Federal Aviation Administration

Memorandum

Date: DEC 6 2011

To: John S. Duncan, Manager, Air Transport Division, AFS-200

From: Rebecca B. MacPherson, Assistant Chief Counsel for Regulations, AGC-200

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Subject: Interpretation as to whether part 121 air carriers can use data communication instead of voice communication

This is in response to your August 1, 2011 memorandum requesting an interpretation as to whether part 121 air carriers can use data communication, such as text messaging, instead of voice communication. Your memorandum poses five questions, which are answered below.[1]

I. Whether 14 C.F.R. § 121.99(a) allows a certificate holder conducting domestic or flag operations to substitute text messaging technology in lieu of voice communications capability.

Your first question asks whether 14 C.F.R. § 121.99(a) allows a certificate holder conducting domestic or flag operations to use text messaging technology, such as Aircraft Communications Addressing and Reporting System (ACARS), instead of voice communications capability over a route or a portion of a route during normal operating conditions. We conclude that section 121.99(a) permits a certificate holder conducting non-ETOPS domestic or flag operations to substitute text messaging technology, such as ACARS, in lieu of voice communications capability over a route or a portion of a route during normal operating conditions

Section 121.99(a) requires that "[e]ach certificate holder conducting domestic or flag operations must show that a two-way communication system, or other means of communication approved by the FAA certificate holding district office is available over

[1] For the sake of conciseness and clarity, some of the sections in this memorandum address multiple questions.

the entire route." This communication system must "provide reliable and rapid communication under normal operating conditions." *Id.*

Before August 6, 2007, section 121.99(a) required certificate holders to have a two-way radio communication system. In 2002, the FAA published a notice of proposed rulemaking (NPRM) proposing to change the term "two-way radio communication system" to "two-way communication system." 67 Fed. Reg. 77326, 77333-34 (Dec. 17, 2002). The NPRM stated that "[t]hese changes would make the regulation more flexible for modern means of communication and would allow for future changes in technology." *Id.* at 77334. However, the NPRM also proposed to retain "voice communication for non-normal and emergency conditions" in order to address pilot workload and flight safety concerns. *Id.*

In 2007, the FAA issued a final rule (which became effective on August 6, 2007) changing the phrase "two-way radio communication system" in § 121.99(a) to "two-way communication system." 72 Fed. Reg. 31662, 31668 (June 7, 2007). The preamble to the final rule explained that this change "would permit the use of data link as opposed to just voice communication." *Id.*

Your memorandum asks if § 121.99(a) currently requires voice communication capability at all times and if the 2007 change to § 121.99(a) simply permitted text messaging technology to be used in addition to voice communication and not in lieu of voice communication. You highlight the final rule's statement that the change to § 121.99(a) would permit data links to be used "as opposed *just* voice communication" (emphasis added).

In the context of the entire administrative record, this language in the preamble means that the final rule eliminated the previously-existing requirement in § 121.99(a) that a certificate holder must use a radio communication system. Instead, the 2007 final rule provides the certificate holder with the option to use a data link communication system, a voice communication system, or some combination of data links and a voice communication system.

The administrative record supports this proposition in a number of ways. First, the 2007 final rule changed the regulatory text of § 121.99(a) by removing the word "radio" from the communication system requirements imposed by that section. This change makes sense only if the FAA intended to remove the requirement in § 121.99(a) that a certificate holder have a radio communication system. If the FAA intended to maintain the radio communication requirement, there would have been no need to remove the word "radio" from the regulatory text of § 121.99(a).

Second, the NPRM for the 2007 rule also clarifies the intent behind the removal of the word "radio" from § 121.99(a). The NPRM explained that the removal of this word would make the regulation "more flexible." 67 Fed. Reg. at 77334. If the removal of the word "radio" from § 121.99(a) is construed to mean that other communication systems could be used instead of a radio, then the NPRM's increased-flexibility explanation

makes sense because the pertinent change to the regulations would provide certificate holders with additional options for complying with § 121.99(a). However, if the 2007 rulemaking is construed to continue the previously-existing requirements and simply allow certificate holders to employ other communication systems in addition to the radio communication system, then it is unclear how this rulemaking would increase flexibility.

The NPRM for the 2007 rule also proposed to "retain" voice communication requirements for non-normal and emergency operations. *Id.* The NPRM's use of the word "retain" with regard to the radio requirement for non-normal and emergency operations implies that this requirement was being removed for normal operations. Otherwise, there would have been no need to "retain" the radio requirement for certain types of operations, as that requirement would not have been eliminated for any operations.

Your memorandum also points to text in the preamble to the final rule stating that "[t]he FAA believes that voice communication is necessary in other than non-normal or emergency conditions." 72 Fed. Reg. at 31669. However, this language is found in a part of the preamble that discusses sections other than § 121.99(a). As discussed more fully below, this part of the preamble explains why the FAA determined that certain specific types of operations still needed to have a radio/voice communication system. In light of this determination, the preamble states that the final rule did not eliminate the radio/voice communication requirement for sections 91.511, 121.349(b)(2), and 121.351(a)(3), which govern those specific types of operations. Thus, read in context, the preamble text in question was not referring to the change that the final rule made to § 121.99(a).

Because the regulatory record shows that the intent of the 2007 rule was to change § 121.99(a) to permit communication systems other than "radio," we conclude that § 121.99(a) currently allows a certificate holder conducting non-ETOPS domestic or flag operations to substitute text messaging technology in lieu of voice communications capability over a route or a portion of a route during normal operating conditions. However, it should be noted that dispatch centers and air traffic facilities use varying communication systems, including voice, and, to the extent it is required to do so, an aircraft must be able to communicate with the pertinent facilities.

