



NATIONAL TRANSPORTATION SAFETY BOARD

**Office of Aviation Safety
Western Pacific Region**

CABIN CONTENTS and DOCUMENTATION

**NTSB Accident: WPR16LA093
Accident Date: April 17, 2016**

Examination Date: May 19, 2016

This document contains 12 embedded photographs
Photos courtesy Lycoming, NTSB, and Textron

A. ACCIDENT

Location: Avalon, CA
Date: April 17, 2016
Aircraft: Cessna 172K, N7133G, Serial # 17258833
NTSB IIC: Michael Huhn

B. EXAMINATION PARTICIPANTS:

Michael Huhn
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C. SUMMARY

Examination of the recovered airframe and engine was conducted on May 19, 2016 at the facilities of Southwest Aircraft Recovery at Corona Airport (KAJO), Corona, California. The recovered wreckage included numerous pages of airplane and flight documents, as well as a GPS device. These items are documented in this report.

D. OTHER DOCUMENTATION

Numerous pages of airplane documentation, and some GPS hardware, were recovered with the wreckage. These included the following item, and are addressed/documented in this report.

- Registration
- Appareo Stratus GPS
- Flight Logs
- Discrepancy Logs
- Fuel Slips
- Weight and Balance

1.0 Registration Information

The most recent FAA Aircraft Registration Renewal Application found in the airplane listed five owners, but did not include the accident pilot. The accident pilot had purchased his share of the airplane in February 2016. A revision to the FAA registration had been filed with the FAA to reflect his ownership, but had not completed processing by the FAA as of the date of the accident.

2.0 Appareo Stratus

An Appareo brand Stratus 2S GPS device was recovered in the wreckage. The pilot reported that he had been using the device during the accident flight. The device was sent to the NTSB Recorders Laboratory in Washington DC for data download.



Figure 1- Recovered Device (front)



Figure 2 - Recovered Device (rear)

3.0 Airplane-Specific Checklists

A ring-bound set of laminated, 'homemade' checklists were found in the airplane. Examination of the approach speed and flap setting information indicated that it was in agreement with the manufacturer's published values.

Cessna 172 K **N7133G** Airspeeds

NORMAL TAKEOFF

1. Runway CENTERLINE ALIGNED(C.A.)
2. Throttle FULL POWER, CHECK INST.
3. Rotate 55KTS...(60MPH)
4. Climb Speed(Vy) 71KTS...(82MPH)

SHORT FIELD TAKEOFF

1. Flaps 10°
2. Runway END OF RUNWAY(C.A.)
3. Throttle FULL POWER, BRAKES, CHECK INST.
4. Rotate 55KTS...(60MPH)
5. Climb Speed to 50'(Vx) 59KTS...(68MPH)
6. Climb Speed after 50'(Vy) 71KTS...(82MPH)

SOFT FIELD TAKEOFF

1. Flaps 10°
2. Runway ALIGNED(NO Brakes, Pitch Up)
3. Throttle FULL POWER, CHECK INSTRUMENTS
4. Rotate 55KTS...(60MPH)
5. Obstacle(Vx) 59KTS...(68MPH)
6. No Obstacle(Vy) 71KTS...(82MPH)

CRUISE

1. Airspeed AS DESIRED
2. Power Set 2450-2650 RPM
3. Mixture LEAN (65%-75%)
4. Trim Set for Level Flight
5. Engine Inst./Vacuum/Ammeter CHECK
6. Heading Indicator RESET
7. Comm/NAVs SET

TART
CHES
RPM
HECK
ON
ON
SET
VED
CT
ON
N, UP
HTLY
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Figure 3 - Checklist Speed Page (front)

PRE-LANDING

1. Normal(Flaps Up) 60-70KTS...(70-80M
2. Normal(Flaps Down) 55-65KTS...(65-75M
3. Short Field 60KTS...(69M

STALL SPEEDS

1. Flaps UP, Power OFF 50KTS...(57M
2. Flaps DOWN, Power OFF 43KTS...(49M

Figure 4 - Checklist Speed Page (back)

4.0 Flight Logs

Pages from the owner-maintained airplane flight logs indicated that the accident pilot last flew the airplane on March 5 2016 for 1.9 hours. The airplane was apparently 'run up' for 0.2 hours on March 12, and then next flown a total of 1.7 hours in two flights by another co-owner, on April 15 and 16 2016. The next flight was the accident flight.

