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*Cessna 172N
Ormond Beach, FL*

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SECTION I

NTSB Accident Report Forms

pages 1-17

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C. 20594
AIRCRAFT ACCIDENT/INCIDENT REPORT
BRIEF FORMAT
U.S. CIVIL AVIATION

FILE	DATE	LOCATION	AIRCRAFT DATA	INJURIES F S M/N	FLIGHT PURPOSE	PILOT DATA
3-3900	11/20/78	ORMOND BEACH, FL	CESSNA 172N N733QV DAMAGE-DESTROYED	CR- 2 0 0 PX- 1 0 0	INSTRUCTIONAL DUAL	COMMERCIAL, FL. INSTR., AGE 23, 922 TOTAL HOURS, 715 IN TYPE, INSTRUMENT RATED.
DEPARTURE POINT		INTENDED DESTINATION				
DAYTONA BEACH, FL		LOCAL				
TYPE OF ACCIDENT				PHASE OF OPERATION		
COLLISION WITH GROUND/WATER: UNCONTROLLED				IN FLIGHT: UNCONTROLLED DESCENT		
PROBABLE CAUSE(S)						
PILOT IN COMMAND - INADEQUATE SUPERVISION OF FLIGHT						
DUAL STUDENT - SPATIAL DISORIENTATION						
FACTOR(S)						
PERSONNEL - OPERATIONAL SUPERVISORY PERSONNEL: FAILURE TO PROVIDE ADEQ. DIRECTIVES, MANUAL, EQUIPMENT						
MISCELLANEOUS ACTS, CONDITIONS - AIRCRAFT CAME TO REST IN WATER						
WEATHER - LOW CEILING						
WEATHER BRIEFING - OTHER						
WEATHER FORECAST - FORECAST SUBSTANTIALLY CORRECT						
SKY CONDITION			CEILING AT ACCIDENT SITE			
OVERCAST			800			
VISIBILITY AT ACCIDENT SITE			PRECIPITATION AT ACCIDENT SITE			
2 MILES OR LESS			NONE			
OBSTRUCTIONS TO VISION AT ACCIDENT SITE			TEMPERATURE-F			
HAZE			70			
WIND DIRECTION-DEGREES			WIND VELOCITY-KNOTS			
360			13			
TYPE OF WEATHER CONDITIONS			TYPE OF FLIGHT PLAN			
IFR			IFR			
REMARKS- WX BRIEF RCVD VIA ARPT ATIS INFO. COMPANY DID NOT PROHIBIT ACTUAL PARTIAL PANEL FLT TNG IN WX.						

