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Rotax 914 log file analysis

RECORDING - 14:35:09 - 15:01:37

DATE	START - END	RECORDING TIME
21.10.	**14:35:09 - 15:01:37**	**26:28 min**

ENGINE RUN TIME	SAMPLING RATE	FORMAT
26:28 min	**Ø 13 Hz**	**TLR 4.6 LOG**

Source files: 10211435.LOG, 10211440.LOG, 10211445.LOG, 10211450.LOG, 10211455.LOG, 10211501.LOG

RATING

WARNING `14:39:47` 5800 up to max. 6200 rpm (Prop. 2,387 - 2,551) for max. 1 minute (max. 5,839 1/min (Prop. 2,403), 51.2 s)

TIME BY THROTTLE POSITION

RANGE	%	TIME	SHARE	
Idle	0-5	7:54 min		29.8 %
Taxi	5-40	4:12 min		15.9 %
Part load	40-90	1:49 min		6.8 %
Continuous power	90-106	5:42 min		21.5 %
TCU transition range	106-112	1.3 s		0.1 %
Take-off power	112-115	6:50 min		25.8 %

Caution: TCU transition range (108-110 %)

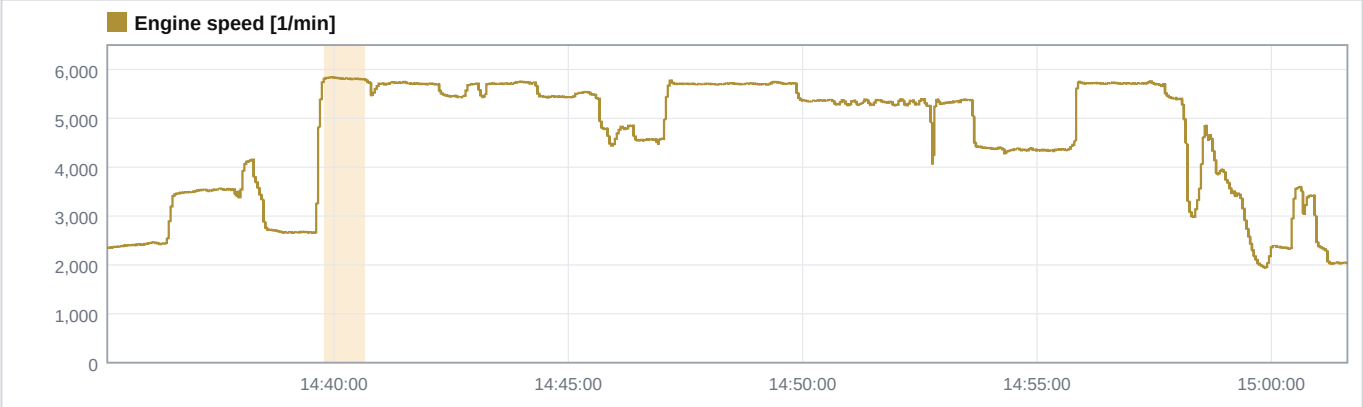
The throttle range between 108 % and 110 % must be avoided and passed through quickly when opening and closing the throttle, as unstable boost control and controller oscillations can occur in this range.

