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SERVICE BULLETIN

OPTIONAL

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within project no. NZ AE/223

MODEL AFFECTED:	EASA-TCDS No. EASA.A.606, Issue 3, 01.April 2019
APPLICABILITY:	<p>Criterion A) Aircrafts Viper SD-4 RTC aircrafts</p> <p>Criterion B) NAV LIGHTS & STROBE: Each Viper SD-4 RTC aircraft equipped by Ultra Galactica Green; P/N: AVE-WPSTG-54G Mod (4) and Ultra Galactica Red; P/N: AVE-WPSTR-54G Mod (4) installed during aircraft manufacturing, repair, maintenance or general overhaul or any other exchange action.</p> <p>Criterion C) Automatic Circuit Breaker (ACB): Each Viper SD-4 RTC aircraft equipped by E-T-A 2215-G111-P1F1-S0-5A ACB on position STROBE and E-T-A 2215-G111-P1F1-S0-3A ACB on position NAV LIGHTS installed during aircraft manufacturing, repair, maintenance or general overhaul or any other exchange action.</p>
SUBJECT:	Exchange of STROBE (E-T-A 2215-G111-P1F1-S0-5A) ACB and NAV LIGHTS (E-T-A 2215-G111-P1F1-S0-3A) ACB on Viper SD-4 RTC aircrafts equipped with AVE-WPST[G/R]-54G Mod (4) series Navigation / Position / Strobe LED lights. ATA System: 24-60 Electrical Load Distribution.
COMPLIANCE:	Implement this Service Bulletin when replacement of the original ACB connected to STROBE and NAV LIGHTS circuits was identified as practical and it could suppress repetitive accidentally breaking (switching-off) one of mentioned above lights or both to eliminate the disturbing function of respective ACB during aircrafts operations without electric supply by generator and lower voltage of onboard electric power bus.
DESCRIPTION:	TOMARK, s.r.o. as holder of EASA.A.606 identified that some Viper SD-4 RTC aircrafts, in service and also currently in production, equipped with P/N: AVE-WPSTG54G Mod (4) and P/N: AVE-WPSTR-54G Mod (4) navigation/strobe lights and also equipped with E-T-A 2215-G111-P1F1-S0-5A and E-T-A 2215-G111-P1F1-S0-3A ACBs, that secures STROBE lights and NAV LIGHTS circuits respectively, showed unreliable operation of identified ACBs and their accidental breaking (automatic switching-off) without obvious failure of the lights, their cabling or installation.
REASON:	Based on instable functioning of STROBE and NAV LIGHTS ACBs identified on limited number of Viper SD-4 RTC aircrafts the aircraft producer recommends the change of respective ACBs by the ACBs of the same series with different switching characteristics for that aircrafts for which operators/owners/maintenance identified instable functioning of above mentioned ACBs. E-T-A 2215-G111-P1F1-S0-5A could be replaced by E-T-A 2215-G111-P1T1-S0-5A and E-T-A 2215-G111-P1F1-S0-3A could be replaced by E-T-A 2215-G111-P1T1-S0-3A.
MANPOWER:	Persons with approved qualifications for the corresponding aircraft type. EASA Part M or Part 145 Maintenance organization
LABOR TIME:	1 person, approx. 4÷5 working hours
MATERIAL:	<p>Required tools for replacement:</p> <ul style="list-style-type: none"> • 10 mm socket spanner • 8 mm open-ended/ring spanner • 10 mm open-ended/ring spanner • Phillips screwdriver • Flat screwdriver • Size 2 hex screwdriver