QUALITY CONTROL CHECK

MEH-79-F-A045

FILE # 3-3900

NATIONAL TRANSPORTATION SAFETY BOARD FACTUAL AIRCRAFT ACCIDENT REPORT - GENERAL AVIATION -		NTSB FORM 6120.1 SUBMITTED <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES		NTSB ACCIDENT IDENTIFICATION NO. MIA-79-F-A015			
DISTANCE AND DIRECTION FROM NEAREST CITY OR PLACE, STATE ORMOND BEACH, FLORIDA		ELEVATION 0 MSL		DATE OF ACCIDENT 11-20-78			
Part A - WHEN ACCIDENT OCCURRED DURING APPROACH TO OR DEPARTURE FROM AN AIRPORT - COMPLETE FOLLOWING:							
AIRPORT NAME N/A		RUNWAY IN USE DIRECTION: _____ ° MAG. ON AIRPORT <input type="checkbox"/> LENGTH: _____ FT. OFF AIRPORT <input checked="" type="checkbox"/>		FROM AIRPORT DEGREES: _____ MILES: _____ RUNWAY SURFACE TYPE: _____ CONDITION: _____			
Part B - AIRCRAFT DATA							
AIRCRAFT MAKE AND MODEL CESSNA 172N		SERIAL NO. 17268472		AIRCRAFT TOTAL TIME 2444.0			
ENGINE MAKE AND MODEL LYCOMING O-320-H2AD		ENGINE TOTAL TIME/TIME SINCE O.H. NO. 1 2552.0 / 820.0 NO. 2 _____ / _____		DATE LAST XXXX-XX-XX TIME SINCE ANNUAL OR PROGRESSIVE INSP. 11-18-78			
NAME AND ADDRESS OF OWNER OR OPERATOR E.R.A.U., DAYTONA REGIONAL AIRPORT, DAYTONA BEACH, FLORIDA		CATEGORY OF AIRWORTHINESS CERTIFICATE NORMAL/UTILITY					
PURPOSE AND TYPE OF OPERATION (Check all applicable boxes)							
<input type="checkbox"/> LOCAL <input type="checkbox"/> SCHEDULE <input type="checkbox"/> PASSENGER <input type="checkbox"/> PRACTICE <input type="checkbox"/> _____ <input type="checkbox"/> PLEASURE <input type="checkbox"/> MAIL <input type="checkbox"/> BUSINESS <input checked="" type="checkbox"/> INSTRUCTIONAL <input type="checkbox"/> AIR TAXI <input type="checkbox"/> CARGO <input type="checkbox"/> CORP./EXEC. <input type="checkbox"/> AERIAL APPLICATION							
Part C - PILOT-IN-COMMAND DATA							
NAME AND ADDRESS PAUL JOHAN ERLING 6333 ROLF AVENUE EDINA, MN 55435		SEAT OCCUPIED RIGHT FRONT		PILOT CERTIFICATE NO. 2234918			
		DEGREE OF INJURY FATAL		SOCIAL SECURITY NO.			
		OCCUPATION PILOT		NATIONALITY USA			
		MEDICAL CERTIFICATE					
<input type="checkbox"/> AIRLINE TRANSPORT <input checked="" type="checkbox"/> AIRPLANE <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> HELICOPTER <input checked="" type="checkbox"/> FLT. INSTRUCTOR <input type="checkbox"/> ROTORCRAFT <input type="checkbox"/> PRIVATE <input type="checkbox"/> GYROPLANE <input type="checkbox"/> STUDENT <input type="checkbox"/> GLIDER <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> INSTRUMENT		TYPE RATINGS OR STUDENT ENDORSEMENTS N/A		DATE OF ISSUE 3-13-78			
<input checked="" type="checkbox"/> MULTI-ENGINE: LAND <input type="checkbox"/> SEA <input type="checkbox"/> <input checked="" type="checkbox"/> SINGLE-ENGINE: LAND <input type="checkbox"/> SEA <input type="checkbox"/>		AUTOPSY <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES		CLASS II			
		TOXICOLOGY <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES		LIMITATIONS/WAIVERS HOLDER SHALL WEAR CORRECTING LENSES WHILE EXERCISING THE PRIVILEGES OF HIS AIRMAN CERTIFICATE.			
				DATE OF BIRTH 8-23-55			
PILOT TIME		LAST 24 HOURS		LAST 90 DAYS		TOTAL TO DATE	
		DUAL	P.I.C.	DUAL	P.I.C.	DUAL	P.I.C.
1. THIS MAKE AND MODEL			1.2		114.8		315.1
2. NIGHT (All Models)				.6	17.2		133.6
3. DAY (All Models)			1.2	1.1	95.9		788.5
4. INSTRUMENTS ACTUAL SIMULATED			.7	.2	10.4		35.9
				.4	1.8		76.3
SOURCE OF TIME <input type="checkbox"/> PILOT FLIGHT TIME <input type="checkbox"/> PILOT/OPERATOR EST. <input type="checkbox"/> FAA RECORD <input checked="" type="checkbox"/> OTHER (Specify) PILOT'S COMPANY RECORDS		5. SINGLE ENG. FIXED WING				707.1	
		6. MULTI-ENG. FIXED WING				214.5	
		7. GLIDER				.5	
		8. ROTORCRAFT					
		9. OTHER:					
		TOTAL FLIGHT TIME (5, 6, 7, 8, 9)				922.1	