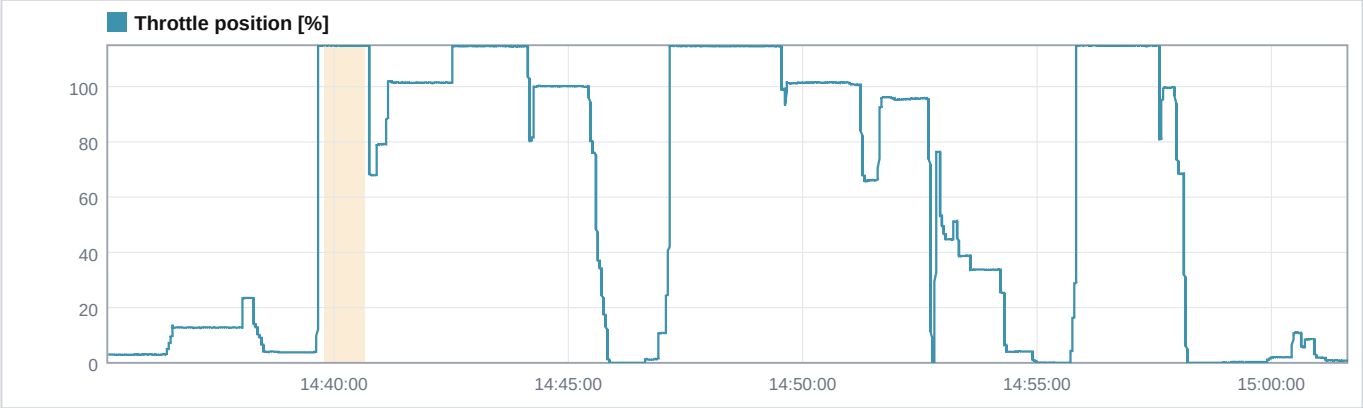
CHANNELS

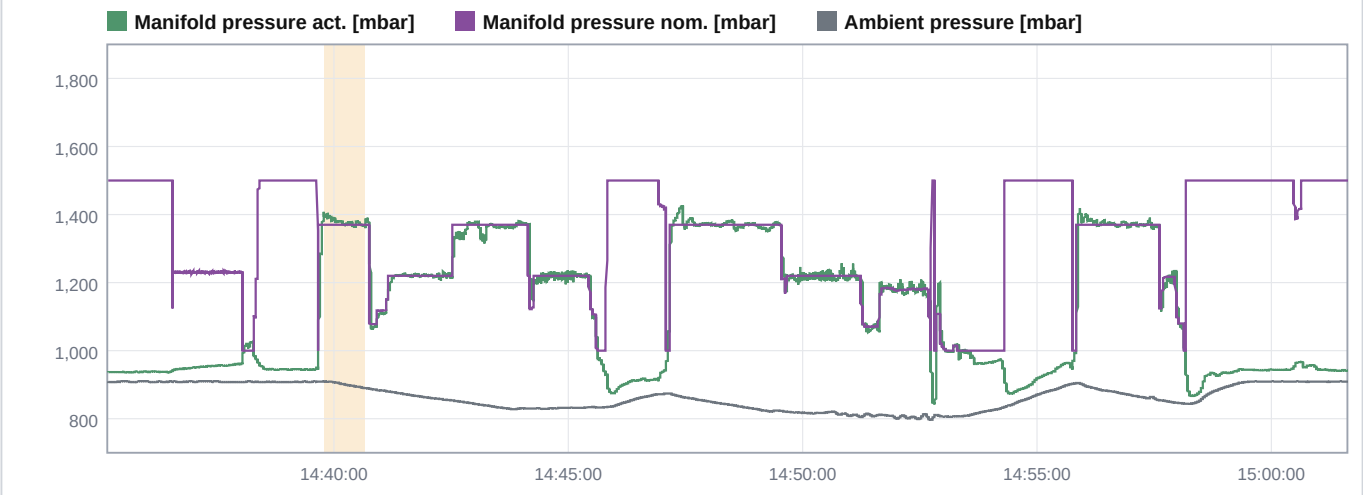
CHANNEL	MIN	MAX		MAX. AT
Engine speed	1,940 (798)	**5,839 (2,403)**	1/min (Prop.)	14:39:57
Throttle position		**115.0**	%	14:39:40
Ambient pressure	797	**910**	mbar	14:39:47
Manifold pressure act.	842 (24.9)	**1,426 (42.1)**	mbar (inHg)	14:47:24
Manifold pressure nom.	1,000 (29.5)	**1,500 (44.3)**	mbar (inHg)	14:35:09
Servo position	56.3	**101.3**	%	14:42:31
Airbox temperature	19.9	**83.3**	°C	14:44:07
Height above start	27	**3,546**	ft	14:52:43

