



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# SAFO

Safety Alert for Operators

SAFO 07001  
DATE: 1/5/2007  
Flight Standards Service  
Washington, DC

[http://www.faa.gov/other\\_visit/aviation\\_industry/airline\\_operators/airline\\_safety/safo](http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo)

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*A SAFO contains important safety information and may include recommended action. SAFO content should be especially valuable to air carriers in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest.*

**SUBJECT:** VHF Navigation Antenna Failures

**Purpose:** This SAFO alerts operators of Agusta S.P.A. model A109 series helicopters of the potential for VHF navigation antenna failures causing reduction in usable range and sensitivity performance of very high frequency (VHF) omnidirectional range (VOR) and localizer (LOC) receivers.

**Background:** The FAA's Flight Standards Service, Aircraft Maintenance Division has been tracking failure reports of Dorne & Margolin, model DMN48-1 caused by high temperatures which exceed the specified design limits for this model VHF navigation antenna. These high temperatures are derived from exhaust plume circulation which passes the antenna during main rotor rotation. Antenna failure may contribute to a reduction of localizer performance, which may have been a factor in a fatal accident in 2005. Antenna failure can occur randomly and without warning until VOR or LOC is selected for display on the course deviation indicator (CDI) or horizontal situation indicator (HSI), as equipped.

**Discussion:** As a result of such failures, several DMN48-1 VHF navigation antennas have been replaced by more than one operator, and both the antenna manufacturer, as well as the helicopter manufacturer has been notified of these failure conditions. Failures may include total loss of VOR and LOC navigation capability, or the degradation of navigation performance to that which is typical of operating outside a ground station's service volume or usable area. Failures may go undetected during Global Positioning System (GPS) operations and may only be detected when the pilot selects the display of VOR or LOC navigation information.

**Recommended Action:** Directors of safety, directors of operations, chief pilots, fractional ownership program managers, training managers, and pilots operating the Agusta model A109 series helicopters equipped with the Dorne & Margolin, model DMN48-1 antenna are encouraged to closely monitor VOR or LOC performance during operations, and to discontinue operations predicated on VOR or LOC navigation upon observing any system anomaly or degradation. Additionally, affected operators authorized to conduct instrument flight rule (IFR) operations using GPS should consider limiting IFR operations to weather conditions which would allow continuation of flight to a safe landing in the event of loss of VOR or LOC navigation capability. Operators without authorization to use GPS in IFR operations should consider limiting their affected aircraft to visual flight rule (VFR) operations until the affected antenna is replaced with a type not subject to this potential failure.

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Approved by: AFS-200