Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

NUCLEAR REGULATORY COMMISSION

10 CFR Part 73

[NRC–2008–0619]

RIN 3150–AI25

Requirements for Fingerprint-Based Criminal History Records Checks for Individuals Seeking Unescorted Access to Research or Test Reactors

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule; reopening of comment period.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is reopening the public comment period for the proposed rule that was published on July 10, 2010. The proposed rule would amend the NRC's regulations by requiring research and test reactor licensees to obtain a fingerprint-based criminal history records check before granting any individual unescorted access to their facilities. The comment period for this proposed rule, which closed on October 4, 2010, is reopened and will remain open until January 31, 2011.

DATES: The comment period for the proposed rule published July 10, 2010 (75 FR 42000), has been reopened and now closes on January 31, 2011. Comments received after this date will be considered if it is practical to do so, but the NRC is able to assure consideration only for comments received on or before this date.

ADDRESSES: Please include Docket ID NRC–2008–0619 in the subject line of your comments. For instructions on submitting comments see the **SUPPLEMENTARY INFORMATION** section of this document. You may submit comments by any one of the following methods.

Federal rulemaking Web site: Go to *http://www.regulations.gov* and search for documents filed under Docket ID NRC–2008–0619. Address questions about NRC dockets to Carol Gallagher, telephone: 301–492–3668; e-mail: *Carol.Gallagher@nrc.gov.*

Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, ATTN: Rulemakings and Adjudications Staff.

E-mail comments to: Rulemaking.Comments@nrc.gov. If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at 301–415–1966.

Hand deliver comments to: 11555 Rockville Pike, Rockville, Maryland 20852 between 7:30 a.m. and 4:15 p.m. during Federal workdays (telephone: 301–415–1966).

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at 301–415–1101.

FOR FURTHER INFORMATION CONTACT: A. Jason Lising, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; telephone: 301–415–3841; e-mail *Jason.Lising@nrc.gov;* or Timothy A. Reed, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; telephone: 301–415–1462; e-mail *Timothy.Reed@nrc.gov.*

SUPPLEMENTARY INFORMATION:

Submitting Comments and Accessing Information

Comments submitted in writing or in electronic form will be posted on the NRC Web site and on the Federal rulemaking Web site, *http://www.regulations.gov.* Because your comments will not be edited to remove any identifying or contact information, the NRC cautions you against including any information in your submission that you do not want to be publicly disclosed. The NRC requests that any party soliciting or aggregating comments received from other persons for submission to the NRC inform those persons that the NRC will not edit their comments to remove any identifying or contact information, and therefore, they should not include any information in their comments that they do not want publicly disclosed.

You can access publicly available documents related to this document using the following methods:

NRC's Public Document Room (PDR): The public may examine and have copied for a fee publicly available documents at the NRC's PDR, Room O1–F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

NRC's Agencywide Documents Access and Management System (ADAMS): Publicly available documents created or received at the NRC are available electronically at the NRC's Electronic Reading Room at *http://www.nrc.gov/reading-rm/adams.html.* From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC's PDR reference staff at 1–800–397–4209, 301–415–4737, or by e-mail to *PDR.Resource@nrc.gov.*

Federal rulemaking Web site: Public comments and supporting materials related to this proposed rule can be found at *http://www.regulations.gov* by searching on Docket ID NRC–2008–0619.

Extension Request

On October 3, 2010, Stephen Miller representing The National Organization of Test, Research, and Training Reactors, requested an extension of the public comment period until January 31, 2011 (ADAMS Accession No. ML102790180). The Commission has granted your request. Therefore, the NRC is reopening the public comment period until January 31, 2011.

Dated at Rockville, Maryland, this 14th day of December 2010.

For the Nuclear Regulatory Commission.

Annette L. Vietti-Cook,

Secretary of the Commission.