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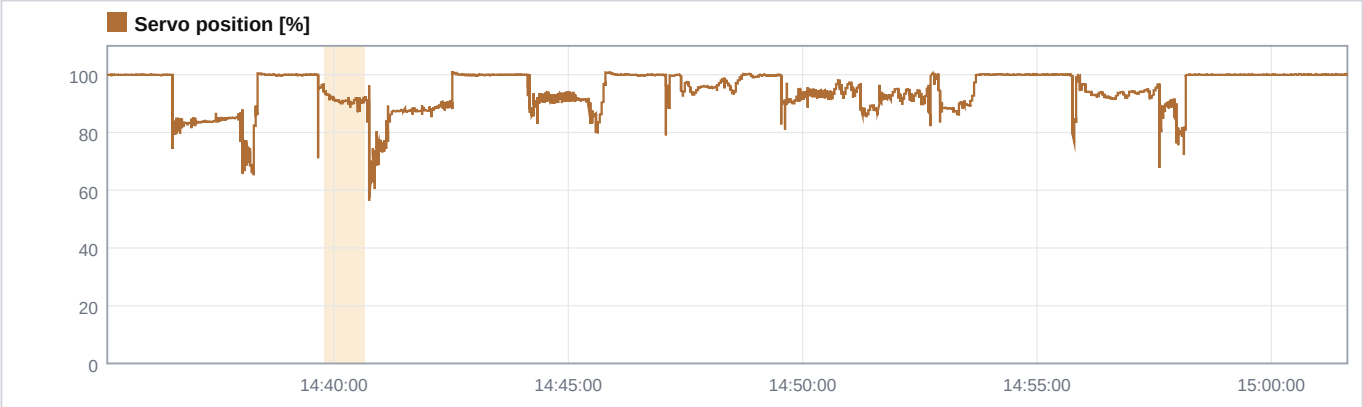
CHARTS - 14:35:09 - 15:01:37

