

Real-World Flying

To MEL or Not to MEL



by Stan Smith

In this issue, I want to discuss the benefits and requirements for aircraft operators who are considering applying to the FAA for a Letter of Authorization (LOA) to operate their aircraft using a Minimum Equipment List (MEL).

The decision for Part 91 operators to operate with an MEL is one that often raises more questions than answers. As an advocate of operating with an MEL, I expected to lay out my argument, do some research, and present the definitive answer as to why you should (or must) apply for the MEL LOA.

But, like many things in the aviation regulatory world, the more you ask the more muddied the waters become: black and white turns into grey and the simple answer becomes more complex.

But, let me start with the basics of

what an MEL is and how it is used. Then I'll talk about the muddy waters that cause confusion, followed by the benefits of having your own MEL.

First, understand that the option of operating without an MEL is an alternative which is not available to Part 135/121 operators. They must fly with an approved MEL. While many Part 91 operators see this relief as a benefit, I would suggest that most operational procedures adopted or required by commercial operators make sense from an operational, regulatory and safety aspect.

What is a Minimum Equipment List?

By definition the MEL is "a list of items, equipment and instruments that may be inoperative on a specific aircraft under stated conditions." The LOA is issued to a specific

operator for a specific aircraft (or group of like aircraft).

The MEL may permit the operator to take off with various pieces of equipment inoperative because those pieces of equipment are not deemed critical to the proposed flight and do not present a safety risk. While pilots often think of the MEL as a "ticket" to depart, technically the MEL permits the operator to "defer" maintenance until a specific future date or number of flight hours. Typically the airplane may be flown for three, 10 or 120 days with an item deferred, or a given number of flight hours.

The MEL lists many pieces of equipment on the airplane. As such, it is usually specific to that airplane's configuration. The MEL is usually developed using a Master Minimum Equipment List (MMEL) normally provided by the aircraft manufacturer

and then tailored to the specific airplane or utilized with the understanding (as specified in the LOA) that the applicable (installed) equipment is relevant. The exact format and equipment listed will be reviewed and sometimes dictated by the Flight Standards District Office (FSDO) issuing the LOA.

How is the MEL used?

There are several steps to actually using the MEL. While at first this may seem cumbersome after you practice the process a time or two, it is really quite easy. The sequence and logic makes sense if you realize that, in the FAA's eyes, you are being permitted to operate an airplane that otherwise should be grounded (the FAA considers an approved MEL to be an STC).

The first step is to identify the discrepancy. If repair is not practical you will look for the affected equipment in the MEL. If the equipment is not listed, then you may not defer the repair and you must have it fixed before flight.

If the affected equipment is listed in the MEL then you must determine if you meet the "required number" of items required for dispatch. For example, on a CJ2 there are two Fuel Flow Indicating Systems but only one is required per my MEL.

Next you must review if there are any "remarks or exceptions" listed in the MEL under that item. These may be general remarks like "as required by FAR" or in the case of my inoperative Fuel Flow Indicator "One (1) may be inoperative," or the remarks may fall into two more specific categories, "O" or "M."

An "O" designation means that a specific "operational" procedure or constraint must be followed. For example, landing lights may be inoperative during day operations but not at night.

An "M" designation means that a specific "Maintenance" procedure must be followed such as deactivating a system or collaring a circuit breaker. Your MEL may have an

integrated or separate "O & M" section or guide that details the requirements of specified items. Normally "O" items are performed by pilots and "M" items by an A&P, but this is not always the case.

Finally you will make an entry into your "Discrepancy Log." The discrepancy log could be a separate section of your maintenance logbook or (more typically of Part 91 operators who don't their entire maintenance logbook on the airplane) included in your MEL binder. The Discrepancy Log entry should be formatted to drive you through much of the rest of the process to include placarding the inoperative item and determining the item category (how long the repairs can be deferred).

The aircraft can now be flown until the "repair due date" expires, but it should certainly be repaired as soon as reasonably possible. It is also the responsibility of the operator/PIC to consider multiple discrepancies and how they may combine to present an unsafe condition.

