CALLBACK
From NASA's Aviation Safety Reporting System
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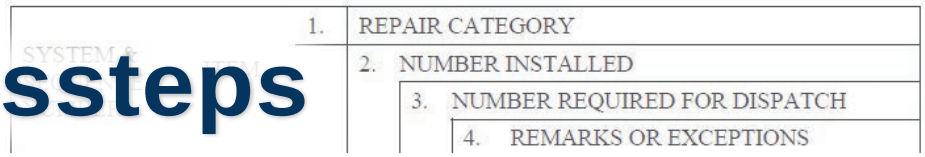
MEL Missteps



A Minimum Equipment List (MEL) can be a complicated document from an operational point of view. Broadly, an MEL is an FAA approved document which allows an aircraft to be operated with certain inoperative equipment that has previously been determined to be nonessential for safe flight. When a piece of equipment is inoperative, the MEL usually specifies and requires one or more mitigating conditions or procedures. Procedures may be simple and obvious, or they may be obscure and tedious, addressing complex interactions between multiple aircraft systems. As such, the MEL has been a frequent source of confusion for pilots, dispatchers and Aviation Maintenance Technicians (AMTs) alike.

An aircraft's MEL is not easy to read, much less interpret or heed. Mistakes are common, and compliance can be difficult. Opinions may differ about whether an MEL item is applicable to a given situation. Incorrect interpretation of MEL specified procedures may cause application shortfalls, while consequences ranging from imperceptible to severe could manifest themselves during any phase of flight.

This month, *CALLBACK* presents reports of MEL-related incidents. Lessons are plentiful, but common threads prevail. Attention to detail and ensuring that the correct MEL item is correctly applied are axiomatic to the safety of flight.

A Confusing Maintenance Conundrum

An air carrier AMT reveals how a confusing MEL item developed into a nonconforming operational predicament.

■ *Two AMTs were assigned to troubleshoot a [deferred maintenance] item. Seat 1A electric position functions were inoperative. They found that the harness leading to the remote control (retractable electric cable) was bad, and that we did not have one here. The AMTs contacted [Maintenance Control] for an MEL [item A] to [defer] that portion of the seat as inoperative. The seat was still usable through alternate controls. When [Maintenance Control] was contacted, they said we also need to enter an MEL [item B for] flight crew rest facilities and equipment on the aircraft as well. The AMTs complied with [Maintenance Control] and added that MEL on the aircraft.*

The question that came into play was that as per [MEL B],… because this was seat 1A (or 2A), a seat must be clearly identified for flight crew rest, and a placard must be installed that says, "For Flight Crew Rest Only/Class 3 Rest Facility." Then [the MEL] states to contact Dispatch with the seat numbers that will be used for flight crew rest.

… How does the AMT putting the MEL on the airplane know what seat will be used for flight crew rest? We spoke to [a supervisor], and he said it would be assigned locally, but again, how can the AMT be compliant with the MEL at the time of issue? The AMT has no way of knowing seat availability, etc. We also were told that this was a Class 1 flight, which did not need a crew rest seat, but if it were a Class 3 flight, then it would.

This issue was brought to our attention by an FAA inspector that was onsite. We all believe both MELs [A] and [B] should be clarified to give clear and concise directions on how to comply with the MEL. As it is written now, it leads to different interpretations between Aircraft Maintenance, [Maintenance Control] and Dispatch. This was confirmed during the FAA inspection when we received three different ways to comply with MELs.… To make sure the AMT is compliant when applying the MEL, we are asking that both MELs…be revised.

Applying the Correct MEL Item

A system malfunction discovered during the pre-flight inspection revealed that an MEL item had been incorrectly applied. The lapse could have had severe consequences.

■ *During our review of the flight release and preflight duties, we discovered the aircraft had a minimum equipment item that deferred the flight-deck-to-ground service interphone system. We reviewed the MEL and noted that we would have to use hand signals and prior coordination with Ground Support Personnel during engine start and taxi. This flight was scheduled as a quick-turn, and Maintenance did not plan on any repairs to the interphone system.*

During cockpit preflight duties, the First Officer (FO) discovered the cockpit oxygen mask interphone system was inoperative. We tested both the cockpit speaker system and headphone system at both seats and discovered all systems were inoperative. We checked the service interphone system and it was also inoperative. I immediately called the company Dispatcher and advised him of our situation.

He called me back several minutes later and stated that Maintenance advised him the MEL was appropriate for our situation and that [the aircraft] was airworthy at that point. I disagreed with their assessment.