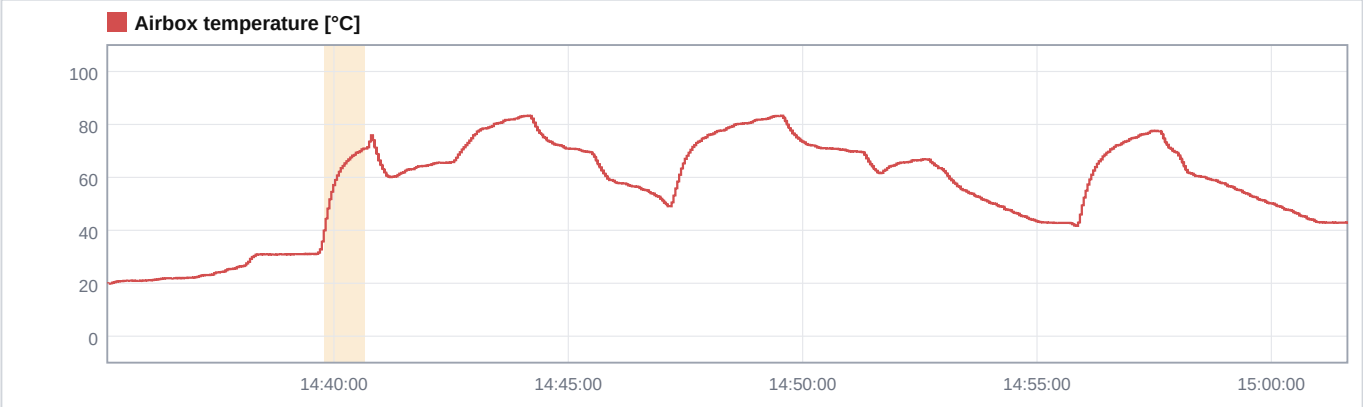


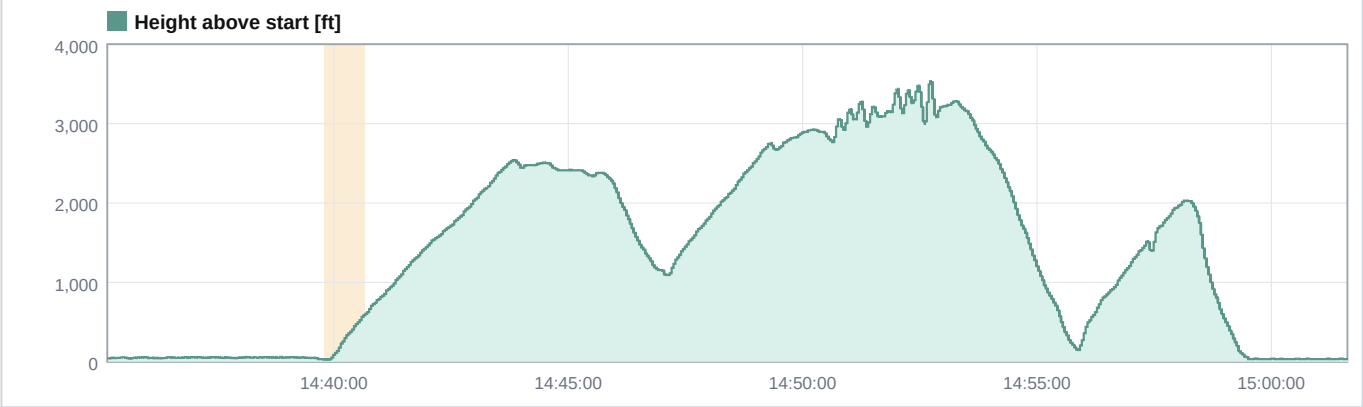




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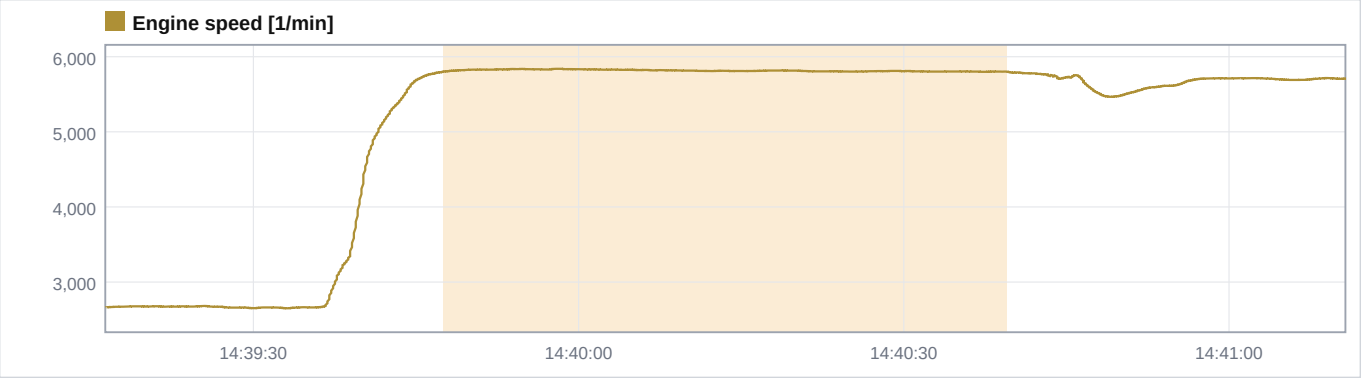


Height above start: calculated from the ambient pressure (ISA standard atmosphere) relative to the pressure at the beginning of the recording. Field elevation and current air pressure (QNH) are not contained in the log file, so the height starts at 50 ft.

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RATING - DETAILS

14:39:47 5800 up to max. 6200 rpm (Prop. 2,387 - 2,551) for max. 1 minute (max. 5,839 1/min (Prop. 2,403), 51.2 s)



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TCU MEMORY - TCU_MEMORY_20261021_151614.TXT

ENGINE NUMBER	OPERATING HOURS	BOOST TIME	READ OUT
444444	**322:31 h**	**0:00 h (0.0 %)**	**21.10.2026 15:16**

RATING

ALARM	322:02 h	More than 6500 rpm (max. 7,221 1/min (Prop. 2,972), operating time 322:02 h)
WARNING	322:04 h	5800 up to max. 6200 rpm (Prop. 2,387 - 2,551) for max. 1 minute (max. 5,996 1/min (Prop. 2,467), operating time 322:04 h)
ALARM	322:09 h	More than 6500 rpm (max. 6,567 1/min (Prop. 2,702), operating time 322:09 h)
WARNING	322:10 h	Above 1550 up to 1800 mbar (max. 1,566 mbar (46.2 inHg), operating time 322:10 h)
WARNING	322:11 h	5800 up to max. 6200 rpm (Prop. 2,387 - 2,551) for max. 1 minute (max. 5,993 1/min (Prop. 2,466), operating time 322:11 h)
WARNING	322:14 h	Above 1550 up to 1800 mbar (max. 1,643 mbar (48.5 inHg), operating time 322:14 h)

