TCF-50-001-1E-1

KU-KI-1591	No. TCD-4552-96

Date December 27 , 1996

Japan Civil Aviation Bureau

TAIKUSEI-KAIZEN-TSUHO

Airworthiness Directive

The undermentioned examinations or modifications are mandatory

1. Applies to : Mitsubishi Model MU-2B and MU-2B-10, -15, -20, -25, -26, -30, -35 and -36 Airplanes

2. Compliance required as indicated, unless already accomplished.

To minimize the potential hazards associated with operating the airplane in severe icing conditions by providing more clearly defined procedures and limitations associated with such conditions, accomplish the following:

2.1 Within the next 24 hours time-in-service after the effective date of this AD, accomplish the requirements of paragraph 2.1.1 and 2.1.2. of this AD.

2.1.1 Revise the JCAB-approved Airplane Flight Manual (AFM) by incorporating the following into the Operation Limitation Section of the AFM.

"ICING LIMITATION

Minimum airspeed for sustained level

flight in icing conditions ..... 180 KIAS

Sustained flight in icing conditions with flaps extended is prohibited except for approach and landing.

WARNING

SEVERE ICING MAY RESULT FROM ENVIRONMENTAL CONDITIONS OUTSIDE OF THOSE FOR WHICH THE AIRPLANE IS CERTIFICATED. FLIGHT IN FREEZING RAIN, FREEZING DRIZZLE, OR MIXED ICING CONDITIONS (SUPERCOOLED LIQUID WATER AND ICE CRYSTALS) MAY RESULT IN ICE BUILD-UP ON PROTECTED SURFACES EXCEEDING THE CAPABILITY OF THE ICE PROTECTION SYSTEM, OR MAY RESULT IN ICE FORMING AFT OF THE PROTECTED SURFACES. THIS ICE MAY NOT BE SHED USING THE ICE PROTECTION SYSTEMS, AND MAY SERIOUSLY

DEGRADE THE PERFORMANCE AND CONTROLLABILITY OF THE AIRPLANE. IN SOME CASES THE ICE MAY APPEAR TO BE OF RELATIVELY SMALL PROPORTIONS. OFTEN, THE APPEARANCE OF THE ICE CAUSING THE MOST SEVERE CONSEQUENCES IS GLAZE ICE OR A COMBINATION OF GLAZE ICE AND RIME ICE.

DURING FLIGHT, SEVERE ICING CONDITIONS THAT EXCEED THOSE FOR WHICH THE AIRPLANE IS CERTIFICATED SHALL BE DETERMINED BY THE FOLLOWING VISUAL CUES. IF ONE OR MORE OF THESE VISUAL CUES EXIST, IMMEDIATELY REQUEST PRIORITY HANDLING FROM AIR TRAFFIC CONTROL TO FACILITATE A ROUTE OR AN ALTITUDE CHANGE TO EXIT THE ICING CONDITIONS.

1. AIRSPEED LOSSES GREATER THAN 20 KIAS THAT ARE NOT REGAINED AFTER A BOOT DEICE CYCLE.
2. DECREASE IN RATE OF CLIMB DURING A CONSTANT AIRSPEED CLIMB TO 300FT/MIN.
3. UNUSUALLY EXTENSIVE ICE ACCRETED ON THE

AIRFRAME IN AREAS NOT NORMALLY OBSERVED TO COLLECT ICE.

(E.G., LARGE GRANULAR ICE BUILD-UP ON THE WINDSHIELD AND ICE ACCUMULATING AROUND THE WELD LINE ON THE TIP TANKS.)

4. ACCUMULATION OF ICE ON THE LOWER SURFACE OF THE WING AFT OF THE PROTECTED AREA.

5. ACCUMULATION OF ICE ON THE PROPELLER SPINNER FARTHER AFT THAN NORMALLY OBSERVED.

6. ACCUMULATION OF ICE ON THE UPPER SURFACE OF THE WING AFT OF THE DEICING BOOTS VISIBLE FROM THE PILOT'S POSITION THAT IS NOT REMOVED BY DEICING BOOT OPERATION.

NOTE

Ice accretion beyond the limit of the boots on the upper surface may be visible from the pilot's position as a solid or partial ridge of ice.

SINCE THE AUTOPILOT MAY MASK TACTILE CUES THAT INDICATE ADVERSE CHANGES IN HANDLING CHARACTERISTICS,

USE OF THE AUTOPILOT IS PROHIBITED WHEN ANY OF THE VISUAL CUES SPECIFIED ABOVE EXIST, OR WHEN UNUSUAL LATETAL OR LATERAL/YAW TRIM REQUIREMENTS ARE ENCOUNTERED WHILE THE AIRPLANE IS IN ICING CONDITIONS.

All icing detection lights (tip tank taxi lights, if installed, and wing ice detection light) must be operable prior to flight into known or forecast icing conditions at night."

2.1.2 Revise the JCAB-approved AFM by incorporating the following into the Abnormal Procedure Section of the AFM.

"SEVERE ICING ENCOUNTER

THE FOLLOWING DESCRIBES SOME OF THE WEATHER CONDITIONS THAT MAY BE CONDUCTIVE TO SEVERE IN-FLIGHT ICING :

1. Visible rain at temperatures below 0 degrees Celsius ambient air temperature.
2. Droplets that splash or splatter on impact at temperatures below 0 degrees Celsius ambient air temperature.

PROCEDURES FOR EXITING SEVERE ICING ENVIRONMENT :

Procedures for exiting severe icing environment are applicable to all flight phases from takeoff to landing. Monitor the ambient air temperature. While severe icing may form at temperatures as cold as -18 degrees Celsius, increased vigilance is warranted at temperatures around freezing with visible moisture present. If the visual cues specified in the Operating Limitations Section of the AFM for identifying severe icing conditions are observed, accomplish the following :

1. Immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the severe icing conditions to avoid extended exposure to flight conditions more severe than those for which the airplane has been certificated.
2. Avoid abrupt and excessive maneuvering that may contribute to control difficulties.
3. Do not engage the autopilot.
4. If the autopilot is engaged, hold the control wheel firmly and disengage the autopilot.

5. If an unusual roll response, an uncommanded roll, or an unusual trim is observed, lower the nose (reduce the angle of attack) and allow the airspeed to increase before any reduction in engine power.

6. Do not extend flaps during extended operation in icing conditions. Operation with flaps extended can result in a reduced wing angle-of-attack, with the possibility of ice forming on the upper surface further aft on the wing than normal, possibility aft of the protected area.

7. If the flaps are extended, do not retract them until the airframe is clear of ice.

8. Report these weather conditions to Air Traffic Control."

2.3 An alternative means of compliance with this AD may be used, if approved by the Director-General of JCAB.

3. Remarks

This AD becomes effective on January 31, 1997.