[FR Doc. 2010–31852 Filed 12–17–10; 8:45 am]

BILLING CODE 7590–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 29

[Docket No. SW022; Special Conditions No. 29–022A–SC]

Special Conditions: Eurocopter France (ECF) Model EC225LP Helicopter, Installation of a Search and Rescue (SAR) Automatic Flight Control System (AFCS)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This document proposes amended special conditions for the ECF model EC225LP helicopter. This helicopter, as modified by ECF, will have novel or unusual design features associated with installing an optional SAR AFCS. Special conditions No. 29–022–SC, published in the **Federal Register** on November 6, 2008 (73 FR 65968), addressed these issues. The proposed amendment revises the original final special conditions to address comments and to clarify the intent of some requirements. The applicable airworthiness standards do not contain adequate or appropriate safety standards for these design features. These special conditions contain the additional safety standards the Administrator considers necessary to show a level of safety equivalent to that established by the existing airworthiness standards.

DATES: We must receive your comments by January 19, 2011.

ADDRESSES: You must mail two copies of your comments to: Federal Aviation Administration, Rotorcraft Directorate, Attn: Special Conditions Docket (ASW–111), Docket No. SW022, 2601 Meacham Blvd., Fort Worth, Texas 76137. You may deliver two copies to the Rotorcraft Directorate at the above address. You must mark your comments: Docket No. SW022. You can inspect comments in the Docket on weekdays, except Federal holidays, between 8:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: FAA, Aircraft Certification Service, Rotorcraft Directorate, Regulations and Policy Group (ASW–111), Attn: Stephen Barbini, 2601 Meacham Blvd., Fort Worth, Texas 76137; telephone (817) 222–5196; facsimile (817) 222–5961.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will file in the special conditions docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning these special conditions. You can inspect the docket before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this document between 8:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change these special conditions based on the comments we receive.

If you want the FAA to acknowledge receipt of your mailed comments on this proposal, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

Background

On March 27, 2006, ECF applied for a change to Type Certificate (TC) No. H4EU to install an optional SAR AFCS in the model EC225LP helicopter. The model EC225LP is a transport category helicopter certified to Category A requirements when configured for more than nine passengers and Category A or B requirements when configured for nine or less passengers. This helicopter is also certified for instrument flight under the requirements of Appendix B of 14 CFR part 29, Amendment 29–47.

The use of dedicated AFCS upper modes, in which a fully coupled autopilot provides operational SAR profiles, is needed for SAR operations conducted over water in offshore areas clear of obstructions. The SAR modes enable the helicopter pilot to fly fully coupled maneuvers, to include predefined search patterns during cruise flight, and to transition from cruise flight to a stabilized hover and departure (transition from hover to cruise flight). The SAR AFCS also includes an auxiliary crew control that allows another crewmember (such as a hoist operator) to have limited authority to control the helicopter's longitudinal and lateral position during hover operations.

Flight operations conducted over water at night may have an extremely limited visual horizon with little visual reference to the surface even when conducted under Visual Meteorological Conditions (VMC). Consequently, the certification requirements for SAR modes must meet Appendix B to 14 CFR part 29. While Appendix B to 14 CFR part 29 prescribes airworthiness criteria for instrument flight, it does not consider operations below instrument flight minimum speed (V_{MINI}), whereas the SAR modes allow for coupled operations at low speed, all-azimuth flight to zero airspeed (hover).

Since SAR operations have traditionally been a public use mission, the use of SAR modes in civil operations requires special airworthiness standards (special conditions) to ensure that a level of safety consistent with Category A and Instrument Flight Rule (IFR) certification is maintained. In this regard, 14 CFR part 29 lacks adequate airworthiness standards for AFCS SAR mode certification to include flight characteristics, performance, and installed equipment and systems.

Type Certification Basis

Under 14 CFR 21.101, ECF must show the EC225LP, as changed, continues to meet the applicable provisions of the rules incorporated by reference in TC No. H4EU or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the TC are commonly referred to as the "original type certification basis." The regulations incorporated by reference in H4EU are as follows:

a. 14 CFR 21.29.

