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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 CASR 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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### Sikorsky S-76 Series Helicopters

**AD/S-76/73**

**Dual Inverter Wiring**

**6/2004  
DM**

Applicability: Model S-76 A, B and C helicopters with dual channel autopilot and dual inverters installed.

*Note 1: Helicopters with the following serial numbers were manufactured with the dual channel autopilot and dual inverters installed:*

**S-76 A**

760267	760300 through 760302	760366
760268	760304 through 760309	760369 through 760371
760270 through 760298	760364	760373 through 760378

**S-76 B**

760262	760393	762976 (760433)
760269	760395	760437
760299	760399	760439
760303	760403	760441 through 760445
760310 through 760363	760404	760447 through 760452
760365	760409	760454
760367	760410	760455
760368	760413	760458
760372	760414	760462
760379 through 760382	760416	760465
760387	760425	760507
760391	760427 through 760430	

**S-76 C**

760383 through 760386	760415	760453
760388 through 760390	760417 through 760424	760456
760392	760426	760457
760394	760431	760459 through 760461
760396 through 760398	760432	760463
760400 through 760402	760434 through 760436	760464
760405 through 760408	760438	760466 through 760506
760411	760440	760508 through 760526
760412	760446	

## Sikorsky S-76 Series Helicopters

AD/S-76/73 (continued)

- Requirement:
1. Determine if the No. 1 inverter is wired to the DC essential bus by carrying out the operational test specified in the Accomplishment Instructions, paragraph 3.B. of Sikorsky Aircraft Corporation Alert Service Bulletin (ASB) No. 76-24-14A, Revision A, dated 9 October 2003.
  2. If, following the Requirement 1 operational test, the No. 1 inverter is determined to be wired to the DC essential bus, accomplish the following:
    - a. Install a placard near the airspeed indicator that contains the limitation “**Maximum IMC Airspeed 120 KIAS**” and annotate this airspeed limitation in the Operating Limitation section of the Aircraft Flight Manual (AFM).

Annotating the airspeed limitation in the AFM may be accomplished by inserting a copy of this Directive in the applicable section of the AFM.
    - b. Modify the electrical wiring so that the No.1 inverter, which powers the co-pilot's Automatic Flight Control System (AFCS) computer, is wired to the No. 2 DC primary bus and the No. 2 inverter, which powers the pilot's AFCS computer, is wired to the DC essential bus by following the Accomplishment Instructions, paragraph 3.C. of the ASB.
  3. Remove the “**Maximum IMC Airspeed 120 KIAS**” placard and AFM annotation.

*Note 2: FAA AD 2004-06-04 Amdt 39-13530 refers.*

- Compliance:
- For Requirement 1 - Before further flight after the effective date of this Directive.
- For Requirement 2.a. - Before further flight after the Requirement 1 operational test is completed.
- For Requirement 2.b. - Within 30 days after the effective date of this Directive.
- For Requirement 3 - After modifying the electrical wiring in accordance with Requirement 2.b.

This Airworthiness Directive becomes effective on 28 April 2004.

- Background:
- This directive requires a test to determine if the No. 1 inverter is wired to the DC essential bus, and if so, it requires modifying the wiring so that the No. 1 inverter is wired to the No. 2 DC primary bus and the No. 2 inverter is wired to the DC essential bus. If the wiring modification is required and is not performed before further flight, then the revision of the AFM together with the installation of a placard near the airspeed indicator is also required before further flight to limit the maximum airspeed in instrument meteorological conditions (IMC).

**Sikorsky S-76 Series Helicopters**

AD/S-76/73 (continued)

These actions are intended to prevent both autopilots from disengaging following a No. 2 DC generator failure, and subsequent loss of control of the helicopter during IMC operations.



James Coyne  
Delegate of the Civil Aviation Safety Authority

21 April 2004