Airworthiness Directive Schedule

Components & Equipment

Electrical Equipment – Aircraft General

29 September 2016

Notes

1. This AD schedule is applicable to electrical equipment installed on an aircraft (related to the airframe), and these ADs should be listed in the AD logbook for the aircraft.
2. The CAA has reviewed the Electrical Equipment AD Schedule and split this schedule into two smaller AD schedules. There is now an Electrical Equipment - *Aircraft General* AD Schedule for electrical equipment installed on an aircraft (related to the airframe), and an Electrical Equipment - *Aircraft Engines* AD Schedule for electrical equipment installed on engines.
3. This AD schedule includes those National Airworthiness Authority (NAA) ADs applicable to electrical equipment installed on the aircraft airframe. NAA ADs can be obtained directly from the applicable NAA web site. The links to NAA web sites are available on the CAA web site at http://www.caa.govt.nz/Airworthiness_Directives/states_of_design.html
4. The date above indicates the amendment date of this schedule.
5. New or amended ADs are shown with an asterisk *

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DCA/ELECT/3C Ignition and Starter Switches - Inspection

Applicability: All Bendix ignition and starter switches P/N 10-126XXX series, 10-157XXX series, 10-357XXX series, also P/N 10-51104 series, 10-51150 series, 10-51160 series, 10-51180 series and 10-81388 series.

Requirement: To prevent possible switch short circuiting and engine failure due to internal fouling with black powder and brass particles, accomplish the following:

Remove the cover and inspect for freedom from fouling and wear of contacts. Any switches found fouled or having excessive wear must be removed from service before further flight. Excessive contact wear has occurred when the brass base metal is starting to show a flat surface on the moving contact dimples or the edges of fixed contacts are worn down appreciably.

Switches which do not satisfy the above inspection must be removed and overhauled per the manufacturers instructions before further flight.

Compliance: At intervals not to exceed 500 hours TIS.

Effective Date: DCA/ELECT/3B - 27 September
DCA/ELECT/3C - 6 August 1993

DCA/ELECT/6C Ignition and Starter Switches - Testing

Applicability: All Bendix ignition and starter switches P/N 10-126XXX series, 10-157XXX series, 10-357XXX series, also P/N 10-51104 series, 10-51150 series, 10-51160 series, 10-51180 series and 10-81388 series.

Requirement: To prevent possible injury to a person handling a propeller due to switch not releasing when selected past the "OFF" position and thus allowing one or both magnetos to remain alive, switches are to be tested as follows:

1. Turn switch to "OFF" and verify by feel that it is correctly seated in the detent.

2. Turn switch as far counter-clockwise as it will travel and hold it momentarily in this position.

3. Release pressure on switch taking care that no clockwise turning force is applied. Observe that the switch returns to the "OFF" position and verify that it has actually done so by feeling that the positioning spring is correctly seated in the "OFF" detent.

4. Repeat (2) and (3) above a minimum of five times and if on any occasion the switch fails to return to "OFF" it is to be given an electrical continuity test, whilst in the "past OFF" position, between the appropriate terminals. If continuity is always obtained in this position, the switch may remain in service.

Switches which fail the above test must be overhauled per the manufacturers instructions before further flight.

Compliance: At intervals not to exceed 500 hours TIS and following each switch disassembly or installation.

Effective Date: DCA/ELECT/6B - 27 September
DCA/ELECT/6C - 6 August 1993

DCA/ELECT/8 Nickel Cadmium Batteries - Inspection

Applicability: All aircraft having a primary electrical system which includes a Nickel Cadmium battery capable of being used to start the aircraft's engine or APU.

Requirement: To preclude the possibility of battery failure due to over heating which could result in a fire, accomplish the following:

Visually inspect the battery, including cell links and tops, for evidence of heat damage. Before further flight, replace any heat damaged battery with an equivalent serviceable battery or, on aircraft approved for operation without the affected battery operational, mechanically disconnect the battery at the battery terminal.

Note: The inspection no longer required when DCA/ELECT/13 has been accomplished.

Compliance: Within next 10 hours TIS, unless already accomplished within last 50 hours TIS and thereafter within the next seven days or 30 hours TIS, whichever is later following use of the battery for an engine or APU start or attempted start.

Effective Date: 31 October 1971

DCA/ELECT/9 Nickel Cadmium Batteries - Cell Replacement

Applicability: All aircraft having a primary electrical system which includes a Nickel Cadmium battery capable of being used to start the aircraft's engine or APU, and has a rating less than 50 amp hours.

Requirement: To preclude the possibility of battery failure due to over heating which could result in a fire, accomplish the following:

Replace each cell having a polystyrene cell case with an equivalent cell having a polymide (nylon) cell case or, replace any battery containing any polystyrene cell cases with a battery containing all polymide (nylon) cell cases, that is approved for aircraft use.