b. 14 CFR part 29 Amendments 29–1 to 29–25; plus § 29.785 through Amendment 29–28; plus §§ 29.963, 29.967, 29.973, 29.975 through Amendment 29–34; plus §§ 29.25, 29.865 through Amendment 29–42; plus §§ 29.1, 29.2, 29.49, 29.51, 29.53, 29.55, 29.59, 29.60, 29.61, 29.62, 29.64, 29.65, 29.67, 29.73, 29.75, 29.77, 29.79, 29.81, 29.83, 29.85, 29.87, 29.307, 29.337, 29.351, 29.361, 29.391, 29.395, 29.397, 29.401, 29.403, 29.413, 29.427, 29.501, 29.519, 29.547, 29.549, 29.561(c), 29.561(d), 29.563, 29.602, 29.610, 29.613, 29.621, 29.625, 29.629, 29.631, 29.663, 29.674, 29.727, 29.755, 29.775, 29.783, 29.787, 29.803, 29.805, 29.807, 29.809, 29.811, 29.855, 29.861, 29.901, 29.903, 29.908, 29.917, 29.923, 29.927, 29.954, 29.961, 29.965, 29.969, 29.971, 29.991, 29.997, 29.999, 29.1001, 29.1011, 29.1019, 29.1027, 29.1041, 29.1043, 29.1045, 29.1047, 29.1093, 29.1125, 29.1141, 29.1143, 29.1163, 29.1181, 29.1189, 29.1193, 29.1305, 29.1309, 29.1323, 29.1329, 29.1337, 29.1351, 29.1359, 29.1415, 29.1521, 29.1549, 29.1557, 29.1587, A29, B29, C29, D29 through Amendment 29–47; plus 29.1317 through Amendment 29–49.

c. 14 CFR part 36 Amendment 21 (ICAO Annex 16, Volume 1, Chapter 8).

d. Equivalent Safety Findings:

(1) TC2899RD–R–F–01; § 29.1303(j), V_{ne} aural warning.

(2) TC2899RD–R–F–02; § 29.1545(b)(4), Airspeed indicators markings.

(3) TC2899RD–R–F–03; § 29.1549(b), Powerplant instruments markings.

(4) TC2899RD–R–F–05; §§ 29.173, 29,175, Static Longitudinal Stability.

(5) TC2899RD–R–F–06; 14 CFR part 29, Appendix B, paragraph IV; IFR

Static Longitudinal Stability–Airspeed stability.

(6) TC2899RD–R–A–01; § 29.807(d)(2), Ditching emergency exits for passengers.

(7) TC2899RD–R–P–01; § 29.923(a)(2), Rotor drive system and control mechanism tests.

In addition to the applicable airworthiness standards and special conditions, the ECF model EC225LP must comply with the noise certification requirements of 14 CFR part 36.

Regulatory Basis for Special Conditions

If the Administrator finds the applicable airworthiness standards (that is, 14 CFR part 29) do not contain adequate or appropriate safety standards for the ECF model EC225LP helicopter because of a novel or unusual design feature, special conditions are prescribed under § 21.16.

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

Special conditions are initially applicable to the model for which they are issued. Should the TC for that model be amended later to include any other model that incorporates the same novel or unusual design feature, or should any other model already included on the same TC be modified to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model.

Novel or Unusual Design Features

The ECF model EC225LP helicopter will incorporate the following novel or unusual design features:

The SAR system is composed of a navigation computer with SAR modes, an AFCS that provides coupled SAR functions, hoist operator control, a hover speed reference system, and two radio altimeters. The AFCS coupled SAR functions include:

(a) Hover hold at selected height above the surface.

(b) Ground speed hold.

(c) Transition down and hover to a waypoint under guidance from the navigation computer.

(d) SAR pattern, transition down, and hover near a target over which the helicopter has flown.

(e) Transition up, climb, and capture a cruise height.

(f) Capture and track SAR search patterns generated by the navigation computer.

(g) Monitor the preselected hover height with automatic increase in collective if the aircraft height drops below the safe minimum height.

These SAR modes are intended to be used over large bodies of water in areas clear of obstructions. Further, use of the modes that transition down from cruise to hover will include operation at airspeeds below V_{MINI}.

The SAR system only entails navigation, flight control, and coupled AFCS operation of the helicopter. The system does not include the extra equipment that may be required for over water flight or external loads to meet other operational requirements.