Part D - SECOND PILOT DATA								
NAME AND ADDRESS BLAKE A. FRANKENBERG 744 MAGNOLIA ROAD BARRINGTON, ILLINOIS 60010			SEAT OCCUPIED LEFT FRONT		PILOT CERTIFICATE NO. 348501128			
			DEGREE OF INJURY FATAL		SOCIAL SECURITY NO.			
			OCCUPATION STUDENT		NATIONALITY USA			
			TYPE RATINGS OR STUDENT ENDORSEMENTS		MEDICAL CERTIFICATE			
<input type="checkbox"/> AIRLINE TRANSPORT <input checked="" type="checkbox"/> AIRPLANE <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> HELICOPTER <input type="checkbox"/> FLT. INSTRUCTOR <input type="checkbox"/> ROTORCRAFT <input checked="" type="checkbox"/> PRIVATE <input type="checkbox"/> GYROPLANE <input type="checkbox"/> STUDENT <input type="checkbox"/> GLIDER <input type="checkbox"/> OTHER <input type="checkbox"/> INSTRUMENT <input type="checkbox"/> MULTI-ENGINE: LAND <input type="checkbox"/> SEA <input type="checkbox"/> <input checked="" type="checkbox"/> SINGLE-ENGINE: LAND <input type="checkbox"/> SEA <input type="checkbox"/>			DATE OF ISSUE 9-25-78		CLASS II			
AUTOPSY <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES			LIMITATIONS/WAIVERS NONE		DATE OF BIRTH 5-2-59			
TOXICOLOGY <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES								
PILOT TIME		LAST 24 HOURS		LAST 90 DAYS		TOTAL TO DATE		
		DUAL	PIC	DUAL	PIC	DUAL	PIC	TOTAL
1. THIS MAKE AND MODEL				11.5	26.9	50.0	64.7	114.7
2. NIGHT (All Models)				3.1	-	5.6	4.6	10.2
3. DAY (All Models)				8.4	26.9	44.4	60.1	104.5
4. INSTRUCTIONS		ACTUAL		-	-			-
		SIMULATED		3.0	-	8.7	-	8.7
SOURCE OF TIME <input type="checkbox"/> PILOT FLIGHT TIME <input checked="" type="checkbox"/> PILOT/OPERATOR EST. <input type="checkbox"/> FAA RECORDS <input type="checkbox"/> OTHER (Specify)		5. SINGLE ENG. FIXED WING		50.0		64.7		114.7
		6. MULTI-ENG. FIXED WING						
		7. GLIDER						
		8. ROTORCRAFT						
		9. OTHER:						
		TOTAL FLIGHT TIME (5, 6, 7, 8, 9)		50.0		64.7		114.7
Part E - OTHER PERSONNEL								
NAME	ADDRESS (CITY AND STATE)	Other Crew	Pass- enger	Non- occu- pant	DEGREE OF INJURY			
					Fatal	Seri- ous	Minor None	
WILLIAM G. MCGRAD	404 LAMP POST LANE CAMP HILL, PA 17011		X		X			
QUALITY CONTROL CHECK								
IF ADDITIONAL SPACE IS NEEDED - ATTACH SUPPLEMENTAL SHEET								
Part F - IF COLLISION WITH OTHER AIRCRAFT - SUPPLY THE FOLLOWING ON THE OTHER AIRCRAFT								
MAKE AND MODEL	REGISTRATION MARK	DAMAGE						
N/A	N N/A	<input type="checkbox"/> DEMOLISHED <input type="checkbox"/> SUBSTANTIAL <input type="checkbox"/> MINOR <input type="checkbox"/> NONE						