MATERIAL:	<u>Required parts for replacement:</u>							
	NEW part P/N (Viper SD-4RTC order/stock No.)	Qty per aircraft	Description	OLD part P/N (Viper SD-4RTC order/stock No.)				
	E-T-A 2215-G111-P1 T1 -S0-5A (5030-0491)	1	Automatic circuit breaker	E-T-A 2215-G111-P1 F1 -S0-5A (5030-0519)				
	E-T-A 2215-G111-P1 T1 -S0-3A (5030-0564)	1	Automatic circuit breaker	E-T-A 2215-G111-P1 F1 -S0-3A (5030-0521)				
	<u>Special tooling / compounds:</u> In accordance with the relevant TOM-TC-01-AMM /2/							
	<u>Interchangeability of parts:</u>							
	<table border="1"> <tr> <td>“STROBE” - E-T-A 2215-G111-P1F1-S0-5A</td> <td>Has to be replaced by E-T-A 2215-G111-P1T1-S0-5A</td> </tr> <tr> <td>“NAV LIGHTS” - E-T-A 2215-G111-P1F1-S0-3A</td> <td>Has to be replaced by E-T-A 2215-G111-P1T1-S0-3A</td> </tr> </table>				“STROBE” - E-T-A 2215-G111-P1 F1 -S0-5A	Has to be replaced by E-T-A 2215-G111-P1 T1 -S0-5A	“NAV LIGHTS” - E-T-A 2215-G111-P1 F1 -S0-3A	Has to be replaced by E-T-A 2215-G111-P1 T1 -S0-3A
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“NAV LIGHTS” - E-T-A 2215-G111-P1 F1 -S0-3A	Has to be replaced by E-T-A 2215-G111-P1 T1 -S0-3A							
REFERENCES:	/1/ TOM-TC-01-AFM Viper SD-4 RTC Aircraft Flight Manual /2/ TOM-TC-01-AMM Viper SD-4 RTC Maintenance Manual							
WEIGHT and BALANCE:	Change of weight - none Moment of inertia - unaffected							
ELECTRICAL LOAD DATA:	Not affected							
SUPPORT INFORMATION:	Any possible support for Viper SD-4 RTC aircrafts contact: TOMARK s.r.o., Strojnícka 5, 080 01 Prešov, Slovak republic https://www.tomarkaero.com/kontakt/ , E-Mail: service@tomarkaero.com							

ACCOMPLISHMENT ISNTRUCTIONS:

CAUTION !

- ! Before the replacement of the circuit breakers, shut down the engine and wait for a decrease of its temperature, if the engine was warmed up for the operating/flight temperature.
- ! Park the airplane in a sufficiently large parking area.
- ! To prevent accidental movement, secure with a parking brake in the airplane's cockpit (see the TOM-TC-01-AFM /1/l) or secure the wheels with chocks.

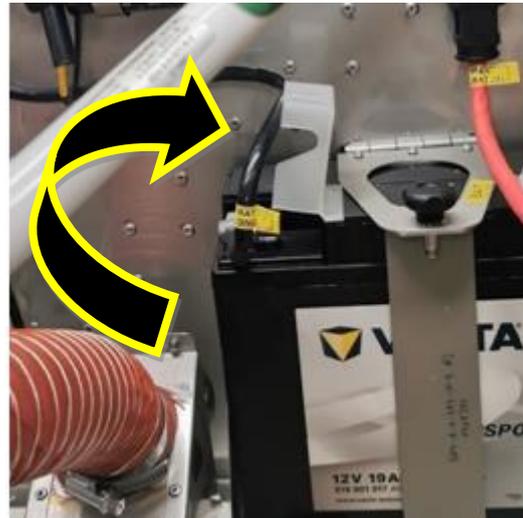
1. Remove the top engine cowling according to chapter 71-00-01 of the TOM-TC-01-AMM. /2/
Using a Phillips screwdriver, unlock the 2 screws at the front of the upper engine cowling, between the propeller spinner and the intake openings



Release the upper cowling from the crews and pull it forward (in the flight direction). Then lift it evenly on both sides.

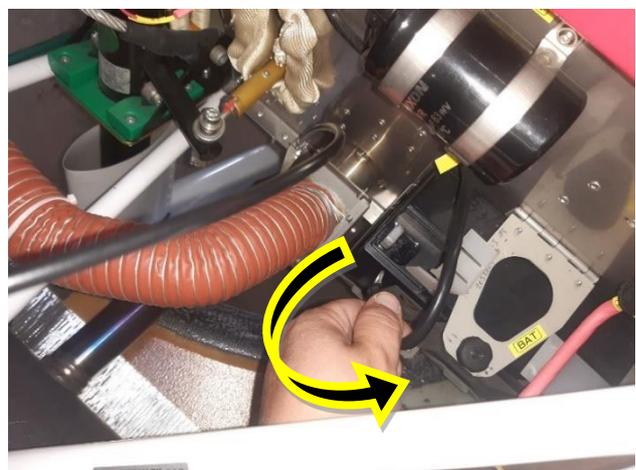
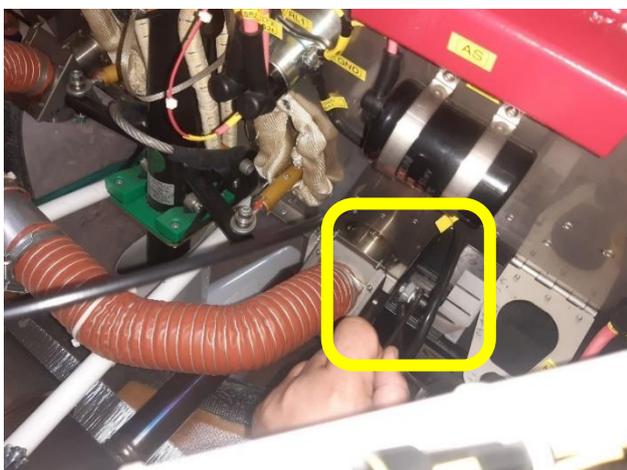


2. On the left side (in the flight direction) at the bottom of the firewall, there is the aeroplane's battery. Unlock and tilt aside the protective plastic covers.