Discussion of Comments

Final special conditions; request for comments, No. 29–022–SC for ECF model EC225LP helicopters was published in the **Federal Register** on November 6, 2008 (73 FR 65968), with the comment period closing December 22, 2008. One commenter, AgustaWestland (AW), responded to our request for comments and submitted various comments and recommendations.

Referring to subparagraph (a)(3), which deals with a Go Around mode, AW states that they do not agree with a requirement for a function that possibly performs an automatic ascent in case of a detected failure. They state that this could be even an unsafe maneuver during hover while operating the winch. They point out that EASA states in CRI B–03 "The automatic collective control should provide a high integrity function that flies up whenever a SAR mode is coupled and the aircraft is below the minimum safety height, if needed to satisfy the failure demonstrations in § G, 2. The minimum safety height must not rely on crew setting only." They state there are more generic requirements that address the safety aspects induced by SAR operation at low height.

We disagree with the commenter's interpretation of the requirement. The intent of the requirement is for the go-around mode to be manually activated by the pilot in order to avoid a hazardous situation. This action would interrupt any coupled SAR mode and automatically command the helicopter to ascend and accelerate to the instrument flight rules (IFR) envelope. The intent is that the go-around mode be provided in any low-speed environment, such as during hover operations or while transitioning to a hover. The requirement of subparagraph (a)(3) differs from the requirement of automatic transition of the helicopter to the instrument flight envelope in subparagraph (a)(2). Subparagraph (a)(2) requires an automatic transition to the IFR flight envelope when a departure from hover mode is activated as part of the normal SAR mode sequencing. Subparagraph (a)(3) requires a means for the pilot to interrupt the normal SAR modes sequencing, commanding the AFCS to automatically transition the helicopter to the IFR flight envelope. Subparagraph (a)(3) is not intended to require automatic initiation of a go-around following a single failure of the AFCS. Failure modes are addressed in subparagraph (a)(9). While we disagree with AW's interpretation of the requirement, we recognize the wording may be unclear. We have therefore made a change to subparagraph (a)(3) to reflect that the required go-around mode is pilot-selectable and the purpose is to interrupt any other coupled mode. We have also clarified in subparagraph (a)(2) that this requirement pertains to normal SAR mode sequencing.

With respect to subparagraphs (b)(3) and (b)(4) of the SAR Mode System Architecture, the commenter asks if both the sensor variables and the AFCS mode references should be presented to the crew.

We concur with these recommendations, which is consistent with the requirement of subparagraph (b)(2). Therefore, subparagraphs (b)(3) and (b)(4) are revised to additionally require the actual groundspeed and actual heading to be displayed to the pilot.

For subparagraph (b)(5) of the special conditions, AW asks why the wind indication should be available only when the automatic modes are engaged, or transitioning from one mode to another. They state that the wind information should be made available, independently from any AFCS engaged mode, at the beginning of the transition from cruise to hover.

We disagree. Subparagraph (b)(5) requires wind speed and wind direction only when SAR automatic piloting modes are engaged or transitioning from one SAR mode to another. This requirement is intended to be a minimum requirement to ensure wind speed and direction is available for operations near the surface when coupled to the SAR modes. Thus, the requirement is unchanged.

In reference to subparagraph (c)(3), the commenter states that AC 29–1329.d.(5) explains how the deviations caused by a malfunction should be evaluated during an instrument landing system (ILS) approach. The commenter believes that malfunction testing for SAR modes should be evaluated in the same manner since the SAR-mandatory 15-foot buffer above the surface is equivalent to the buffer provided in ILS approaches. Likewise, penetration of this 15-foot buffer does not guarantee a catastrophic event, but should be treated as a hazardous event as long as impact

with the surface is avoided. Therefore, the commenter requests subparagraph (c)(3) be modified to require failures not shown to be extremely remote (a safety objective for hazardous failures) must not result in a loss of height that is greater than half of the MUH with a minimum of 15 feet above the surface.

