



NATIONAL TRANSPORTATION SAFETY BOARD

**Office of Aviation Safety
Western Pacific Region**

MAINTENANCE RECORDS EXCERPTS

**NTSB Accident: WPR17FA041
Accident Date: December 26, 2016**

This document contains 15 embedded images

A. ACCIDENT

Location: Fresno, California
Date: December 26, 2016
Aircraft: Petrus Express S90, N176PA, Serial # 80842
NTSB IIC: Michael Huhn

B. ACCIDENT SUMMARY

On December 26, 2016, about 1318 Pacific standard time, an experimental amateur-built Express S-90, N176PA, was destroyed when it departed controlled flight and impacted terrain shortly after takeoff from runway 30 at Sierra Sky Park Airport (E79, Fresno, California). The private pilot/owner and his passenger received fatal injuries. Visual meteorological conditions prevailed at the time of the accident.

C. AIRFRAME RECORDS

1137

Aircraft Record General Information

Manufacturer PETRUS Model S90
Serial 80842 Registration Number N176PA
Date of Manufacture 4/5/2004

Engine(s) currently installed:

Manufacturer LYCOMING Model I0540C4B5 Serial RL-5525-48
Manufacturer _____ Model _____ Serial _____

Propeller(s) currently installed:

Manufacturer HARTZELL Model HC-C34R-1 RF
HUB Model _____ Serial _____ Serial DY4219A
Blade Model F7590 Serial J19621 Serial J23772 Serial J19622
Blade Model _____ Serial _____ Serial _____ Serial _____

↑
AROVZ PROT REMOVED 10 FEB 2012, 375.4 HOURS

Figure 1 - Airframe Log Front Page

YEAR: 2004 DATE	TOTAL TIME IN SERVICE	Current Weight and Balance Information			
		Empty Weight	Empty C.G.	Useful Load	Remarks
4/5	Q	1953.0	23% MAC	MAX GROSS 3200.0	MODEL S90 KIT BUILT by Wayne Petun. SERIAL #80842 COMPLETED 4/5/04. INSPECTED AND DETERMINED SAFE FOR FLIGHT [REDACTED] 4/5/04
		154334.390	TOTAL MOMENT		
04/05/04	0.0	I find that this aircraft meets the requirements for the certification requested and have issued a Special Airworthiness Certificate dated 04/05/04. The next condition inspection is due April 05 [REDACTED] LARRY RUNDLE			

Figure 2 - Airframe Log Initial Entry

YEAR: DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations
				Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
2/10/2002	375.4			REMOVED HARTZELL HC-22YK-1RF HC-22YK-1RF S/N DY4219A ? INSTALLED HARTZELL PIN HC-22YK-1/848A-131N AW-93 IAW HARTZELL INSTALLATION INSTRUCTIONS. USED PROP T.T. 15/12/19. TEST FLIGHT Req'd. TSMON [REDACTED] At [REDACTED]
2/14/2002	377.4			PERFORMED DYNAMIC PROP BALANCE IAW MICROVIB BALANCE INSTRUCTIONS. [REDACTED] At [REDACTED]

Figure 3 - Airframe Log Propeller Entry

LEFT

YEAR: DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
8/26/14	TACH: 413.5			THE FOLLOWING WAS COMPLETED @ PERFORMANCE ONE ANIMATION FROM JAN 2013 - FEB 26 2014. ALL WORK PERFORMED INTO APPLICABLE REGULATIONS (FAR.3) AND MANUFACTURER INSTRUCTIONS:
1) ENGINE: 2420.5 TT / 811.8 SMOH				• REMOVED LYCOMING 10-540-C4BS S/N RL-5535-48
2) PROP: 816.6 SMOH				• REMOVED HARTZELL HC-C3YK-1/8468A-4 S/N AN-93
(P) = NEW				• MODIFIED ENGINE MOUNT: CROSSOVER N/C TUBE
				• INSTALLED LYCOMING 10-540-K1ES D S/N L-11658-48
				(SMOH 811.8 HRS) / MODIFIED TURBO INSTALL
				• INSTALLED HARTZELL HC-C3YK-1EF S/N DY2838A
				(SMOH 816.6 HRS)
				CONT...