The preflight process must include a review of any deferred discrepancies by the PIC prior to flight. This is of critical importance when multiple pilots fly the same airplane. A subsequent pilot could easily violate an "O" procedure (like flying at night without landing lights) that was not a factor for the previous pilot or over fly the repair due date.

Why Are the Waters Muddy?

Earlier I mentioned the confusion as to the need for an MEL. First I must put this discussion into the context of the light twin and turbine operators because that is where things get complicated (at least for me).

Many Part 91 operators ask if they need an MEL. The easy answer is, yes. But easy isn't good enough, so let's elaborate.

According to FAR 91.213 (a) "Except as provided in paragraph (d) of this section, no person may take off an aircraft with inoperative

instruments or equipment installed unless the following conditions are met:" (from here I will edit and paraphrase the conditions pertinent to this discussion)

1. You have an approved MEL on board and the operation is conducted within the limitations of the MEL, or;

2. The flight is conducted in a nonturbine-powered airplane for which a Master Minimum Equipment List (MMEL) has not been developed, or a nonturbine-powered small airplane (less than or equal to 12,500 pounds) for which an MMEL has been developed, and;

a. The equipment is not basic VFR-required equipment, and;

b. The equipment is not required for the phase of flight (i.e., night IFR) according to the Kinds of Operation Equipment List (KOEL), and;

c. The equipment is not required according to 91.205 (Instrument and Equipment Requirements, etc.),

d. Required by an AD, **and**;

Any inoperative equipment falling under item 2 above must be removed, the cockpit control placarded, documented and a new weight and balance calculated, or deactivated and placarded (by maintenance if required), and the pilot (or certified maintenance person) must determine if the condition does not present a hazard.

Nothing in item 2 provides relief for a turbine-powered airplane. If you fly a turbine aircraft you must have an MEL (to operate with inoperative equipment). Nothing in Item 2 provides relief for an airplane more than 12,500 pounds, turbine or otherwise.

If you operate a conventional twin under 12,500 pounds, then you may operate under the guidelines of item 2 (be sure you read the actual FAR).

But my question is what benefit do you have over the pilot with the same airplane who has an MEL? I think little to none. If fact you take

on much more responsibility with much less guidance.

One thing that confuses many operators is the inclusion of the Kinds of Operation Equipment List (KOEL) in the Airplane Flight Manual (AFM). For Part 23 (Normal Category) airplanes, the inclusion of the KOEL in the AFM is an FAA requirement placed on the manufacturer during the certification process. It is also a reference source in developing the MMEL. While referring to the KOEL is one step in the process for the pilot using item 2 above, the KOEL is not an MEL and can not be used as one. However, there is always the exception:

If your AFM addresses certain operations with equipment inoperative, you will find that item listed in the KOEL, and there should be a note which refers you to the procedure required for dispatch. For example, the Citation CJ2 AFM permits me to dispatch with the anti-skid inoperative. The KOEL refers me to the Abnormal Section of the AFM where there is a specific procedure that includes items like prohibiting no-flap takeoffs, turning off the anti-skid switch, and increasing the runway required by a factor of 1.6. In this instance, I can dispatch with an inoperative anti-skid and no MEL.

You can also expect to see more emphasis on MELs as the Domestic Reduced Vertical Separation

Minimums (DRVSM) takes affect in January 2005. While it is not specifically required (by regulation) that operators flying in DRVSM airspace (above FL280) use an MEL, they must have an LOA to operate in RVSM. Since much of the RVSM certification process deals with the airplane's altitude-keeping equipment many FSDOs are wanting an MEL along with the RVSM LOA.

What Are the Benefits?

The benefits of an MEL are several. While the process to attain your MEL LOA may be cumbersome and time consuming, once you have it, your operation is much more adaptable to equipment failures. This is especially true when you are away from home or a maintenance facility and trying to make schedule. It allows you the ability to rapidly dispatch with inoperative equipment.

Also the MEL spells out your solution. You don't have to research the legality of trying to fly this afternoon. You have planned ahead! (How many times do we talk about that in aviation?)

The answer and solution become "black and white". Perhaps the greatest benefit is that in its effort to ensure your airplane is safe to fly, it protects you as the PIC while demonstrating your commitment to a safe and legal operation.



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