

**NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, D.C. 20594**

April 30, 2010

Addendum 2 to:

Airworthiness Group Chairman's Factual Report

Of September 10, 2009

NTSB ID No.: LAX08PA259

A. ACCIDENT:

Location: Weaverville, California
Date: August 05, 2008
Time: About 7:41 PM Pacific Daylight Time (PDT)
Aircraft: Sikorsky S-61N Helicopter

B. SUMMARY

This addendum to the factual report summarizes the NTSB's findings of events involving JFC-26 fuel control units (FCU) within the Federal Aviation Administration (FAA) Service Difficulty Report (SDR¹) database.

C. DETAILS OF THE INVESTIGATION:

The Airworthiness Group queried the SDR database for GE CT58-140 engine events in which the reported part causing the difficulty was an FCU. The search of the entire database revealed a total nine reports from the beginning of the year (1996) to the present (Reference Table 1).

¹ A Service Difficulty Report (SDR) is a report of the occurrence or detection of each failure, malfunction, or defect as required by 14 CFR 121.703 and 121.704.

Table 1 Results of SDR database search

SDR Unique Control number	Difficulty Date	Aircraft	FCU Part Number Serial Number	Time Since Overhaul (hours)	Problem Description
CA970311010	09/16/1996	S61L	7257255	1,672	ENGINE WILL NOT MEET MINIMUM ACCEPTABLE TORQUE. LOW POWER, LOW T5, HIGH NG. NO CHANGE ON MANUAL THROTTLE. FUEL CONTROL UNIT WAS THE PART IDENTIFIED AS CAUSING THE DIFFICULTY.
CA970311012	09/17/1996	S61L	7257255	3,103	ENGINE WILL NOT TOP. CANNOT OBTAIN ACCEPTABLE TORQUE. TAKE OVER MANUAL SPEED LEVER AND ENGINE IS NORMAL. FUEL CONTROL UNIT WAS THE PART IDENTIFIED AS CAUSING THE DIFFICULTY.
CA971113034	10/23/1997	S61L	7257255	254	NR 2 ENG FAILED TO RESPOND TO THE POWER DEMAND. EMERGENCY THROTTLE WAS USED AND ENGINE RESPONDED. FCU REPLACED.
CA000110023	10/20/1999	S61N	6003T91P13	3,204	FUEL CONTAMINATION WAS FOUND WITHIN THE FCU AND THE FUEL CENTRIFUGAL PURIFIER. THE PURIFIER HAS BEEN SENT FOR TEAR DOWN.
CA991229022	12/8/1999	S61N	7257256	12	NR2 ENGINE WOULD NOT RESPOND PROPERLY TO INCREASED POWER SETTING. FCU REPLACED BUT SUBSEQUENT FAILURE 50 HRS LATER. FCU'S AND FUEL SAMPLES WERE SENT FOR INVESTIGATION. AWAITING FOLLOW UP REPORT. CALL RECEIVED FROM OPERATOR SPECIFYING MATERIAL BREAKDOWN FROM FILTER. FAA ALERT 43-16A AND CORRECTIVE ACTION ADVISORY TO BE ISSUED TO OPERATORS.
CA020430009	04/10/2002	S61N	7257255	N/A	AT 3.9 HOURS AFTER ENGINE INSTALLATION THE ENGINE PARTIALLY DECELERATED IN FLIGHT. THE ENGINE RESPONDED TO EMERGENCY THROTTLE AND WAS LANDED SAFELY. FUEL CONTROL WAS REPLACED.
CA090820007	08/16/2009	S61N	7257255	3,531	THE NUMBER ONE ENGINE WAS UP TO OPERATING RPM THEN DEACCELERATED TO FLIGHT IDLE FOR NO REASON. THE FOLLOWING UNITS WERE REPLACED TO TROUBLE SHOOT THE DEFECT. FUEL CONTROL P/N725725-5 S/N 45275 TSO 3531. PILOT VALVE P/N 6028T23G01 S/N ESS30030 TSN: 17726.4 TSO 685.1 FUEL PUMP P/N 5002T83P02 S/N 1616A TSN 31772.9 TSO 2667.9 (TC# 20090820007)
2009FA0000960	11/18/2009	S61N	7257255	18	DELIVERED BY THE NTSB AND CARRIER FOR INSPECTION. INITIAL DISASSEMBLY OF THE FCU, SVA, AND PV SHOWED CONTAMINATION FROM AN UNKNOWN EXTERNAL SOURCE (WHICH MAY STILL BE PRESENT ON IN-SERVICE AIRCRAFT) AND POSSIBLE CONTAMINATION

					FROM THE CENTRIFICAL FUEL PURIFIER (WHICH WAS NOT DELIVERED WITH THE UNIT FOR EXAMINATION). DISASSEMBLY OF THE UNIT REVEALED THAT THE MAIN FUEL CONTROL FILTER HAD ALSO BEEN REMOVED PRIOR TO DELIVERY TO CHI HOWEVER THERE WAS ONE SMALL METALLIC NON-MAGNETIC SLIVER OF DEBRIS FOUND IN THE MAIN FUEL CONTROL FILTER HOUSING. OUR INITIAL EVALUATION AND DISASSEMBLY OF THESE UNITS REVELED NO EVIDENCE OF MECHANICAL FAILURE OR IMPROPER ASSEMBLY.
CHIR0297	11/20/2009	S61N	7257255	N/A	ON 11/18/09 OUR REPAIR STATION PERFORMED AN INSPECTION ON A FUEL CONTROL P/N 7257255, PILOT VALVE P/N 6028T23G01, THAT WERE IN AN FAR135.415 SERVICE DIFFICULTY REPORT CONTROL NUMBER CA090820007, INCIDENT DATE 8/16/09, REPORT DATE 10/23/2009 6:57:53 AM. OUR INITIAL INSPECTION REVEALED THIS FCU WAS CONTAMINATED FROM AN EXTERNAL SOURCE (MOST LIKELY CAME FROM FUEL PURIFIER WHICH WAS NOT PROVIDED FOR INSPECTION).THERE WERE NO MECHANICAL IRREGULARITIES, OR SIGNS OF IMPROPER ASSEMBLY.

Mike Hauf
Airworthiness Group Chairman