MAX. OPERATING PARAMETERS

CHANNEL	MAXIMUM	OPER. TIME	ALERTS	ALERT TIME
SPEED	**7221** rpm (Prop. 2,972)	322:02	5	0:00:13
AIRBOX_PRESS.	**1643** mbar (48.5 inHg)	322:14	3	0:00:06
AIRBOX_TEMP.	**37** °C	322:01	0	0:00:00

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Fault report and required actions (from TCU data and fault memory)

LIMITS

LIMIT		RESULT
Exceeding of max. admissible engine RPM		
5800 up to max. 6200 rpm (Prop. 2,387 - 2,551) for max. 1 minute	WARNING	exceeded 3x
5800 up to max. 6200 rpm (Prop. 2,387 - 2,551) for more than 1 minute	ALARM	not exceeded
6200 up to max. 6500 rpm (Prop. 2,551 - 2,675) for max. 1 minute	ALARM	not exceeded
6200 up to max. 6500 rpm (Prop. 2,551 - 2,675) for more than 1 minute	ALARM	not exceeded
More than 6500 rpm (Prop. 2,675)	ALARM	exceeded 2x
Overboost (manifold pressure)		
Above 1550 up to 1800 mbar (45.8 - 53.2 inHg)	WARNING	exceeded 2x
Above 1800 mbar (53.2 inHg)	ALARM	not exceeded
Airbox temperature		
Airbox temperature above 96 °C	WARNING	not exceeded

EXCEEDING OF MAX. ADMISSIBLE ENGINE RPM

General note:
Any exceeding of the max. admissible engine RPM must be entered by the pilot into the engine log book stating duration, extent of overspeeding and pertinent detail.

ALARM · More than 6500 rpm (Prop. 2,675)

OCCURRENCES

at operating time 322:02 h	max. 7,221 1/min (Prop. 2,972)
at operating time 322:09 h	max. 6,567 1/min (Prop. 2,702)

REQUIRED ACTIONS

- [ ] **1.** The whole engine must be inspected, repaired or overhauled in accordance with the BRP-Rotax instructions for continued airworthiness.
- [ ] **2.** Check cylinder differential pressure.
- [ ] **3.** Check that the push-rods are straight.
- [ ] **4.** Check if piston had contact with valve.
- [ ] **5.** Check for out of roundness of valves.
- [ ] **6.** Replace the crankshaft. The crankshaft has to be inspected according to the current Overhaul Manual (OHM) for the respective engine type. Overhaul Manual (OHM) and its appendix is available for any appropriately rated person or entity on request and by following the standards of the original manufacturer.
- [ ] **7.** Inspect all systems for correct functioning.
- [ ] **8.** Detailed inspection of affected engine components.

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WARNING · 5800 up to max. 6200 rpm (Prop. 2,387 - 2,551) for max. 1 minute

OCCURRENCES

log file 21.10. 14:39:47	max. 5,839 1/min (Prop. 2,403), 51.2 s
at operating time 322:04 h	max. 5,996 1/min (Prop. 2,467)
at operating time 322:11 h	max. 5,993 1/min (Prop. 2,466)

REQUIRED ACTIONS

- ☐ **1.** No action is required.

OVERBOOST (MANIFOLD PRESSURE)

General note:
Up to 1550 mbar (45.8 inHg) no warning.

WARNING · Above 1550 up to 1800 mbar (45.8 - 53.2 inHg)

OCCURRENCES

at operating time 322:10 h	max. 1,566 mbar (46.2 inHg)
at operating time 322:14 h	max. 1,643 mbar (48.5 inHg)

REQUIRED ACTIONS

- ☐ **1.** Caution overboost - please check the turbocharger control: see MMH 912-914 Chapter 76-10-00 TURBOCHARGER CONTROL UNIT (TCU).

Actions carried out by | Date | Signature