

Boeing 737 Series Aeroplanes

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**AIRWORTHINESS DIRECTIVE**

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For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.1 (1) of CAR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

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**AD/B737/152**

**Centre Fuel Tank - Limitations**

**6/2001  
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**Applicability:** All Model 737 series aeroplanes.

**Requirement:** Revise the Limitations Section of the Aircraft Flight Manual (AFM) to include the following information:

For ground operation, centre tank fuel pump switches must not be positioned to "ON" unless the centre tank fuel quantity exceeds 1,000 pounds (453 kilograms), except when defuelling or transferring fuel.

Centre tank fuel pump switches must be positioned to "OFF" when both centre tank fuel pump low pressure lights illuminate.

Centre tank fuel pumps must not be "ON" unless personnel are available in the flight deck to monitor low pressure lights.

This revision may be accomplished by inserting a copy of this Directive into the AFM.

*Note: FAA AD 2001-08-24 Amdt 39-12201 refers.*

**Compliance:** Within seven days after the effective date of this Directive.

This Airworthiness Directive becomes effective on 10 May 2001.

**Background:** On 3 March 2001, a Boeing Model 737-400 series airplane caught fire and burned while parked at a bay at the Don Muang International Airport, Bangkok, Thailand. Although the accident investigation is ongoing and the probable cause of the accident has not been identified, the Government of Thailand, in conjunction with the United States National Transportation Safety Board, has determined that the centre tank exploded shortly after the main fuel tanks of the airplane were refuelled. It appears that the centre tank fuel pumps were operating dry (no fuel passing through them) at the time of the explosion.

This accident is similar to a 1990 centre tank explosion on a Boeing Model 737-300 airplane. The ignition source of that explosion was never identified. The centre tank fuel pumps were operating dry at the time of that explosion.

Extended dry operation of the centre tank fuel pumps, which occurred prior to both incidents, is contrary to the manufacturer's procedures for safe operation of the fuel pumps. Extended dry pump operation can result in overheating and excessive wear of the pump bearings and consequent contact between rotating and nonrotating parts of the pumps. Both overheating of the bearings and contact between rotating and nonrotating parts have the potential to create an ignition source in the form of hot surfaces or sparks. In addition, during dry operation of the pumps, ignition of vapour in a fuel pump can create a flame front that can reach the fuel tank and cause a fuel tank explosion.

This Directive is issued to prevent ignition of fuel vapours due to the generation of sparks and a potential ignition source inside the centre tank caused by metal-to-metal contact during dry fuel pump operation, which could result in a fire or explosion of the fuel tank. This Directive requires revising the AFM to prohibit extended dry operation of the centre tank fuel pumps.



Eugene Paul Holzapfel  
Delegate of the Civil Aviation Safety Authority

27 April 2001