The FAA is removing Airworthiness Directive (AD) 2010–09–11, which applied to all BAE SYSTEMS (Operations) Limited Model BAe 146-series and Model Avro 146–RJ series airplanes. AD 2010–09–11 required repetitive inspections for cracking and corrosion and applicable corrective actions. Since the FAA issued AD 2010–09–11, the FAA issued AD 2022–06–14 to address the same unsafe condition. Accordingly, AD 2010–09–11 is removed.

DATES: This AD becomes effective August 5, 2025.

The FAA must receive comments on this AD by September 19, 2025.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA–2025–1726; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Darren Gassetto, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516–228–7323; email: *9-AVS-AIR-BACO-COS@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this final rule. Send your comments using a method listed under the **ADDRESSES** section. Include ''Docket No. FAA–2025–1726; Project Identifier 2008–NM–169–AD'' at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to *regulations.gov*, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as ''PROPIN.'' The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Darren Gassetto, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: 516–228–7323; email: *9-AVS-AIR-BACO-COS@faa.gov.* Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2010–09–11, Amendment 39–16276 (85 FR 23568, May 4, 2010) (AD 2010–09–11), for all BAE SYSTEMS (Operations) Limited Model BAe 146-series and Model Avro 146–RJ series airplanes. AD 2010–09–11 required repetitive X-ray inspections to detect fatigue cracks in the left- and right-wing upper skins, joint straps, and stringers in the vicinity of rib '0' until the following inspections are initially done:

- Repetitive high frequency eddy current (HFEC) inspections of the front and rear spar flanges, a detailed visual inspection of the stringers, and a detailed visual inspection of the stringer crown fittings, all at the rib '0' joint strap for cracking and corrosion.

AD 2010–09–11 also required repetitive detailed visual and HFEC inspections to detect cracking and corrosion of the rib '0' strap, radiographic inspections of the rib '0' joint, and ultrasonic inspections of the skin at the rib '0' joint strap; repairing any cracking or corrosion; and reporting initial inspection findings.

AD 2010–09–11 was prompted by AD 2008–0168, dated September 2, 2008, issued by the European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union. EASA determined that a revised inspection program for the wing top skin and joint strap at rib '0' is necessary to ensure the continued structural integrity of this area. The FAA issued AD 2010–09–11 to address cracking of the wing center section top skin, which could lead to structural failure and consequent loss of the airplane.