We disagree with the commenter. The intent of the requirement to have a 15-foot minimum height above the surface, following an AFCS failure, was to provide an acceptable safety margin. The requirement for such a margin stems from the likelihood of encountering hazards such as inconsistent wave heights, floating debris, and other unforeseen obstacles that would create a catastrophic condition if the helicopter penetrated the 15-foot buffer. Therefore, we consider SAR AFCS failure conditions that result in recovery closer than 15 feet above the surface to be catastrophic. We have made non-substantive changes to improve the intent of the requirement.

Additional wording was added to subparagraph (f)(1)(i)(C) that provides linkage to the MUH determination made in subparagraph (c)(3). This change was made for clarification purposes only and is not intended to increase or alleviate the current requirements. We have also defined MUH in subparagraph (c)(3). We do not intend for the SAR AFCS to decouple automatically if the helicopter descends below MUH.

The commenter states that in subparagraphs (g)(4) and (g)(5), the in-flight demonstration of failures should be required only for failures that cannot be shown to be extremely remote. AW states that this requirement would provide some alleviation for the malfunction flight validation. They state that this should be allowed because SAR missions are normally conducted by trained pilots and they should be able to complete the mission even after some malfunction has occurred in flight. Because of the considerable crew workload involved in a SAR mission, the commenter believes that it is important to permit coupling of the Flight Director modes even after a malfunction affecting the AFCS. The commenter believes that the reduction in pilot workload provided by a coupled Flight Director "would considerably reduce the risk of inadvertent pilot operation, a benefit that should be considered in comparison to the probability of "an extremely remote" failure."

We do not agree with commenter. The existing requirement does not require flight testing for failure modes not shown to be extremely improbable; rather, subparagraphs (g)(4) and (g)(5) permit ground or flight testing to demonstrate compliance for failure modes not shown to be extremely improbable. This is consistent with the methodology prescribed in the advisory circular guidance for AFCS failure modes testing.

We made some other minor changes to improve and clarify wording, with no substantive increase or decrease to the current requirements.

In subparagraph (a)(1) we added "(within the maximum demonstrated wind envelope)" to highlight that safe and controlled flight is required throughout the wind envelope. Adding this phrase does not change our intent of SAR envelope definition.

We added, "Pilot-commanded descent below the safe minimum height is acceptable provided the alerting requirements in (b)(7)(i) are sufficient to alert the pilot of this encroachment" to subparagraph (a)(4). This clarifies that the SAR AFCS is permitted to descend below the stored or pilot-selected safe minimum height only when commanded by the pilot, provided the alerting requirements are sufficient to alert the pilot of the descent.

We modified subparagraph (b)(6) to indicate that the AFCS system must monitor for all deviations and failures, not just those that create a hazard, which was our original intent. The alerting requirement does not change; a pilot alert is still required for all deviations and all failures that require pilot-corrective action.

Clarifications were made to subparagraph (b)(7) by adding subparagraph (iii) for normal transitions. We have also denoted the remainder of the subparagraph as a note. This makes the requirement more specific.

We clarified in subparagraph (b)(8) that the hoist operator control has limited authority.

Subparagraph (b)(8)(iii) of the current special condition contains two requirements. We have separated them, so subparagraph (b)(8)(iii) only contains the hoist operator control noninterference requirement and subparagraph (b)(8)(iv) contains the pilot override criteria for the hoist control.

We modified subparagraph (d)(2) by deleting "danger of" from the first sentence. This change does not alter the intent of this requirement.

Subparagraph (d)(3)(iii)(B) was modified to incorporate more general terms to clarify the requirement.

We have changed subparagraph (b)(10) to state a functional hazard assessment must address all failure conditions, not just those that represent catastrophic failure conditions. This change makes this SAR special condition requirement consistent with the requirements of § 29.1309.

We have changed the second paragraph in subparagraph (e)(1)(ii) to a note. This "note" provides information only and is better characterized as a "note." The original wording was always intended to stand as a note, but it was not previously marked as one.

We removed the parenthetical from subparagraph (g)(4) as it is not needed. The intent of this requirement has not changed.

Finally, we clarified subparagraphs (g)(4)(i) and (g)(4)(ii), by changing "transition," "hover," and "cruise" to "transition modes," "hover modes," and "cruise modes," respectively. This general wording allows an applicant more flexibility in the use of SAR mode terminology.