Disconnect battery terminals from onboard electric bus before you start working with the electric system!
Loosen and unscrew the hex screw with a nut on the minus pole of the battery – the black cable on the right side of the battery (in the flight direction). Use a 10 mm open-ended/ring spanner for the loosening.

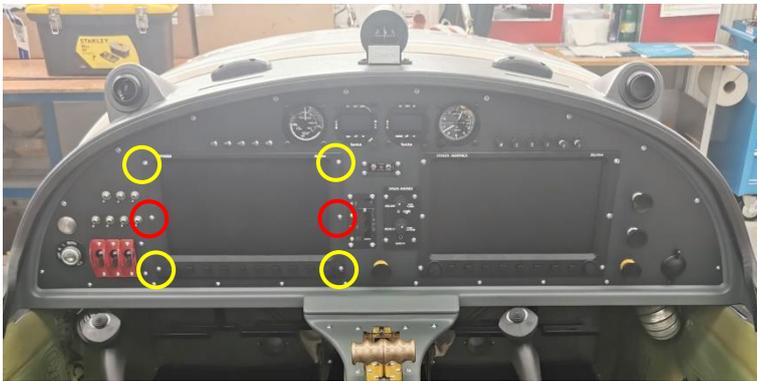
Place the loosened black cable away from the battery's minus pole, so that its accidental release and a restored contact with the minus pole of the battery is prevented.



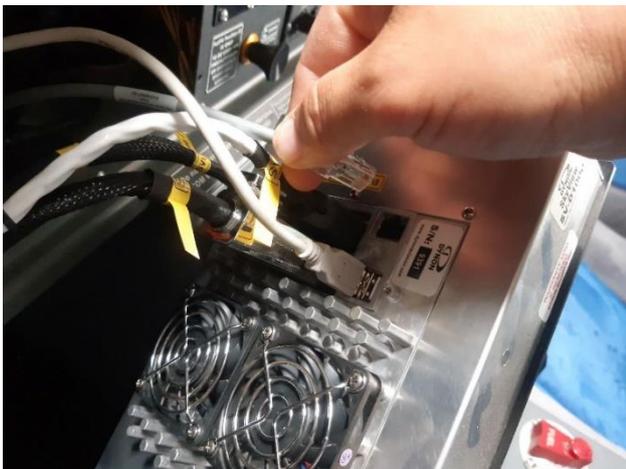
- 3. Open the aeroplane's canopy (cockpit). For better access, it is recommended to sit in the pilot's seat (left side in the flight direction) during the replacement of the circuit breakers. The E-T-A circuit breakers are located on the left side of the instrument panel (in the flight direction), left of the SkyView EFIS display.



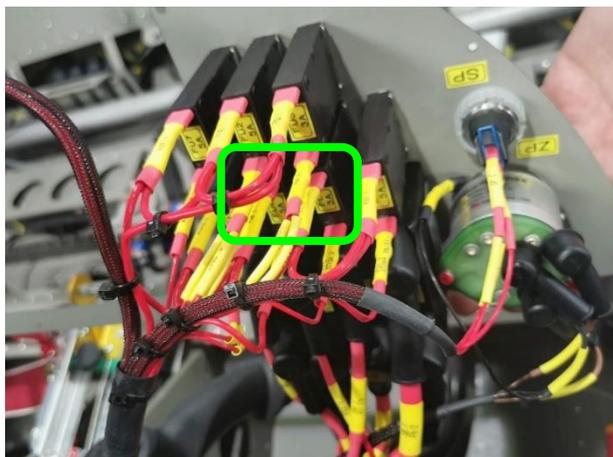
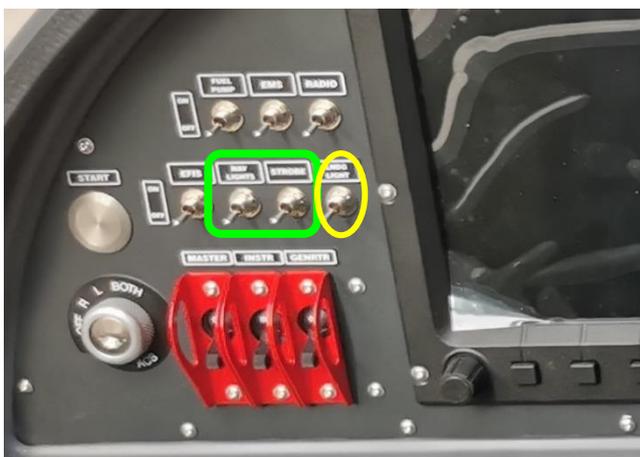
- 4. Loosen the 4 screws in the corners of the SkyView display with a size 2 hex screwdriver. When unscrewing the 2 middle screws, hold the SkyView display to prevent its falling and damage!



