LUFTFARTSVERKET
Luftfartsinspektionen

LUFTVÄRDIGHETSDIREKTIV
(LVD)

A. Flygplan
Mitsubishi
LVD Nr 2749

Sektion 2. Utlandstillverkad flygmateriel

TITEL: **Revision av flyghandbok (AFM)**

GÄLLER: Modellerna MU-2B-10, -15, 20, -25, -26, -30, -35, och -36 alla S/N, samt -40 och -60 alla S/N.

ÅTGÄRD: Utför åtgärder angivna i bifogad kopia av TCD-4552-96
För modellerna -40 och -60 gäller bifogad kopia av FAA AD 96-25-02.

TID FÖR ÅTGÄRD: Inom 24 flygtimmar räknat från detta LVD's utgivningsdatum

UNDERLAG: TCD-4552-96
FAA AD 96-25-02

REFERENS: TCD-4552-96
FAA AD 96-25-02

BESLUTSDATUM: 1997-01-21

LFS 1997:5

Åtgärder enligt LVD utgör nödvändig förutsättning för ifrågavarande flygmateriels luftvärdighet. Referens BCL M 1.11.
Anteckning om åtgärd, som vidtagits i enlighet med LVD, skall införas i teknisk journal för berörd flygmateriel med hänvisning till ifrågavarande LVD-nummer. Angivet underlag refererar till senast gällande revision/utgåva. LVD utges i luftfartsverkets författningssamlingar LFS.

Postadress	Gatuadress	Telefonnummer	Telegram	Telex
			Civilair	
601 79 NORRKÖPING	Vikboplan 11	011-192000	Norrköping	62450

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.

Japan Civil Aviation Bureau	No. TCD-4552-96	sheet 2/7

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.

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation
Administration

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

96-25-02 MITSUBISHI HEAVY INDUSTRIES, LTD.: Amendment 39-9843; Docket No. 96-CE-61-AD.

Applicability: Models MU-2B-10, -15, -20, -25, -26, -26A, -30, -35, -36, -36A, -40, and -60 airplanes (all serial numbers), certificated in any category.

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated in the body of this AD, unless already accomplished.

To prevent operating in conditions that are beyond the capability of the icing protection system, prevent aerodynamic stall at higher than normal airspeed because of icing conditions, and immediately provide the pilot with cues for recognizing hazardous conditions and exiting these conditions, which if not followed, could result in loss of the airplane, accomplish the following:

(a) Within the next 24 hours time-in-service (TIS) after the effective date of this AD, accomplish the requirements of paragraphs (a)(1), (a)(2), and (a)(3) of this AD. Inserting a copy of this AD into the AFM accomplishes this action.

(1) Revise the FAA-approved Airplane Flight Manual (AFM) by incorporating the following into the Limitations Section of the AFM.

LIMITATIONS SECTION
ICING LIMITATIONS

The minimum airspeed for sustained level flight in icing conditions is 180 knots indicated airspeed (IAS).

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 designed. 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 damage 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.

- Airspeed losses greater than 20 knots that are not regained after a boot de-ice cycle.
- Decrease in rate of climb during a constant airspeed climb to 300 feet per minute.
- Unusually extensive ice accreted on the airframe in areas not normally observed to collect ice.
- Accumulation of ice on the lower surface of the wing aft of the protected area.
- Accumulation of ice on the propeller spinner farther aft than normally observed.

- Accumulation of ice on the upper surface of the wing aft of the de-icing boots visible from the pilot's position that is not removed by de-ice 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 lateral or lateral/yaw trim requirements are encountered while the airplane is in icing conditions.

(2) Revise the FAA-approved Airplane Flight Manual (AFM) by incorporating the following into the Master Minimum Equipment List (MMEL) of the AFM. Inserting a copy of this AD into the AFM accomplishes this action.

All icing detection lights (tip tank taxi lights and wing illumination light) must be operable prior to flight into known or forecast icing conditions at night. [NOTE: This supersedes any relief provided by the Master Minimum Equipment List (MMEL).]

(3) Revise the FAA-approved AFM by incorporating the following into the Procedures Section of the AFM. Inserting a copy of this AD into the AFM accomplishes this action.

ABNORMAL PROCEDURES
SEVERE ICING ENCOUNTER

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

- Visible rain at temperatures below 0 degrees Celsius ambient air temperature.

- Droplets that splash or splatter on impact at temperatures below 0 degrees Celsius ambient air temperature.

PROCEDURES FOR EXITING SEVERE ICING ENVIRONMENT:

These procedures 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 Limitations Section of the AFM for identifying severe icing conditions are observed, accomplish the following:

- 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.

- Avoid abrupt and excessive maneuvering that may contribute to control difficulties.

- Do not engage the autopilot.

- If the autopilot is engaged, hold the control wheel firmly and disengage the autopilot.

- 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.

- 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 of the wing than normal, possibly aft of the protected area.

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

- Report these weather conditions to Air Traffic Control.

NOTE 2: Operators must initiate action to notify and ensure that flight crewmembers are apprised of this change.

(b) Incorporating the AFM revisions, as required by this AD, may be performed by the owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7), and must be entered into the aircraft records showing compliance with this AD in accordance with section 43.11 of the Federal Aviation Regulations (14 CFR 43.11).

(c) An alternative method of compliance or adjustment of the compliance time that provides an equivalent level of safety may be approved by the Manager, Small Airplane Directorate, Aircraft Certification Service, 1201 Walnut, suite 900, Kansas City, Missouri 64105. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Small Airplane Directorate.

NOTE 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Small Airplane Directorate.

(d) Copies may be obtained and inspected at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(e) This amendment becomes effective on December 27, 1996.

FOR FURTHER INFORMATION CONTACT:

Timothy P. Smyth, Aerospace Engineer, Small Airplane Directorate, 1201 Walnut, suite 900, Kansas City, Missouri, 64106; telephone (816) 426-6941, facsimile (816) 426-2169.