Date	PIC	TACH		Flight Time	Refueled		Payment Method		Amount Totals	
		In	Out		Yes	No	33G	Personal	Fuel	Dollar
2 Jul		602.5	601.8	0.7	✓		✓		7.3	
9 Jul		603.2	602.5	0.7	✓		✓		6.9	
11 Jul		604.5	603.2	1.3	✓		✓	✓	9.6	
16 Jul		605.3	604.5	0.8	✓		✓		9.7	51.95
23 Jul		606.0	605.3	0.7	✓		✓		8.2	43.87
9 Aug		607.2	606.0	1.2	✓		✓		11.5	
15 Aug		607.2	608.1	0.9	✓		✓		6.9	
23 Aug		608.8	608.1	0.7	✓		✓		7.2	
7 Sep		609.4	608.8	0.6	✓		✓			
10 Sep		610.1	609.4	0.7	✓		✓		7.1	
12 Sep		611.0	610.1	1.1	✓		✓		?	
22 Sep	P	611.4	611.0	0.4	✓		✓			
24 Sep		612.1	611.4	0.7	✓		✓			
29 Sep	F	616.2	612.1	4.1	✓		✓	✓	23.55	109.04
30 Sep		619.3	616.2	3.1	✓		✓	✓	11.7	66.11
1 Oct	D	620.0	619.3	0.7	✓		✓			
3 Oct	P	620.9	620.0	0.9	✓		✓			
21 Oct		621.8	620.9	0.9	✓		✓			
5 Nov		622.5	621.8	0.7	✓		✓		6.5	
12 Nov		623.2	622.5	0.7	✓		✓		4.4	
2016 8 Jan		623.6	623.2	0.4						
16 Jan	P	624.4	623.6	0.8	✓		✓			
17 Jan	R	625.5	624.4	1.1		✓				
23 Jan	P	627.0	625.5	1.5	✓	✓	✓			
30 Jan	P	628.9	627.0	1.9	✓		✓			
6 Feb	P	629.9	628.9	1.4	✓		✓			
10 Feb		631.0	629.9	1.1	✓		✓			
12 Feb	P	632.3	631.0	1.3	✓		✓			
13 Feb		634.3	632.3	2.0	✓		✓			
22 Feb	P	635.6	634.3	1.3	✓		✓			
26 Feb	P	636.7	635.6	1.1		✓				
27 Feb		637.7	636.7	1.0			✓			
28 Feb	P	638.5	637.7	0.8						
28 Feb	W	639.0	638.5	0.5	✓		✓			
5 Mar	F	640.9	639.0	1.9	✓		✓			
12 Mar	P	641.1	640.9	0.2		✓				

Figure 5 - Next to Last Flight Log Page

[illegible]

5.0 Fuel Slips

Fuel slip and flight log data indicated that the airplane was fueled with 8.8 gallons on April 15, and 7.0 gallons on April 16. The data did not indicate the timing of either of those two fueling events relative to the two flights on those days. The accident pilot did not indicate the departure fuel quantity.

Order # _____

AirFlite
Long Beach, CA 90807
Unicom-129.375

FS# **254888**

CUSTOMER ESCAP TRUCK NO. 29 DATE 4/15/16

N# 7133G TYPE _____ TIME 16:08

FUEL: 100LL JETA _____ GALS 8.8

PRIST: Y N

METER READINGS	
E	13449.82
B	13448.24
T	8.8

OIL TYPE: _____ / _____ QTS@\$ _____

N# _____ TYPE _____ TIME _____

FUEL: 100LL JETA _____ GALS _____

PRIST: Y N

METER READINGS	
E	
B	
T	

OIL TYPE: _____ / _____ QTS@\$ _____

N# _____ TYPE _____ TIME _____

FUEL: 100LL JETA _____ GALS _____

PRIST: Y N

METER READINGS	
E	
B	
T	

OIL TYPE: _____ / _____ QTS@\$ _____

FUEL	<u>8.8</u>	GALS @	\$	
OXYGEN SERVICE		UNIT CANS @	\$	
OIL		QTS @	\$	
SALES TAX		%		
TIE DOWN		DAYS @	\$	
GPU				
TOTAL		\$		

SERVED BY: [Signature] RECEIVED BY: [Signature]

CREDIT CARD IMPRINT

ITEM#	#OFQTS
AS100	
AS100PLUS	
AS100W	
AS15W/50	
AS20W/50	
MOBIL JET2	
MOBIL JET254	
TURBO 2380	
TOTAL	

Figure 7 - Fuel Slip April 15

Order # _____

AirFlite
Long Beach, CA 90807
Unicom-129.375

FS# **255015**

CUSTOMER Escap TRUCK NO. 25 DATE 04/16/16

N# 7133G TYPE C-172 TIME 16:00

FUEL: 100LL JETA GALS 7.0

PRIST: Y N

METER READINGS	
E	31983.72
B	31983.02
T	7.0

OIL TYPE: _____ QTS@\$ _____ = _____

N# _____ TYPE _____ TIME _____

FUEL: 100LL JETA GALS _____

PRIST: Y N

METER READINGS	
E	
B	
T	

OIL TYPE: _____ QTS@\$ _____ = _____

N# _____ TYPE _____ TIME _____

FUEL: 100LL JETA GALS _____

PRIST: Y N

METER READINGS	
E	
B	
T	

OIL TYPE: _____ QTS@\$ _____ = _____

FUEL	<u>7.0</u>	GALS @	\$ <u>47.6</u>
OXYGEN SERVICE		UNIT CANS @	\$
OIL		QTS @	\$
SALES TAX		%	
TIE DOWN		DAYS @	\$
GPU			
TOTAL		\$	

SERVED BY: [Signature] RECEIVED BY: _____

CREDIT CARD IMPRINT

ITEM#	#OFQTS
AS100	
AS100PLUS	
AS100W	
AS15W/50	
AS20W/50	
MOBIL JET2	
MOBIL JET254	
TURBO 2380	
TOTAL	

Figure 8 - Fuel Slip April 16

6.0 Discrepancy Logs

The discrepancy log sheet found in the airplane indicated that the last discrepancy that was entered was for an electrical power problem on March 12 2016. The record indicated that the voltage regulator was replaced as the corrective action.

