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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 25**

**[Docket No. FAA-2023-0068; Special Conditions No. 25-821-SC]**

**Special Conditions: B/E Aerospace Ltd., MHI RJ Aviation ULC Model CL-600-2B19 Airplane; Installation of a Therapeutic Oxygen System for Medical Use**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions; request for comments.

**SUMMARY:** These special conditions are issued for the MHI RJ Aviation ULC Model CL-600-2B19 airplane. This airplane, as modified by B/E Aerospace Ltd. (B/E Aerospace), will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport-category airplanes. This design feature is an installation of a therapeutic oxygen system for medical use.. 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:** This action is effective on B/E Aerospace Ltd. on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Send comments on or before [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** Send comments identified by Docket No. FAA-2023-0068 using any of the following methods:

- *Federal eRegulations Portal:* Go to https://www.regulations.gov/ and follow the online instructions for sending your comments electronically.

- *Mail:* Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE, Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202-493-2251.

*Docket:* Background documents or comments received may be read at https://www.regulations.gov/ at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Robert Hettman, Mechanical Systems, AIR-623, Technical Policy Branch, Policy and Standards Division, Aircraft Certification Service, Federal Aviation Administration, 2200 South 216th Street, Des Moines, Washington 98198; telephone and fax 206-231-3171; e-mail robert.hettman@faa.gov.

**SUPPLEMENTARY INFORMATION:** The substance of these special conditions has been published in the Federal Register for public comment in several prior instances with no substantive comments received. Therefore, the FAA finds, pursuant to § 11.38(b), that new comments are unlikely, and notice and comment prior to this publication are unnecessary.

**Comments Invited**

The FAA invites 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.

The FAA will consider all comments received by the closing date for comments, and will consider comments filed late if it is possible to do so without incurring delay. The FAA may change these special conditions based on the comments received.

**Privacy**

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in title 14, Code of Federal Regulations (14 CFR) 11.35, the FAA will post all comments received without change to https://www.regulations.gov/, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about these special conditions.

**Confidential Business Information**

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 these special conditions contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to these special conditions, 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 the indicated comments will not be placed in the public docket of these special conditions. Send submissions containing CBI to the individual listed in the For Further Information Contact section above. Comments the FAA receives, which are not specifically designated as CBI, will be placed in the public docket for these special conditions.

**Background**

On November 17, 2022, B/E Aerospace applied for a supplemental type certificate for the modification of the oxygen distribution system on the MHI RJ Aviation ULC Model CL-600-2B19 airplane (type certificate previously held by Bombardier, Inc). This airplane, which is currently approved under Type Certificate A21EA-1, is a twin-engine transport category airplane with a maximum takeoff weight of 47,450 pounds. The Model CL-600-2B19 (Challenger 850 series) airplane has a seating capacity of 19 passengers.

**Type Certification Basis**

Under the provisions of title 14, Code of Federal Regulations (14 CFR) 21.101, B/E Aerospace must show that the MHI RJ Aviation ULC Model CL-600-2B19 airplane, as changed, continues to meet the applicable provisions of the regulations listed in Type Certificate No. A21EA-1 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 25) do not contain adequate or appropriate safety standards for the MHI RJ Aviation ULC Model CL-600-2B19 airplane 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 MHI RJ Aviation ULC Model CL-600-2B19 airplane must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR 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 MHI RJ Aviation ULC Model CL-600-2B19 airplane will incorporate the following novel or unusual design feature:

A modification of the oxygen-distribution system that affects how the common source of oxygen supply on board is shared between the flightcrew and passengers to provide supplemental and therapeutic oxygen.

**Discussion**

No specific regulations address the design and installation of required passenger oxygen systems that share a supply source with an optional oxygen system used specifically for therapeutic applications. Therapeutic oxygen systems have been previously certified, and were generally considered an extension of the passenger oxygen system for the purpose of defining the applicable regulations. As a result, existing requirements, such as §§ 25.1309, 25.1441(b) and (c), 25.1451, and 25.1453, in the MHI RJ Aviation ULC Model CL-600-2B19 airplanes' certification basis applicable to this STC project, provide some design standards appropriate for oxygen system installations. In addition, § 25.1445 includes standards for oxygen distribution systems when oxygen is supplied to flightcrew and passengers. If a common source of supply is used, § 25.1445(a)(2) requires a means to separately reserve the minimum supply required by the flightcrew.

Section 25.1445 is intended to protect the flightcrew by ensuring that an adequate supply of oxygen is available to complete a descent and landing following a loss of cabin pressure. When the regulation was written, the only passenger oxygen system designs were supplemental oxygen systems intended to protect passengers from hypoxia in the event of a decompression. Existing passenger oxygen systems did not include design

features that would allow the flightcrew to control oxygen to passengers during flight. There are no similar requirements in § 25.1445 when oxygen is supplied from the same source to passengers for use during a decompression, and for discretionary or first-aid use any time during the flight. In the design, the passenger and therapeutic oxygen systems use the same source of oxygen. These special conditions contain additional design requirements for the equipment involved in this dual therapeutic oxygen plus gaseous oxygen installation.

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.

**Applicability**

As discussed above, these special conditions are applicable to the MHI RJ Aviation ULC Model CL-600-2B19 airplane. Should B/E Aerospace apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A21EA-1 to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well.

**Conclusion**

This action affects only a certain novel or unusual design feature on one model of airplane. 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 airplane.

**List of Subjects in 14 CFR Part 25**

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, and 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 MHI RJ Aviation ULC Model CL-600-2B19 airplanes, as modified by B/E Aerospace Ltd.

The distribution system for the passenger therapeutic oxygen system must be designed and installed to meet requirements as follows:

When oxygen is supplied to passengers for both supplemental and therapeutic purposes, the distribution system must be designed for either—

(1) A source of supplemental oxygen for protection following a loss of cabin pressure, and a separate source for therapeutic purposes; or

(2) A common source of supply with means to separately reserve the minimum supply required by the passengers for supplemental use following a loss of cabin pressure.

Issued in Kansas City, Missouri on May 18, 2023.

Patrick R. Mullen,
Manager, Technical Policy Branch,
Policy and Standards Division,
Aircraft Certification Service.
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