Applicability

These special conditions apply to the ECF model EC225LP helicopters. Should ECF apply at a later date for a change to the TC to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well under the provisions of § 21.101(d).

Conclusion

This action affects only certain novel or unusual design features on one model of helicopter. It is not a rule of general applicability.

List of Subjects in 14 CFR Part 29

Aircraft, Aviation safety.

The authority citation for these special conditions is as follows:

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

The Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes replacing Special Conditions No. 29–022–SC, Docket No. SW022 (73 FR 65968, November 6, 2008) with the following special conditions as part of the type certification basis for Eurocopter France model EC225LP helicopters when the optional Search and Rescue (SAR) Automatic Flight Control System (AFCS) is installed:

In addition to the part 29 certification requirements for Category A and helicopter instrument flight (Appendix B), the following additional requirements must be met for certification of the SAR AFCS:

(a) *SAR Flight Modes.* The coupled SAR flight modes must provide:

(1) Safe and controlled flight in three axes (lateral and longitudinal position/speed and height/vertical speed) at all airspeeds from instrument flight minimum speed (V_{MINI}) to a hover (within the maximum demonstrated wind envelope).

(2) Automatic transition to the helicopter instrument flight (Appendix B) envelope as part of the normal SAR mode sequencing.

(3) A pilot-selectable Go-Around mode that safely interrupts any other coupled mode and automatically transitions to the helicopter instrument flight (Appendix B) envelope.

(4) A means to prevent unintended flight below a safe minimum height. Pilot-commanded descent below the safe minimum height is acceptable provided the alerting requirements in (b)(7)(i) are sufficient to alert the pilot of this descent below safe minimum height.

(b) *SAR Mode System Architecture.* To support the integrity of the SAR modes, the following system architecture is required:

(1) A system for limiting the engine power demanded by the AFCS when any of the automatic piloting modes are engaged, so FADEC power limitations, such as torque and temperature, are not exceeded.

(2) A system providing the aircraft height above the surface and final pilot-selected height at a location on the instrument panel in a position acceptable to the FAA that will make it plainly visible to and usable by any pilot at their station.

(3) A system providing the aircraft heading and the pilot-selected heading at a location on the instrument panel in a position acceptable to the FAA that will make it plainly visible to and usable by any pilot at their station.

(4) A system providing the aircraft longitudinal and lateral ground speeds and the pilot-selected longitudinal and lateral ground speeds when used by the AFCS in the flight envelope where airspeed indications become unreliable. This information must be presented at a location on the instrument panel in a position acceptable to the FAA that is plainly visible to and usable by any pilot at their station.

(5) A system providing wind speed and wind direction when automatic piloting modes are engaged or transitioning from one mode to another.

(6) A system that monitors for flight guidance deviations and failures with an appropriate alerting function that enables the flight crew to take appropriate corrective action.

(7) An alerting system must provide visual or aural alerts, or both, to the flight crew under any of the following conditions:

(i) When the stored or pilot-selected safe minimum height is reached.

(ii) When a SAR mode system malfunction occurs.

(iii) When the AFCS changes modes automatically from one SAR mode to another.

Note: For normal transitions from one SAR mode to another, a single visual or aural alert may suffice. For a SAR mode malfunction or a mode having a time-critical component, the flight crew alerting system must activate early enough to allow the flight crew to take timely and appropriate action. The alerting system means must be designed to alert the flight crew in order to minimize crew errors that could create an additional hazard.

(8) The SAR system hoist operator control is considered a flight control with limited authority and must comply with the following:

(i) The hoist operator control must be designed and located to provide for convenient operation and to prevent confusion and inadvertent operation.

(ii) The helicopter must be safely controllable by the hoist operator control throughout the range of that control.

(iii) The hoist operator control may not interfere with the safe operation of the helicopter.

(iv) Pilot and copilot flight controls must be able to smoothly override the control authority of the hoist operator control, without exceptional piloting skill, alertness, or strength, and without the danger of exceeding any other limitation because of the override.

