MU-2 Autopilot Requirements and the Minimum Equipment List

By Rick Wheldon

By now, all MU-2 operators should be familiar with SFAR 108, published in the February 6, 2008 Federal Register. While the majority of SFAR 108 deals with training and currency issues, paragraphs 7 (a) and 7 (b) place an operational restriction that, for most flights, requires that a functional autopilot be available. Let's begin this discussion by quoting that section of SFAR 108:

> 7. *Operating Requirements*. (a) Except as provided in paragraph (b) of this section, no person may operate a Mitsubishi MU-2B airplane in single pilot operations unless that airplane has a functional autopilot.
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> (b) A person my operate a Mitsubishi MU-2B airplane in single pilot operations without a functional autopilot when-
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> (1) Operating under day visual flight rule requirements: or
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> (2) Authorized under a FAA approved minimum equipment list for that airplane, operating under instrument flight rule requirements in daytime visual meteorological conditions.

Effectively, if your autopilot becomes inoperative, you either need to get a second qualified pilot, fly day VFR, fly IFR in VMC conditions, or have the autopilot repaired before flight. This begs the question – what is a functional autopilot? The answer is not apparent in the rule.

It turns out that the FAA definition for a functional autopilot can be gleaned from the Master Minimum Equipment List (MMEL) policy making documents. At http://www.opspecs.com/FAAInfo/PolicyLetters/Final/byPL_Number.htm , the FAA makes available policy letters for the implementation of MMELs. Policy Letter 101 deals with autopilot relief. In the discussion section, the FAA states that autopilots have become increasingly important to safe flight operations. Specifically, PL-101 states that "An operational autopilot, particularly one capable of maintaining a constant altitude and direction, offers significant advantages in view of increased traffic, all weather operations, and flight crew training factors." Based on this policy, the FAA has come to define a functional autopilot as "a system that has functions which are intended to maintain constant altitude and constant direction."

Note that SFAR 108 lists several ways to fly with an inoperative autopilot, but does not eliminate the requirement for the pilot to comply with other regulations. Specifically, FAR 91.213 requires that all aircraft equipment be operational unless relief is provided by an FAA approved Minimum Equipment List (MEL). Therefore, when an autopilot fails, compliance with FAR 91.213 requires that an MEL be utilized, even for the two pilot operations or day VFR operations allowed by SFAR 108.

Horror stories abound about the difficulty of obtaining approval for an MEL, but, for our level of operations, we found it to be quite simple. Basically, rather than attempt to build our own list, we submitted a letter to the local FSDO requesting authorization to operate with the MMEL as an MEL. They replied with a Letter of Authorization approving our request. The LOA was long, legal and complicated (they didn't just say "go ahead") and had to be read carefully. In essence, however, the FAA told us to carry the letter in our airplane along with the MMEL, and to devise maintenance (M) and operational (O) procedures to ensure compliance with the various restrictions. Our FSDO did not require further approval of the (M) and (O) procedures. We downloaded the MMEL at the FAA website http://www.opspecs.com/ and followed the guidelines in the MMEL introduction to address the (M) and (O) procedures.

Let's go back to the autopilot. The MMEL lists as separate line items the autopilot system as a whole and the several individual modes of operation. All modes other than Heading and Altitude Hold are listed and can be deferred separately without having to MEL the whole autopilot system. Therefore, if the NAV mode fails, or the Vertical speed mode fails, as long as Heading and Altitude Hold remain operational, the autopilot can continue to be considered operative, both in terms of the MEL and the SFAR. This, obviously, provides the operator with the ability to legally continue to fly without the dual pilot or VFR restrictions found in SFAR 108.

We would highly recommend that those MU-2 operators who have not obtained MEL or MMEL authorization do so. Like all mechanical systems, autopilots can fail, and it would be unfortunate indeed if the failure mode was such that the trip might have continued but for the absence of an MEL.