The First Officer and I agreed the MEL was not germane to our problem. The Dispatcher then suggested we solicit the help of a company Subject Matter Expert (SME). I agreed.… When the SME called, I discussed my situation. He then discussed the matter with Maintenance and informed me the MEL was appropriate according to aircraft Maintenance. After several minutes passed, a local gateway Maintenance Supervisor responded and promptly had the interphone amplifier removed and replaced. This resolved our problem. Our issue was the result of no cockpit interphone capability. This issue was not to be confused with no cockpit-to-ground and ground-to-cockpit interphone capability (per the stated MEL). We were unable to satisfy company aircraft operating procedures (test the interphone operation of the oxygen mask microphone) and company and aircraft flight manual emergency procedures (smoke/fumes - oxygen masks on, crew communications established). Ultimately, per FAR Part 121 regulations, we believed we could not operate this flight safely. The flight crew recommends the MEL be edited to address loss of intra-cockpit interphone capability.

Correctly Accomplishing the MEL Procedure

This Captain's confusion over MEL procedures allowed for an operational sequence that rendered MEL compliance impossible. A delay and a suggestion resulted.

■ *When we arrived at the gate, Maintenance had to reapply an MEL that was just cleared. The MEL was being re-issued; it was 27-XX (ELAC) [Elevator Aileron Computer]. The FO and I reviewed the MEL and decided on doing the action items because it dealt with checking the flight controls, which meant the hydraulics were pressurized. I realized my error when I was unable to turn…the blue hydraulic pump, on the maintenance panel, to ON after engine start after pushback. The switch would not lock into the ON position. I contacted Maintenance Control via Dispatch, and Maintenance Control said to go back to the gate. Maintenance came to the airplane, and I explained what happened. The Technician [explained that] the blue hydraulic pump would not turn on because the system was energized.… I said, "You are right," and remembered you cannot turn on the switch with engines running. Then we discussed the action items on the MEL. We both, along with the FO, were in agreement about how the MEL was written - not in a clear manner. Nowhere does it say to perform the action items with the engines off. The way the action items are written, such as C then D, only adds to confusion. When you complete action item C, you have completed the task. When you go to D, nowhere does it mention to perform the rest of the action items at the gate or remote area with the engines not running. We performed the action items at the gate and proceeded on our flight.*

Clarity of the MEL needs to be improved.… Make mention that this must be done at the gate.…

Dropping the Ball?

This air carrier Captain took extra care to ensure that the crew was in compliance with their MEL item. The surprise came after it was thought that all had been accomplished.

■ *We had an MEL on the passenger door power assist system, which requires Maintenance to be present when you arrive and depart to assist in opening and closing the passenger door. Before we left, the flight attendants were briefed on the MEL and the procedures involved to open and close the door.… Enroute, I sent an ACARS to Dispatch along with a message in the in-range [call] to have a Mechanic present when we arrived at the gate.… I briefed [the flight attendants] again on the procedure of getting the door opened properly.… I told them that once we got parked at the gate and the seat belt and sterile lights go out, to not open the door until we got confirmation from Maintenance.*

We arrived and shutdown and went through the shutdown checklist. From my point of view, I couldn't clearly make out whoever was by the door. All I heard were several hard knocks on the side of the plane. The passenger door was unlatched for a few seconds. A brief conversation took place between the Flight Attendant and the Gate Agent through the crack in the door, then the door opened unassisted, free-falling to the ground. The door hit the ground hard and bounced twice. No one was injured during the event.

I opened the cockpit door and went back to figure out what happened. The Flight Attendant said that after the knock, the door was cracked open. She asked the Gate Agent if the door was ready to be opened and if Maintenance was present and that we needed them to help with the door. She was told yes several times and that she was cleared to open. Assuming Maintenance would take over, she let go of the door, thinking that they were down there to catch it.… The person on the ramp who knocked was actually…a ramper who had no idea about the MEL and the broken door assist, so no one was down there to catch the door. I contacted Maintenance, and a write up was made in the logbook so that the door could be checked out and inspected for damage. There was a serious breakdown in communication, but no one person is to blame.

ASRS Alerts Issued in July 2020	
Subject of Alert	**No. of Alerts**
Aircraft or Aircraft Equipment	3
Airport Facility or Procedure	7
ATC Equipment or Procedure	6
Hazard to Flight	1
TOTAL	**17**

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July 2020 Report Intake	
Air Carrier/Air Taxi Pilots	3,049
General Aviation Pilots	1,291
Flight Attendants	538
Controllers	234
Military/Other	214
Mechanics	187
Dispatchers	116
TOTAL	**5,629**