(9) The reliability of the AFCS must be related to the effects of its failure. The occurrence of any failure condition that would prevent continued safe flight and landing must be extremely improbable. For any failure condition of the AFCS which is not shown to be extremely improbable:

(i) The helicopter must be safely controllable and capable of continued safe flight without exceptional piloting skill, alertness, or strength. Additional unrelated probable failures affecting the control system must be evaluated.

(ii) The AFCS must be designed so that it cannot create a hazardous deviation in the flight path or produce hazardous loads on the helicopter during normal operation or in the event of a malfunction or failure, assuming corrective action begins within an appropriate period of time. Where multiple systems are installed, subsequent malfunction conditions must be evaluated in sequence unless their occurrence is shown to be improbable.

(10) A functional hazard assessment (FHA) and a system safety assessment must be provided to address the failure conditions associated with SAR operations. For SAR catastrophic failure conditions, changes may be required to the following:

(i) System architecture.

(ii) Software and complex electronic hardware design assurance levels.

(iii) HIRF test levels.

(iv) Instructions for continued airworthiness.

The assessments must consider all the systems required for SAR operations to include the AFCS, all associated AFCS sensors (for example, radio altimeter), and primary flight displays. Electrical and electronic systems with SAR catastrophic failure conditions (for example, AFCS) must comply with the § 29.1317(a)(4) High Intensity Radiated Field (HIRF) requirements.

(c) *SAR Mode Performance Requirements.*

(1) The SAR modes must be demonstrated in the requested flight envelope for the following minimum sea-state and wind conditions:

(i) Sea-State: Wave height of 2.5 meters (8.2 feet), considering both short and long swells.

(ii) Wind: 25 knots headwind; 17 knots for all other azimuths.

(2) The selected hover height and hover velocity must be captured (to include the transition from one captured mode to another captured mode) accurately and smoothly and not exhibit any significant overshoot or oscillation.

(3) For any single failure or any combination of failures of the AFCS that is not shown to be extremely improbable, the recovery must not result in a loss of height greater than half of the minimum use height (MUH) with a minimum margin of 15 feet above the surface. MUH is the minimum height at which any SAR AFCS mode can be engaged.

(4) The SAR mode system must be usable up to the maximum certified gross weight of the aircraft or to the lower of the following weights:

(i) Maximum emergency flotation weight.

(ii) Maximum hover Out-of-Ground Effect (OGE) weight.

(iii) Maximum demonstrated weight.

(d) *Flight Characteristics.*

(1) The basic aircraft must meet all the part 29 airworthiness criteria for helicopter instrument flight (Appendix B).

(2) For SAR mode coupled flight below V_{MINI}, at the maximum demonstrated winds, the helicopter must be able to maintain any required flight condition and make a smooth transition from any flight condition to any other flight condition without

requiring exceptional piloting skill, alertness, or strength, and without exceeding the limit load factor. This requirement also includes aircraft control through the hoist operator's control.

(3) For SAR modes at airspeeds below V_{MINI}, the following requirements of Appendix B to part 29 must be met and will be used as an extension to the IFR certification envelope of the basic aircraft:

(i) Static Longitudinal Stability: The requirements of paragraph IV of Appendix B are not applicable.

(ii) Static Lateral-Directional Stability: The requirements of paragraph V of Appendix B are not applicable.

(iii) Dynamic Stability: The requirements of paragraph VI of Appendix B are replaced with the following two paragraphs:

(A) Any oscillation must be damped and any aperiodic response must not double in amplitude in less than 10 seconds. This requirement must also be met with degraded upper mode(s) of the AFCS. An "upper mode" is a mode that utilizes a fully coupled autopilot to provide an operational SAR profile.

(B) After any upset, the AFCS must return the aircraft to the last commanded position within 10 seconds or less.

(4) With any of the upper mode(s) of the AFCS engaged, the pilot must be able to manually recover the aircraft and transition to the normal (Appendix B) IFR flight profile envelope without exceptional skill, alertness, or strength.

