

AWB 00-8 Issue 1 - Item 21.8 of the Master Minimum Equipment List (MMEL), applicable to Beech Model 200 Series and F-90 Aircraft

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Effectivity

All Beech Model 200 Series and F-90 aircraft that are fitted with a three-position switch to control the engine bleed air shut off valve.

Purpose

The purpose of this AWB is to alert maintenance personnel and operators of the above aircraft, to an MMEL item that could be misinterpreted and cause an unsafe condition.

Background

Some Beech Model 200 Series and F-90 aircraft are fitted with a three-position switch (there could be one for each engine), which control the engine's bleed air shutoff valve. The bleed air system provides pressurised air for cabin pressurisation, the de-icing system, and certain instruments. According to the design of the bleed air system of the aircraft, a shutoff valve fails safe i.e. it automatically goes to the OPEN position.

The MMEL item No. 21-8, entitled "Bleed Air Shutoff Valves (Pneumatic Instrument Air)", of the subject MMEL, allows operation of an aircraft with one inoperative bleed air shutoff valve in the INSTR AND ENVIR OFF position, subject to the condition that the inoperative valve is determined to be in CLOSED position by maintenance action. The wording of this MMEL item does not appear to be very clear and may be wrongly interpreted.

Operation of an aircraft with an inoperative bleed air shutoff valve secured in CLOSED position may jeopardise safety of the aircraft if the opposite side engine fails during flight. This is because no bleed air would be available for bleed air dependent instruments, the de-icing system, and for cabin pressurisation.

Securing the inoperative bleed air shutoff valve in OPEN position may mitigate the risk in such circumstances.

On the other hand, operation of an aircraft with an inoperative bleed air shutoff valve secured in OPEN position may also jeopardise safety of the aircraft if bleed air leakage from the faulty shutoff valve side occurs during flight. This is because any bleed air leakage is not only a potential fire hazard but can also damage or melt the less temperature tolerant fittings and equipment required for the safe operation of the aircraft. The only option available to alleviate the risk of damage caused by bleed air leakage in this situation is to shut down the respective engine during flight. In normal circumstances, the respective three-position switch can control a bleed air leak by closing the bleed air shutoff valve.

CASA has contacted the FAA in relation to MMEL item 21-8.

Recommendation

CASA recommends, pending further investigation into this issue by the FAA, operators of Beech Model 200 series and F-90 aircraft having CASA-approved MEL's amend the MEL item No. 21-8 as follows to mitigate the possible unsafe situation during flight:

(M) One may be inoperative in the INSTR AND ENVIR OFF position provided the aeroplane:

1. is operated for day VFR flights only; and
2. remains unpressurised; and
3. does not fly in icing conditions.