- 5. Take the SkyView display out of the instrument panel. On its rear side, after releasing the plastic lock, disconnect the Ethernet connector, then the USB connector, and all 3 data D-sub connectors (SVL10DB9B-1, SVL10DB9B-2, SVL10DB37B), secured by screws on the connectors' bodies. Put the SkyView display on the co-pilot's seat (right one in the flight direction). You will thus get sufficiently large handling space for the replacement of the circuit breakers.



- 6. The original circuit breakers are in the lower row, marked with labels as NAV LIGHTS and STROBE. When seen from the back side, the circuit breakers on the instrument panel are marked as FL (NAV LIGHTS) and FU6 (STROBE).



- Through the SkyView display mounting opening, disconnect the wires from the 3 circuit breakers on the right in the row (in the flight direction), i.e. besides the NAV LIGHTS and STROBE, also disconnect the LNDG LIGHT by pulling forward (in the flight direction) for better access. Disconnect 2 wires from each circuit breaker, one from the top contact and one from the bottom one.



- Loosen and unscrew the nuts of all 3 circuit breakers on the right in the row from the front side of the instrument panel with an 8 mm socket spanner or open-ended/ring spanner. Hold the circuit breakers on the back side, so that they do not fall out and get damaged.



- The circuit breakers are marked on their back sides with labels containing their marking and amperage: "NAV LIGHTS" = FL / 3A, "STROBE" = FU6 / 5A, "LNDG LIGHT" = FU12 / 1A

NOTE

Circuit breaker FU12/1A for the LNDG LIGHT is not going to be changed. The original one will be used.

Instead of OLD circuit breakers:

- I) *FU6/5A* (2215-G111-P1 **F1**-S0-**5A**) for the *STROBE*,
 - II) *FL/3A* (2215-G111-P1 **F1**-S0-**3A**) for the *NAV LIGHTS*,
- use the NEW circuit breakers marked with the same labels:
- 1) *FU6/5A* (2215-G111-P1 **T1**-S0-**5A**) for the *STROBE*,
 - 2) *FL/3A* (2215-G111-P1 **T1**-S0-**3A**) for the *NAV LIGHTS*.



10. Mount the NEW circuit breakers on the instrument panel in the right order from the back. Along with the mounting, connect the wires according to the markings on them and the order of the circuit breakers. Be careful - The order of the circuit breakers for the mounting on the instrument panel is not changed.



On the front side, put on the washer and the tooth washer, and screw on and tighten the nut with an 8 mm spanner.

11. After checking the correctness of the connection and mounting of the circuit breakers, reconnect the SkyView EFIS display. Reconnect all 3 data D-sub connectors (SVL10DB9B-1, SVL10DB9B-2, SVL10DB37B) and screw in and tighten their securing screws. Reconnect the USB connector and the Ethernet connector.



12. Insert the SkyView display into the opening in the instrument panel with the right orientation and hold it by hand so that it does not fall out and get damaged. Attach it with the two middle socket screws.



Screw in the remaining corner socket screws along the perimeter of the display.

13. Check the battery state. Check the battery charge level. If needed charge the battery fully.

- 14. In the engine compartment, reconnect the minus pole of the battery (disconnected black cable) and tighten the screw on the minus pole of the battery. Cover the battery contact with the original plastic cover.



- 15. Perform pre-flight inspections. Follow the instructions as presented in section 4.2 Pre-flight Inspections of the TOM-TC-01-AFM /1/.

Pay close attention to the sites affected by the work carried out in accordance with this bulletin and navigation, strobe and landing lights functionality.

- 16. Put the upper engine cowling on the slide-in locks, press it backwards, and attach and lock it at the front with the original screws.

Install the upper engine cowling according to chapter 71-00-01 of the TOM-TC-01-AMM /2/.



- 17. Make records to the airplane documentation (Service Log-Book).
- 18. Perform a check test flight to verify the correct functioning of all demounted, replaced and mounted parts.
- 19. Send information about the bulletin implementation to airplane manufacturer with evidence; e.g. copy/photocopy of records in airplane documentation (Service Log-Book).

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