Figure 4 - Airframe Log Engine Change

YEAR: DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
CONT...				• FABRICATED: INSTALLED TURBO INLET TUBE ASSY
				• CYLINDER PLATE FABRICATION: INSTALLATION
				• OIL COOLER MOUNT FABRICATION: INSTALLATION
				• INSTALLATION OF HOLLEY IN-LINE FUEL FILTER
				• CABIN HEAT/FRESH AIR VALVE ASSY. INSTALLATION
				• RE-CONFIGURE/SET-UP OF ALL CONTROL CABLES
				• RE-CONNECTION OF ENGINE PROBES: XAUERS
				• INSTALLATION / WIRING OF TIT: IT PROBES
				• COMPLETE RE-MODELING / MODIFICATION OF UPPER: LOWER ENGINE COUPLING
				• INSTALLATION OF ENGINE COMPART: EXHAUST EXIT HEAT PROTECTION
				CONT...

Figure 5 - Airframe Log Engine Change (continued)

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YEAR: DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
CONT...				• PERFORMED MULTIPLE RUN-UPS: TAXI TEST • RE-PROGRAMMED ENGINE MONITOR / ZFI'S ASSY'S • NEW WEIGHT: BRIMOC2 • CONDITION INSPECTION
I CERTIFY THIS AIRFRAME HAS BEEN INSPECTED IN THE SCOT: DETAIL OF FAR 43, APP. D, AND IS IN A CONDITION FOR SAFE OPERATION AT THIS TIME. PHASE I FLIGHT TESTING REQ'D AT THIS TIME. [Redacted Signature] AP [Redacted]				

Figure 6 - Airframe Log Engine Change (continued)

YEAR: DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
8/1/14	430.0			REMOVED HARTZELL PROPELLER HC-C3YR-1RF, S/N DY2828A, AND INSTALLED HC-C3YR-1F, S/N DY4219A (ORIGINAL PROPELLER) AND HARTZELL INSTALLATION INSTRUCTIONS. [Redacted Signature] AP [Redacted]
8/1/14 - 9/25/14				THE FOLLOWING WORK WAS PERFORMED @ [Redacted Signature] ONE AVIATION: * REMOVAL OF TURBO SYSTEM: RELATED COMPONENTS (SEE ENGINE LOG) * RELOCATION OF OIL COOLER TO LEFT SIDE ENGINE COMPARTMENT CONT...
				HOBBS 430 - 443.8 CURRENT HOBBS 443.8 CURRENT PROP 375.4 CURRENT ENG 842.1

Figure 7 - Airframe Log Propeller & Turbo Changes

YEAR: DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
				* FABRICATED NEW NACA ASSY FOR OIL COOLER
				* CLOSED OUT / RMVD OLD OIL COOLER NACA ASSY
				* ADDED ENLARGED FOWLING EXIT VENTS
				* INSTALLED L/R FRESH AIR VENT : NACA ASSY'S FOR PILOT / CO-PILOT
				* FABRICATED / INSTALLED CABIN HEAT ASSY : BLOWER FAN
				* BODYWORKED : PRIMED ABOVE COMPOSITE MODIFICATIONS.
				AIRCRAFT READY FOR CONTINUED FLIGHT TESTING.

Figure 8 - Airframe Log Propeller & Turbo Changes (continued)

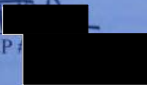
YEAR: DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
				Tach/Hobbs: <u>501.1</u> Registration #: <u>176PA</u> I certify that this aircraft has been inspected on <u>27 MAY 16</u> in accordance with the scope and detail of 14 CFR part 43, Appendix D and found to be in a condition for safe operation.  A&P  Performance One Aviation  

