

PŘÍKAZ K ZACHOVÁNÍ LETOVÉ ZPŮSOBILOSTI

CAA-AD-T-023/1999R1

Nahrazuje CAA-AD-T-023/1999

Datum vydání: 13. května 1999

LETADLO - LETOVÁ PŘÍRUČKA (AFM) - ZMĚNA

Týká se: všech letadel ATR 72-101, -102, -201, -202, -211, -212, -212A.

Datum účinnosti: 17. června 1999

Provést v termínech: jak je popsáno v DGAC AD 1999-015-040(B) R1.

Postup provedených prací: dle DGAC AD 1999-015-040(B) R1.

Poznámky: Provedení tohoto PZZ musí být zapsáno do letadlové knihy. Případné dotazy týkající se tohoto PZZ adresujte na ÚCL technický inspektorát - Ing. Stibůrek. Pokud to vyžaduje povaha tohoto PZZ musí být zapracován do příslušné části dokumentace pro obsluhu, údržbu a opravy letadla. Tento PZZ byl vypracován na základě DGAC AD 1999-015-040(B) R1.

Ing. Pavel MATOUŠEK
Ředitel technického inspektorátu
Úřad pro civilní letectví

DGAC AD ref. : 1999-015-040(B) R1

AEROSPATIALE

ATR 72 Aircraft

Icing conditions - Revise the Airplane Flight Manual (AFM) (ATA 30)

1. APPLICABILITY : Airplane ATR 72, model -101, -102, -201, -202, -211, -212, -212A.

2. REASON : Airworthiness Directive to minimize the potential hazards associated with operating the airplanes in severe icing conditions, outside the certification envelope, by increasing maneuver/operating icing speeds by 10 kt.

Accumulated experience on the worldwide fleet of commuter aircraft, and a recently reported in-flight incident lead to recall that a prolonged exposure to severe icing conditions, outside the certification envelope, can lead to performance degradation and to stall.

Reason for prolonged exposures are late detection and/or non or late application of the AFM procedures, which require to immediately exit severe icing conditions as soon as detected.

It is however recognized that, even if the exit maneuver is initiated rapidly, it may take a few minutes before the airplane is out of the severe icing conditions.

Experience has shown that the currently recommended airspeeds in icing conditions, computed to provide adequate stall margins when flying in normal icing conditions, provide little margin to stall speeds when the airplane has accreted a large amount of ice following prolonged flight in severe icing conditions.

The purpose of this AD is therefore to amend the AFM to :

- reinforce severe icing detection means by adding a criteria .related to unusual performance degradation.

- increase the speed during the exit maneuver in order to provide improved margin to stall.- Introduce other editorial improvements to highlight the need to exit immediately severe icing conditions as soon as detected.- Incorporate and, when necessary, merge the previous AFM changes mandated by AD 1996-207-031(B) R1 in order to get a single AD dealing with the required operational documentation.

3. ACTIONS :Revise the approved Airplane Flight Manual (AFM) by incorporating the following.

This may be accomplished by inserting a copy of this AD in the AFM.

3.1 Into the limitations section : SYSTEMS/FLAPS

FLAPS : holding with any flaps extended is prohibited in icing conditions (except for single engine operations).

3.2. Into the limitations section - ICING CONDITIONS

All icing detection lights must be operative prior to flight at night.

NOTE : This supersedes any relief provided by the Master Minimum Equipment List (M MEL).

The ice detector must be operative.

- ICING CONDITIONS (cont'd)

- SEVERE ICING

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.

- During flight, severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following :

Visual cue identified with severe icing is characterized by ice covering all or a substantial part of the unheated portion of either forward side window, possibly associated with water splashing and streaming on the windshield

and/or

Unexpected decrease in speed or rate of climb.

and/or

THE FOLLOWING SECONDARY INDICATIONS :

- 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.

If one of these phenomena is observed, immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions. Apply procedure specified in the emergency procedures chapter.

- Since the autopilot may mask tactile cues that indicate adverse changes in handling characteristics, use of the

autopilot is prohibited when the severe icing defined above exists, or when unusual lateral trim requirements or autopilot trim warnings are encountered while the airplane is in icing conditions.

3.3. Into the Normal procedures section - ICING CONDITIONS add the following note which replaces the previous one : Be alert to severe icing detection.

In case of severe icing refer to emergency procedures 4.05.05.

3.4. Into the Emergency procedures section : ICING CONDITIONS- **SEVERE ICING**

DETECTION Visual cue identified with severe icing is characterized by ice covering all or a substantial part of the unheated portion of either forward side window, possibly associated with water splashing and streaming on the windshield.

and/or

Unexpected decrease in speed or rate of climb.

and/or

The following secondary indications :

- 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.

THE FOLLOWING WEATHER CONDITIONS MAY BE CONDUCTIVE TO SEVERE IN FLIGHT ICING :

- Visible rain at temperatures close to 0 degrees Celsius ambient air temperature.
- Droplets that splash or splatter on impact at temperatures close to 0 degrees Celsius ambient air temperature.

EXIT THE SEVERE ICING ENVIRONMENT :

This procedure is applicable to all flight phases from initial climb to landing. Monitor the ambient air temperature. While the 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 severe icing, as determined above, is encountered :

- Immediately increase and bug the minimum maneuver/operating icing speeds by 10 kt. Increase power up to MAX CONT, if needed.
- Request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the severe icing conditions in order to avoid an extended exposure to flight conditions more severe than those for which the airplane has been certificated.
- Avoid abrupt and excessive maneuvering that may exacerbate control difficulties.
- Do not engage the autopilot.

If the autopilot is engaged, hold the control wheel firmly and disengage the autopilot. If the flaps are extended, do not retract them until the airframe is clear of ice.

If an unusual roll response or uncommanded roll control movement is observed, maintain the roll controls at the desired position and reduce the angle of attack by :

- Pushing on the wheel as needed,
- Extended flaps to 15,

- Increasing power, up to MAX CONT if needed.

If the aircraft is not clear of ice :

- Maintain flaps 15 for approach and landing, with "reduced flaps APP/LDG icing speed" + 5 kt.

- Multiply landing distance flaps 15 by 1.06.

Report these weather conditions to Air Traffic Control.

3.5. Operators documentation must take into account the modification of the Limitations, Normal Procedures and Emergency Procedures Section 5 of the AFM.

3.6. Aerospatiale/ATR are preparing and will issue shortly AFM Revisions incorporating the above modifications. The approved revisions are considered as the means of compliance to this AD.

4. COMPLIANCE :

4.1 Within 3 days after the effective date of this AD, accomplish the requirements of paragraphs 3.1, 3.2 and 3.3 and 3.4 of this AD. 4.2 Within 15 days after the effective date of this AD, accomplish the requirements of paragraph 3.5 of this AD. 4.3. The present Airworthiness Directive replaces the paragraphs 1.1 and 1.2 of AD 1996-207-031(B)R1 dated April 21, 1999.

Note :

Inquiries regarding the technical content of this Airworthiness Directive should be made to DGAC/SFACT/N.AT, tel. : 3314109 48 79, fax : 3314109 4319.

This Revision 1 replaces AD 1999-015-040(B) dated January 13, 1999.

EFFECTIVE DATES :

Original AD : JANUARY 23, 1999

Revision 1 . MAY 1, 1999