Compliance: Within the next 10 hours TIS.

Effective Date: 31 October 1971

DCA/ELECT/13 Nickel Cadmium Batteries - Modification

Applicability: All aircraft having a primary electrical system which includes a Nickel Cadmium battery capable of being used to start the aircraft's engine or APU.

Requirement: To preclude the possibility of battery failure due to over-heating which could result in a fire, accomplish the following:

Install (a) an approved battery charging rate control system.

or (b) an approved battery temperature sensing and over temperature warning system and provide a means and an operating procedure for disconnecting the battery from the charging source in the event of battery over temperature warning.

or (c) an approved battery failure sensing and warning system and provide a means and an operating procedure for disconnecting the battery from the charging source in the event of battery failure.

Compliance: By 1 February 1974

Effective Date: 31 October 1971

DCA/ELECT/16B Radio Installation Protection - Modification

Applicability: Model DH-89 series aircraft,

Consul aircraft,

Gemini and Messenger aircraft,

Aerovan aircraft, and

Aircraft fitted with Marconi-Elliott Avionic Systems 604 and 604A charging boards.

Note 1: No action required if already in compliance with DCA/ELECT/16 or DCA/ELECT/16A. The applicability of this AD revised to only include those aircraft affected by UK CAA ADs 1276 PRE 80, 1328 PRE 80 and 2739 PRE80.

Note 2: These aircraft have a double pole or two pole electrical wiring system, which is a two wire system with individual positive and negative cables rather than an earth return via a metal airframe. On these aircraft the negative earth radio equipment must have a fuse in both the positive and negative leads.

Requirement: To prevent an electical short circuit between the bonding and electrical systems which could result in a fire, ensure the following requirements are satisfied:

1. When negative earth radio equipment is installed in a double pole wiring system, both the negative lead and the positive lead to that equipment must be fused.

2. The fuse in the negative lead of the radio equipment must have a capacity of not less than twice that of the fuse in the positive lead and must be located near the radio equipment.

3. The modification required by this AD is equivalent to UK Air Registration Board (ARB) Modification/Radio/2 dated 15 July 1949 and is satisfied by the following modifications:

For Consul aircraft: Airspeed Technical Instruction Modification No. 103. (UK CAA AD 1276 PRE 80 refers)

For aircraft fitted with a Marconi 604 and 604A Switchboard: Comply with the negative fuse requirement per Marconi-Elliott Avionic Systems Modification No. AML 24. (UK CAA AD 1276 PRE 80 and UK CAA AD 1328 PRE 80 refer)

For Gemini and Messenger aircraft: Modification No. CMC. 441, Issue B. (UK CAA AD 1276 PRE 80 refers)

For Aerovan aircraft: Modification No. CMC 442. (UK CAA AD 1276 PRE 80 refers)

For DH 89 Rapide series aircraft: Rapide Mod. No 10 introduces a fuse in the negative lead of the radio. (UK CAA AD 2739 PRE 80 refers)

(UK CAA ADs 1276 PRE 80, 1328 PRE 80 and 2739 PRE 80 refer)

Compliance: Before the issue of a Certificate of Airworthiness, or when a major radio system modification is embodied, whichever is the sooner.

Effective Date: DCA/ELECT/16 - 30 June 1951
DCA/ELECT/16A - 30 July 2009
DCA/ELECT/16B - 29 October 2009

DCA/ELECT/21 Whelen Stobe Light Flash Tube - Modification

Applicability: All aircraft incorporating Whelan Engineering Company Inc. A427 strobe light flash tubes manufactured before 1 November 1974.

Requirement: To preclude possible ignition of flammable fluids or vapours by arcing at the strobe light flash tube, install on the base of affected tubes a pressure sensitive vinyl label conforming to Whelan Engineering Company Inc. drawing A-30052, revision 1, dated 15 October 1974, or later FAA approved revision. Scotch Brand Type 33+ vinyl plastic electrical tape or approved equivalent tape can be used in lieu of the vinyl label.

If vinyl plastic electrical tape is used, it must be formed to cover the rivet at the rear of the flash tube without covering the identifying part number. If the flash tube incorporates a label, the new label or tape may be installed directly over the old label. Install the label or tape only when the label or tape and the flash tube are at a temperature above 50 deg. F.

Compliance: By 20 June 1975

DCA/ELECT/40 Mechanical Products Inc. Circuit Breakers - Removal

Applicability: The following Mechanical Products Inc. circuit breakers:-

Series P/N	Military Designations	Rating Amps.	Manufacturers Date Code
4001	MS22073	1 thru 5	8501 thru 8636
4200	MS26574	½ thru 5	8430 thru 8636
4310-001/-019	MS3320	1 thru 5	8605 thru 8636
8500	Nil	1 thru 5	8514 thru 8636

Where the first two digits of the date code are the year of manufacture and the second two digits are the week in that year.