(e) *One-Engine Inoperative (OEI) Performance Information.*

(1) The following performance information must be provided in the Rotorcraft Flight Manual Supplement (RFMS):

(i) OEI performance information and emergency procedures, providing the maximum weight that will provide a minimum clearance of 15 feet above the surface, following failure of the critical engine in a hover. The maximum weight must be presented as a function of the hover height for the temperature and pressure altitude range requested for certification. The effects of wind must be reflected in the hover performance information.

(ii) Hover OGE performance with the critical engine inoperative for OEI continuous and time-limited power ratings for those weights, altitudes, and temperatures for which certification is requested.

Note: These OEI performance requirements do not replace performance requirements that may be needed to comply with the airworthiness or operational standards (§ 29.865 or 14 CFR part 133) for external loads or human external cargo.

(f) *RFMS.*

(1) The RFMS must contain, at a minimum:

(i) Limitations necessary for safe operation of the SAR system to include:

(A) Minimum crew requirements.

(B) Maximum SAR weight.

(C) Engagement criteria for each of the SAR modes to include MUH (as determined in subparagraph (c)(3)).

(ii) Normal and emergency procedures for operation of the SAR system (to include operation of the hoist operator control), with AFCS failure modes, AFCS degraded modes, and engine failures.

(iii) Performance information:

(A) OEI performance and height-loss.

(B) Hover OGE performance information, utilizing OEI continuous and time-limited power ratings.

(C) The maximum wind envelope demonstrated in flight test.

(g) *Flight Demonstration.*

(1) Before approval of the SAR system, an acceptable flight demonstration of all the coupled SAR modes is required.

(2) The AFCS must provide fail-safe operations during coupled maneuvers. The demonstration of fail-safe operations must include a pilot workload assessment associated with manually flying the aircraft to an altitude greater than 200 feet above the surface and an airspeed of at least the best rate of climb airspeed (V_y).

(3) For any failure condition of the SAR system not shown to be extremely improbable, the pilot must be able to make a smooth transition from one flight mode to another without exceptional piloting skill, alertness, or strength.

(4) Failure conditions that are not shown to be extremely improbable must be demonstrated by analysis, ground testing, or flight testing. For failures demonstrated in flight, the following normal pilot recovery times are acceptable:

(i) Transition modes (Cruise-to-Hover/Hover-to-Cruise) and Hover modes: Normal pilot recognition plus 1 second.

(ii) Cruise modes: Normal pilot recognition plus 3 seconds.

(5) All AFCS malfunctions must include evaluation at the low-speed and high-power flight conditions typical of SAR operations. Additionally, AFCS hard-over, slow-over, and oscillatory malfunctions, particularly in yaw, require evaluation. AFCS malfunction testing must include a single or a combination of failures (for example, erroneous data from and loss of the radio altimeter, attitude, heading, and altitude sensors) which are not shown to be extremely improbable.

(6) The flight demonstration must include the following environmental conditions:

(i) Swell into wind.

(ii) Swell and wind from different directions.

(iii) Cross swell.

(iv) Swell of different lengths (short and long swell).

Issued in Fort Worth, Texas, on December 14, 2010.

Bruce E. Cain,

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2010–1199; Directorate Identifier 2010–NM–225–AD]

RIN 2120–AA64

Airworthiness Directives; The Boeing Company Model 737–600, –700, –700C, –800, and –900 Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede an existing airworthiness directive (AD) that applies to the products listed above. The existing AD currently requires replacement of the power control relays in the P91 and P92 power distribution panels for the fuel boost and override pumps with new, improved relays having a ground fault interrupter (GFI) feature, or installation and maintenance of universal fault interrupters (UFIs) using a certain supplemental type certificate. Since we issued that AD, we have determined that we need to clarify which relays may be replaced by installation of UFIs. This proposed AD would continue to require the actions of the existing AD and also specify which relays may be replaced by GFIs or UFIs. We are proposing this AD to prevent pump housing burn-through due to electrical arcing, which could create a potential ignition source inside a fuel tank. This condition, in combination with flammable fuel vapors, could result in a fuel tank explosion and consequent loss of the airplane.

DATES: We must receive comments on this proposed AD by February 3, 2011.