



Federal Aviation Administration

Memorandum

Date:

To: Lawrence Fields, Acting Executive Director, Flight Standards Service, AFX-1

From: Laura Megan-Posch, Assistant Chief Counsel for Regulations, AGC-200

Subject: AGC Response to Request for Legal Interpretation regarding Long-Range
Communication system (LRCS) for up to 180-minute Extended Operations
(ETOPS)

This legal interpretation has been drafted in response to your May 16, 2022, request for clarification regarding § 121.99 of Title 14 of the Code of Federal Regulations (14 CFR). You asked if: (1) § 121.99(a), (b), and (c) require two voice communication systems for up to 180-minute ETOPS where voice communication facilities are available and (2) if § 121.99 requires simultaneous voice communications between each airplane and the appropriate dispatch office, and between each airplane and the appropriate air traffic control (ATC) unit. The answer to your first question is yes, and the answer to your second question is no, as discussed below.

14 CFR § 121.99(a) requires that a certificate holder conducting flag or domestic operations make an approved two-way communication system available over the entire route. This system may be direct links or via another approved communication link that will provide rapid and reliable communications under normal operating conditions between the airplane and dispatch office and between the airplane and appropriate air traffic control unit.

14 CFR § 121.99(b) states that “except in an emergency, for all flag and domestic kinds of operations, the communications systems between each airplane and the dispatch office must be independent of any system operated by the United States.” The requirement for communications systems independent of any system operated by the United States, such as air traffic control, indicates that two communication systems must be present.

14 CFR § 121.99(c) states that each certificate holder conducting flag operations must provide voice communications for ETOPS where voice communication facilities are available. In determining whether facilities are available, the certificate holder must consider potential routes and altitudes needed for diversion to ETOPS Alternate Airports. Where facilities are not available or are of such poor quality that voice communication is not possible, another communication system must be substituted.

While § 121.99(a) does not necessarily require two forms of voice communication for non-ETOPS, § 121.99(b) indicates that the certificate holder must have two separate systems for communications between the aircraft and dispatch and the aircraft and ATC, and § 121.99(c) requires voice communications between the aircraft and dispatch and the aircraft and ATC, no matter the duration, for ETOPS where voice communication facilities are available. Accordingly, read together, § 121.99(b) and (c) require two voice communication systems for up to 180-minute ETOPS where voice communication facilities are available. This determination is supported by the regulatory history, as indicated in the paragraphs that follow.

Paragraph 121.99(a) provides the baseline requirement for all domestic and flag certificate holders operating under part 121. The FAA noted in its proposed rulemaking that the equipment and communication performance requirements for ETOPS should be separate and distinct from the baseline communication requirement for non-ETOPS part 121 operations.¹

In 2007, § 121.99(a) removed the requirement that a certificate holder have a two-way radio communication available and instead changed the requirement to “two-way communication system.” The purpose of this amendment was to make the regulation “more flexible for modern means of communication.”² This added flexibility applies to non-ETOPS. The removal of the “radio” requirement from § 121.99(a) does not impact ETOPS, as set forth in § 121.99(c). 14 CFR § 121.99(c) expressly states that voice communications must be used unless unavailable, at which point another method must be substituted.

That requirement dates back to 2003, when the FAA proposed that a certificate holder would have to provide for voice communication between the crew and air traffic services and the crew and the certificate holder wherever and whenever it is available.³ In areas where voice communication is not possible, the certificate holder would have to provide a non-voice communication system, such as High Frequency (HF) data link, to ensure communication capability.

In Advisory Circular 120-42B, the FAA reiterated that the certificate holder must use voice communications services and facilities for communication with air traffic control and the dispatch office. Specifically, “[c]ertificate holders operating ETOPS routes must use the most reliable voice-based communications technology available for communications between the flightcrew and air traffic services, and the flightcrew and the certificate holder per § 121.99.”⁴

Subsequently, the FAA issued the Duncan Interpretation⁵ in 2011 which supports this stance. In Question 1 of this interpretation, the FAA responded that text messaging technology can be used instead of voice when non-ETOPS are conducted. In response to Question 3, the FAA specifically stated that only when voice communication is not possible or is of poor quality, a text messaging technology may be used in ETOPS. The Duncan interpretation is clear that the use of non-voice technology is a substitution when voice is unavailable, and not an alternative form of communication in place of voice communications in ETOPS from the outset. Non-voice

¹ *Id.* at 64760

² 67 Fed. Reg. 77326, 77334 (Dec. 17, 2002).

³ 68 Fed. Reg. 64730, 64759-64760 (November 14, 2003)

⁴ Advisory Circular 120-42B, 403(c)(7), page 42, June 13, 2008.

⁵ Legal Interpretation from Rebecca MacPherson to John Duncan, December 6, 2011.

technology must be available for use when voice communication is an impossibility while in ETOPS. This applies to ETOPS generally, not only those over 180 minutes.

Both satellite and high frequency voice are acceptable forms of voice communications for ETOPS up to 180 minutes. When ETOPS are limited to under 180 minutes, the air carrier may elect to use high frequency voice to communicate with air traffic control and dispatch. Once ETOPS exceed 180 minutes, § 121.99(d) requires the second voice system to be capable of immediate satellite-based voice communications of landline-telephone fidelity, unless voice communications are not available or are of such poor quality that voice communications are not possible. The FAA noted in the Extended Operations (ETOPS) of Multi-Engine Airplanes final rule that if a satellite-based communications system is installed to meet the requirements of § 121.99(c), then there is not a requirement for a second “additional” satellite system to satisfy § 121.99(d).⁶ The preamble explains that an air carrier is not required to install “two ‘additional’ satellite-based communication systems to meet the regulatory requirement.”⁷ Only one of the two systems onboard need to be capable of this form of communication when ETOPS extend beyond 180 minutes.

In response to your second question, the plain language of the regulations at issue does not require that the voice communications between each airplane and the appropriate dispatch office and the appropriate air traffic control (ATC) be simultaneous.

We appreciate your patience and trust that the above responds to your inquiry.

⁶ 72 *Fed. Reg.* 1808, 1843 (Jan. 16, 2007).

⁷ *Id.*