80#4

AIRCRAFT MAINTENANCE RECORD]

N# 7133G		OIL CHANGE DUE:		ANNUAL INSPECTION DUE:	
DISCREPANCIES			ACTION TAKEN		
DATE 14 Mar 2015	TACH TIME 2590.3	DATE 17 Mar 2015	TACH TIME 2590.1		
Severe engine miss.		Fuel system check for water, debris.			
		Flight test 0.7 hr, no discrepancy			
		Return to Service			
		RECORDED BY DJ	AP [REDACTED]	COMPLETED BY [REDACTED]	
DATE 7133G	TACH TIME 2634.3	DATE	TACH TIME		
13 Feb. 2016		RESTRICTION, temporary. Baggage door			
Rear cargo door lock		to remain closed and locked. DO NOT OPEN			
in op.					
		RECORDED BY [REDACTED]	COMPLETED BY		
DATE 12-MAR 2016	TACH TIME 2641.15	DATE 15 Apr 2016	TACH TIME 2641.15		
During run up Ammeter		Replace voltage regulator			
shows a slight discharge					
(very occasional charge)					
		RECORDED BY R [REDACTED]	COMPLETED BY [REDACTED]		
DATE	TACH TIME	DATE	TACH TIME		
		RECORDED BY	COMPLETED BY		
DATE	TACH TIME	DATE	TACH TIME		
		RECORDED BY	COMPLETED BY		
DATE	TACH TIME	DATE	TACH TIME		
		RECORDED BY	COMPLETED BY		

Figure 9 - Discrepancy Log Last Page

7.0 Weight and Balance

Three separate weight and balance sheets were found in the airplane. None were marked regarding their currency/validity, and only one was dated. Two presented the same values.

Page Description	Date	EW	EW Moment	EWCG
"Sample Loading Problem"	None	1408.7	54.116	38.4
"WBPROB.XLS"	None	1383.1	52.9589	38.29
"Operational Data"	1/1/98	1383.1	52.95	38.3

7133G

SAMPLE LOADING PROBLEM	SAMPLE AIRPLANE		YOUR AIRPLANE	
	Weight (lbs.)	Moment (lb. -ins. /1000)	Weight (lbs.)	Moment (lb. -ins. /1000)
1. Licensed Empty Weight (Sample Airplane) . . .	1306	47.6	1408.7	54.116
2. Oil (8 qts. - Full oil may be assumed for all flights).	15	-0.2	15	-0.2
3. Fuel (Standard - 38 Gal at 6#/Gal).	228	10.9		
Fuel (Long Range - 48 Gal at 6#/Gal).				
4. Pilot and Front Passenger	340	12.6		
5. Rear Passengers	340	24.8		
6. Baggage (or Passenger on Child's Seat)	71	6.7		
7. TOTAL WEIGHT AND MOMENT	2300	102.4		
8. Locate this point (2300 at 102.4) on the center of gravity moment envelope, and since this point falls within the envelope, the loading is acceptable.				

ARM=38.4

4-5

Figure 10 - Weight and Balance Sheet (1 of 3)

WBPROB.XLS

AIRCRAFT LOADING PROBLEM					WEIGHT	arm	MOM
BASIC EMPTY WEIGHT & MOMENT					1383.1	38.29	52.9589
FUEL		40	6		240	47.8	11.472
PILOT & FRONT PAX					370	37	13.69
REAR PAX						73	0
BAGGAGE					50	95	4.75
OIL 8.0 QTS.					15	-13.3	-0.1995
			C/G				
TOTAL WEIGHT & MOMENT					2058.1		82.6714

Figure 11 - Weight and Balance Sheet (2 of 3)

WEIGHT & BALANCE
OPERATIONAL DATA
01/01/98

LICENSED EMPTY WEIGHT-----2300 LBS.

BASIC EMPTY WEIGHT-----1383.1 LBS.

USEFUL LOAD (no fuel)-----916.9 LBS.

USEFUL LOAD (full fuel)-----676.9 LBS.

EMPTY WEIGHT	C / G	EMPTY MOMENT
1383.1	38.3	52958.9 (52.95)

CENTER OF GRAVITY RANGE

NORMAL CATEGORY (2300 LBS.)

FWD. LIMIT	AFT LIMIT
1950 LBS. = 35.0 "	2300 LBS. = 47.3 "
2300 LBS. = 38.5 "	

UTILITY CATEGORY (MAX. 2000 LBS., NO REAR PAX., NO BAGGAGE)

FWD. LIMIT	AFT LIMIT
1950 LBS. = 35.0 "	ALL WEIGHTS = 40.5 "
2000 LBS. = 38.5 "	

Figure 12 - Weight and Balance Sheet (3 of 3)