II. Whether 14 C.F.R. §§ 91.511, 121.349(b)(2), and 121.351(a)(3) still require voice communication for all instrument flight rules (IFR) over the top operations as well as extended overwater operations other than ETOPS, and whether the requirements of these sections are superceded by § 121.99(a).

Your second question asks whether 14 C.F.R. §§ 91.511, 121.349(b)(2), and 121.351(a)(3) still require voice communication systems for all IFR over the top operations as well as extended overwater operations other than ETOPS. Your third question asks whether these sections are superseded by the permission that § 121.99(a) gives for certificate holders to use text messaging systems instead of voice communication.

Section 91.511(a)(1) requires radio communication equipment for flights that either: (1) take place over water for more than 30 minutes of flying time, or (2) travel at least 100 nautical miles from the nearest shore. Section 121.349(b)(2) requires a communication system with two-voice communication capability for flights that either: (1) operate under visual flight rules (VFR) over routes that cannot be navigated by pilotage, or (2) "operate under IFR or over the top." Section 121.351(a)(3) requires a system with two-way voice communication capability for extended over-water operations.

As the preceding paragraph shows, sections 91.511, 121.349, and 121.351 only apply to specific types of operations (e.g., § 121.351 only applies to extended over-water operations). In the NPRM to the 2007 rule, the FAA proposed changing these sections in a manner similar to § 121.99(a) by removing these sections' requirement that an aircraft be equipped with a radio or voice communication system during normal operations. *See* 67 Fed. Reg. at 77332, 77335.[2] However, in the final rule, the FAA did not adopt the NPRM's proposal with regard to §§ 91.511, 121.349, and 121.351. *See* 72 Fed. Reg. at 31669. Instead, the FAA retained the voice/radio communication requirements in those sections, explaining that this part of the NPRM proposal was "premature" and that "voice communication is necessary in other than non-normal or emergency conditions." *Id.*

In addition to the above sections, the NPRM also proposed eliminating the voice/radio communication requirement for §§ 91.205(d)(2), 91.711(c)(1)(i), 121.345, 121.347, 125.203(a), and 135.161. Like the sections discussed in the preceding paragraph, these sections also apply to specific types of operations, and the final rule retained the voice/radio communication requirement in these sections.

Because the 2007 final rule explicitly declined to remove the voice-communication requirements from §§ 91.205, 91.511, 91.711, 121.345, 121.347, 121.349, 121.351, 125.203, and 135.161, those requirements remain in force and supersede the provisions of § 121.99(a) for the specific types of operations governed by §§ 91.205, 91.511, 91.711, 121.345, 121.347, 121.349, 121.351, 125.203, and 135.161. However, for the types of non-ETOPS part 121 operations that are not governed by §§ 91.205, 91.511, 91.711, 121.345, 121.347, 121.349, or 121.351, section 121.99(a) would permit the aircraft used in those operations to use a text messaging system instead of a voice communication system.

We expect that almost all part 121 operations would be governed by one of the regulatory sections that still require a voice/radio communication system. For example, section 121.347 requires radio equipment for flights operating under VFR over routes that can be navigated by pilotage. Section 121.349 requires a voice communication system for VFR flights over routes that cannot be navigated by pilotage and IFR flights. Because it appears that all part 121 VFR and IFR flights would be governed by one of these two sections, we expect that in most circumstances the pertinent non-121.99(a) regulatory sections would still require a voice/radio communication system.

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[2] For sections 121.349 and 121.351, the NPRM proposed to remove the voice/radio communication system requirement only for normal and non-emergency operations.

III. Whether § 121.99(c) allows a certificate holder conducting ETOPS operations to substitute text messaging technology where facilities are not available or are of such poor voice communications quality that voice communications are not possible over a route or a portion of a route.

Your fourth question asks whether § 121.99(c) permits a certificate holder conducting ETOPS operations to use text messaging technology instead of voice communications in places where facilities are not available or are of such poor quality that voice communication is not possible.

Subsection 121.99(c) requires certificate holders conducting flag operations to "provide voice communications for ETOPS where voice communication facilities are available." However, this subsection also provides that "[w]here facilities are not available or are of such poor quality that voice communication is not possible, another communication system must be substituted." The preamble to the final rule elaborates that in places where a voice communication system is not usable, "an alternate communication system such as . . . [a] data link is to be used." 72 Fed. Reg. 1808, 1842 (Jan. 16, 2007).

Because the preamble to the final rule specifically states that an alternate communication system such as a data link must be substituted for a voice communication system certain situations, we conclude that the intent of the language found in § 121.99(c) was to allow text messaging technology in ETOPS operations to be substituted for voice communications in places where facilities are not available or are of such poor quality that voice communication is not possible.

IV. For the purposes of § 121.99(a), what types of conditions are considered to be "normal operating conditions"?

Your final question asks about the type of conditions are considered to be "normal operating conditions" for the purposes of § 121.99(a).

Section 121.99(a) requires that a communication system provide "reliable and rapid communication under normal operating conditions." The FAA has previously interpreted non-normal operating conditions as conditions that "might include atmospheric or meteorological interference with communication or other operating conditions not anticipated in the normal course of operations." *See McGill v. DHL Airways, Inc.*, 12 Fed. Appx. 247, 251 (6th Cir. 2001) (unpublished) (quoting a 1964 FAA interpretation of normal operating conditions). For example, predictable weather conditions that do not interfere with high-frequency radio would be considered a normal operating condition because they: (1) do not constitute a meteorological interference with communication; and (2) were anticipated in the normal course of operations.

We appreciate your patience and trust that the above responds to your concerns. If you need further assistance, please contact my staff at (202) 267-3073. This response was coordinated with the Air Transportation Division of Flight Standards Service.