Figure 9 - Most Recent Annual Inspection

D. ENGINE RECORDS

DATE 19__	RECORDING TACH TIME	TODAYS FLIGHT	TOTAL TIME IN SERVICE	DESCRIPTION OF INSPECTIONS, TESTS, REPAIRS AND ALTERATIONS ENTRIES MUST BE ENDORSED WITH NAME, RATING AND CERTIFICATE NUMBER OF MECHANIC OR REPAIR FACILITY. (SEE BACK PAGES FOR OTHER SPECIFIC ENTRIES.)
2/26/74				INSTALLED ENGINE ON PETROS 3-90
	ACTT: 413.5			(EXPRESS) S/N 80842, NITOPA. RMINA TWIN
	END SMOM: 811.8			TURBO & EXHAUST ASSY. INSTALLED CUSTOM
	PROP SMOM: 816.6			SINGLE EXIT / SINGLE TURBO EXHAUST
				SYSTEM. MODIFIED / INSTALLED SINGLE
				TURBO & MOUNT ASSY. INSTALLED NEW
				MCCORMICK FUEL PUMP. INSTALLED MODIFIED
				FUEL SERVO ELBOW WITH EXISTING FUEL
				SERVO. FABRICATED / INSTALLED SERVO/TURBO
				PISTON W/ ACT AIR DOOR. INSTALLED NEW
				OIL & FUEL HOSES. PERFORMED FUEL & OIL
				PRESSURE CHECKS. SERVICED ENGINE WITH
				12 QT 15W50 & NEW FILTER. PERFORMED
				GROUND RUNS INCLUDING STATIC RUNS. (KID
				OK. I CERTIFY THIS ENGINE HAS BEEN INSPECTED AND
				THE SCOPE: DETAIL OF FAR 43, APP D, AND IS IN A CONDITION
				FOR SAFE OPERATION AT THIS TIME. [REDACTED] [REDACTED]

Figure 10 - Accident Engine Installation

DATE 19__	RECORDING TACH TIME	TODAYS FLIGHT	TOTAL TIME IN SERVICE	DESCRIPTION OF INSPECTIONS, TESTS, REPAIRS AND ALTERATIONS ENTRIES MUST BE ENDORSED WITH NAME, RATING AND CERTIFICATE NUMBER OF MECHANIC OR REPAIR FACILITY. (SEE BACK PAGES FOR OTHER SPECIFIC ENTRIES.)
8/1/14	- 9/25/14			REMOVED TURBO, EXHAUST, JEANVOIGE PUMP, INTAKE DUCTING, REPAIRED OIL LINES, & CABLE CONNECTIONS. INSTALLED NEW GUMMER EXHAUST FOR ENGINE TO BE A NON-TURBO ENGINE (DUE TO LACK OF PERFORMANCE). CROOKER PERFORMED 13.8 HRS OF FLIGHT TESTING AND ALL ENGINE PARAMETERS AND PERFORMANCE VERIFIED WITH LYCOMING OPERATING LIMITATIONS. [REDACTED]
TACH 430.0	- 443.8			
CURRENT TACH	443.8			
CURRENT EGT	500.1			
9/25/14		443.8	HORBS	REMOVED OIL & REPLACED OIL FILTER, SERVICED W/ 10ATS 15W50 AEROSHELL [REDACTED]

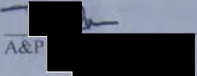
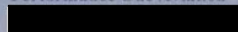
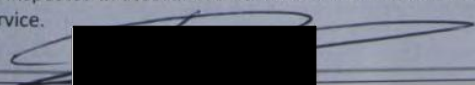
DATE	RECORDING TACH TIME	TODAYS FLIGHT	TOTAL TIME IN SERVICE	DESCRIPTION OF INSPECTIONS, TESTS, REPAIRS AND ALTERATIONS ENTRIES MUST BE ENDORSED WITH NAME, RATING AND CERTIFICATE NUMBER OF MECHANIC OR REPAIR FACILITY. (SEE BACK PAGES FOR OTHER SPECIFIC ENTRIES.)					
				Tach/Hobbs: <u>501.1</u> Registration #: <u>176PA</u> I certify that this engine has been inspected on <u>27 May 16</u> in accordance with the scope and detail of 14 CFR part 43, Appendix D and found to be in a condition for safe operation.  A&P  Performance One Aviation  VICMA, A/L 02412 					
RED-TAIL AVIATION 4150 AVIATION DRIVE MADERA, CA 93637 (559)675-9100 MADERA AIRPORT <table border="1"> <tr> <td>DATE: 08 Sept 2016</td> <td>REG: N176PA</td> <td>LOG BOOK ENTRY</td> <td>HOBBS: 546.3</td> <td>W/O: 2016069</td> </tr> </table> Comply with a 50 hour oil change and service. Drain oil and remove filter, cut open removed filter- no contamination found. Install a new CH48109-1 filter and service with Aeroshell 15W-50 oil. Perform ground run to check for oil leaks- none found. <u>Maintenance Release</u> I certify that this engine was repaired and inspected in accordance with the current FARs rules of the Federal Aviation Regulations and was found Airworthy for return to service. Jose D. S. Diaz A&P 					DATE: 08 Sept 2016	REG: N176PA	LOG BOOK ENTRY	HOBBS: 546.3	W/O: 2016069
DATE: 08 Sept 2016	REG: N176PA	LOG BOOK ENTRY	HOBBS: 546.3	W/O: 2016069					