Requirement: To prevent possible loss of essential equipment, electrical fire, or electrical shock hazard, remove affected circuit breakers from service.

Note 1: Affected circuit breakers may be identified by their blue or black base colour.

Note 2: Requirement does not apply to circuit breakers produced or installed prior to 23 July 1984 (thirtieth week of 1984), or to circuit breakers which have been inspected by the manufacturer, found defect free, marked with a white inverted Z or a T painted on the terminal end, and have an additional date code with an 'R' prefix. e.g. unit may have an additional date code of say R8642, where R designates a retest by Mechanical Products Inc.

(FAA AD 87-06-09 refers)

Compliance: Within the next 50 hours TIS.

Effective Date: 18 March 1988

DCA/ELECT/41 SELA Fluorescent Lighting Lamp Connectors & Power Units - Inspection

Applicability: Fluorescent lighting lamp connectors, P/N 3185-1A, and Remote Power Units (RPU), P/Ns TR 992, TR 992A, TR 992-1, TR992-3, TR 992-4 and TR 992-5, installed in, but not limited to AMD-BA Model Falcons 10, 20, 50, 900, and Embraer aircraft.

Requirement: To prevent smoke, fire and possible electrical shock, accomplish the requirements in parts (a) and (b) in FAA AD 90-07-08R1.

(FAA AD 90-07-08R1 refers)

Compliance: 1. Accomplish part (a) in FAA AD 90-07-08R1 within the next 30 days and thereafter prior to every take off in conditions where cabin fluorescent lights are used, until part (b) of the AD is accomplished.

2. Accomplish part (b) in FAA AD 90-07-08R1 within the next 3 months.

Effective Date: 25 May 1990

DCA/ELECT/42 SAFT 1606-1 Batteries - Inspection

Applicability: All SAFT 1606-1 batteries fitted with temperature probes, which may be installed in, but not limited to Aerospatiale AS 350 and AS 355 helicopters, or held as spares.

Requirement: To prevent failure of the battery temperature indication system accomplish the following:

Verify the presence of the battery shunt between terminals 2 and 3 of the female plug on the battery temperature probe cable. If the shunt is missing, install a shunt P/N 161-211 and ensure correct operation of the temperature probe system per Aerospatiale SB No 01-29.

(Bureau Veritas AD F-1990-198-056R1 refers)

Note: Aerospatiale SB No 01-29 pertains to the subject of this AD.

Compliance: 1. For batteries fitted to aircraft, within the next 50 hours TIS.

2. For batteries not installed in aircraft, before installation.

Effective Date: 22 March 1991

DCA/ELECT/44A Ignition Switch Lubrication and Starter Diode - Inspection

Applicability: ACS and Gerdes ignition switches, which may be installed in, but not limited to; Piper PA-38-112, Schweizer G-164 series and Cessna models listed in Cessna SEB91-5R1.

Requirement: To prevent failure of ignition switches accomplish the following:-

1. Inspect ignition switch to detect wear and corrosion, and lubricate the switch per ACS SB92-01, or Cessna SEB91-5R1. If wear or corrosion is detected, prior to further flight, replace the switch per the SB.

2. Inspect the ignition switch installation to determine if a diode or other surge suppressor is installed on the starter solenoid. If one is not, prior to further flight, install a starter solenoid diode per ACS SB92-01, or attachment to Cessna SEB91-5R1.

Note: ACS ignition switches that do not have a "start" position (models A-510-1 and A-510-5) or were manufactured on or after 20 February 1989, and have not accumulated 2000 hours TIS, need not be lubricated. The manufacture date is stamped on the switch body. These switches are identifiable by red paint in the screw heads on the back of the switch. However, manufacturer lubricated switches that have a "start" position , but do not have a starter diode, must be inspected and modified.

(FAA AD 93-05-06 refers)

Compliance: 1. Within next 100 hours TIS and thereafter at intervals not to exceed 500 hours TIS.

2. Within next 100 hours TIS.

Effective Date: DCA/ELECT/44 11 June 1993
DCA/ELECT/44A 10 May 1996

The following Airworthiness Directives have been cancelled due to their purpose is now fulfilled. It is not necessary to list these cancelled ADs in the AD logbook for the aircraft.

*** DCA/ELECT/43A Cancelled - Purpose fulfilled**

Note: Piper SB 836A refers - Aluminium Wire Inspection and Replacement.

Effective Date: 29 September 2016

*** DCA/ELECT/45 Cancelled - Purpose fulfilled**

Note: Precise Flight SB PL9303001 dated 10 March 1993, or later approved revision refers – Pulselite Units Replacement.

Effective Date: 29 September 2016