Figure 12 - Most Recent Engine Entries

E. PROPELLER RECORDS

DESCRIPTION OF ALL OPERATIONS
PERTAINING TO AIRWORTHINESS DIRECTIVES,
SERVICE BULLETINS, SERVICE LETTERS,
& MINOR ADJUSTMENTS

DATE	TACH TIME	DESCRIPTION OF WORK	SIGNATURE
8/26/14		INSTALLED ON PETRUS S-90 (EXPRESS) S/N 80842. PROP SMOH: 816.6 W/176 PA, W/ CUSTOM SPINNER. I CERTIFY ACTT: 413.5 THIS PROPELLER HAS BEEN INSPECTED AND THE ENG SMOH: 811.8 Scope: DETAIL OF FAR 43, APP. D, AND IS IN A CONDITION FOR SAFE OPERATION AT THIS TIME.	[REDACTED]
8/1/14		REMOVED THIS PROPELLER FROM PETRUS TACH 430.0 S-90 (EXPRESS) S/N 80842. HAZ. REMOVED PROP SMOH 833.1 MODIFIED SPINNER ASSY [REDACTED]	[REDACTED]

Figure 13 - Propeller Installation

F. TIME SUMMARY (from log entries)

DATE	HOBBS	AF EVENT	ENG EVENT	ENG SMOH	ENG TT	PROP EVENT	PROP SMOH	PROP TT
4/5/2004	0.0		IO 540C485 RL-5525-48					
2/10/2012	375.4					Htzll HC-C2YK-1/8468A-43 sn AW-93	1211.9	
2/6/2014	413.5		InstlId IO 540 K1E5 SN 11658-48	811.8		Inst Htz HC-C3YR-1RF SN DY2828A	816.6	
8/1/2014	443.8		Rmvd Turbo system	842.1		Inst HC-C3YR-1F SN DY4219A	833.1	375.4
5/27/2016	501.1	Annual						
9/8/2016	546.3		O+F					

Figure 14 - Summary of Log Times

G. WEIGHT & BALANCE

PERFORMANCE ONE AVIATION, INC.
[REDACTED]
MESA, AZ 85215
[REDACTED]

Performance One
AVIATION

PESTRUS DAVID WAYNE S-90 (EXPRESS S-90)
N176PA
Weight & Balance information
DATE: 3/13/15 TACH TIME: 464.1
CG RANGE 74.7" TO 85"
MAX TAKEOFF WEIGHT: 3300 LBS
MAX LANDING WEIGHT: 3200
DATUM: FORWARD FACE OF FIREWALL IS FS34

ITEM	WEIGHT LBS	ARM IN	MOMENT LBS.IN	GALLONS
LEFT MAIN GEAR	868	90.75	78771.00	
RIGHT MAIN GEAR	870	90.75	78952.50	
NOSE WHEEL	425	18.75	7968.75	
EMPTY WEIGHT	2163	76.60	165692.25	

Empty Weight 2163
Empty Weight C.G.: 76.60
Gross Weight: 3300
Useful Load: 1137

NOTE: Empty weight includes 9 qts of oil

I certify I have weighted and performed the above calculations on the aircraft noted above.

NAME DAVID WAYNE PESTRUS [REDACTED]

SIGNATURE [REDACTED]

SCALES CALIBRATED BY A TO Z SCALES & CALIBRATION | AZ STATE REG# 1875
MODEL #3-0057-GA (217)
CALIBRATION DATE 05-13-2014 (NEXT CALIBRATION DUE 05-13-2015)

Figure 15 - Most Recent Weight & Balance