Part G - WEATHER AT TIME AND PLACE OF ACCIDENT			
SOURCE OF INFORMATION DAYTONA BEACH TOWER 0110Z	SKY COVER OVERCAST <input type="checkbox"/> CLEAR <input checked="" type="checkbox"/> CEILING 800 FT. <input type="checkbox"/> OTHER _____ FT.	WIND FROM 360 TRUE DIRECTION VELOCITY 13 KTS., GUSTS _____ KTS. LIGHT & VARIABLE <input type="checkbox"/>	
TURBULENCE <input type="checkbox"/> NONE <input type="checkbox"/> LIGHT <input type="checkbox"/> MODERATE <input type="checkbox"/> SEVERE <input type="checkbox"/> EXTREME	LIGHT CONDITIONS <input type="checkbox"/> DAWN / DUSK <input type="checkbox"/> BRIGHT NIGHT <input type="checkbox"/> DAYLIGHT <input checked="" type="checkbox"/> DARK NIGHT	VISIBILITY 2 MILES	ALTIMETER SET. 30.19 HG.
WEATHER CONDITIONS AND VISIBILITY RESTRICTIONS <input type="checkbox"/> FOG <input type="checkbox"/> RAIN <input type="checkbox"/> SNOW <input type="checkbox"/> SLEET <input type="checkbox"/> FREEZING <input type="checkbox"/> THUNDERSTORMS <input checked="" type="checkbox"/> HAZE <input type="checkbox"/> HAIL <input type="checkbox"/> SMOKE <input type="checkbox"/> DUST RAIN <input type="checkbox"/> ICING CONDITIONS		TEMPERATURE 70 °F	DEW POINT 64 °F
Part H - FLIGHT PLAN INFORMATION			
DEPARTURE POINT DAYTONA REGIONAL AIRPORT DAYTONA BEACH, FLORIDA	DATE AND TIME OF DEPARTURE 11/20/78	DESTINATION LOCAL	ETA (If any)
INTERMEDIATE POINTS OF LANDING NONE	SERVICE PRIOR TO LAST TAKEOFF 18.3 GALS	FUEL ON BOARD LAST TAKEOFF 43 GALS N/A 100LL GRADE	
FLIGHT PLAN FILED: <input type="checkbox"/> NONE <input type="checkbox"/> VFR <input checked="" type="checkbox"/> IFR <input type="checkbox"/> SPECIAL VFR <input type="checkbox"/> OTHER:			
DESCRIBE WEATHER BRIEFINGS OBTAINED (From whom, when, where and how received) AND ENROUTE WEATHER REPORTS REC'D. PILOT RECEIVED ATIS INFORMATION "U" SEE NARRATIVE			
Part I - COMPONENT/SYSTEM FUNCTIONAL FAILURE			
<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES (If "Yes", give part name, mfr., part no., serial no., etc.)		TIME ON PART	
		TOTAL	SINCE OVERHAUL
Part J - AIRCRAFT AND GROUND DAMAGE			
DEGREE OF AIRCRAFT DAMAGE <input checked="" type="checkbox"/> DEMOLISHED <input type="checkbox"/> SUBSTANTIAL <input type="checkbox"/> MINOR <input type="checkbox"/> NONE		FIRE <input type="checkbox"/> NO <input type="checkbox"/> IN FLIGHT <input type="checkbox"/> YES <input type="checkbox"/> ON GROUND	
DESCRIBE GROUND DAMAGE (If any) N/A			
QUALITY CONTROL CHECK			

Part K - AIRPLANE WRECKAGE EXAMINATION									
IF WRECK WAS MOVED PRIOR TO EXAMINATION - PROVIDE DETAILS IN NARRATIVE									
COMPONENT DAMAGE I-IMPACT F-FIRE D-DEMOLISHED S-SUBSTANTIAL M-MINOR N-NONE			TYPE OF LANDING GEAR FIXED		FUEL SELECTOR POSITIONS N/O		VACUUM SELECTOR POSITION N/O		
PROPELLER	NO. 1	N/O	RETRACTABLE GEAR AT IMPACT		UP OR DOWN		LOCKED OR INTERMEDIATE		
	NO. 2								
ENGINE	NO. 1	N/O	LEFT						
	NO. 2		RIGHT						
FUSELAGE		DI	NOSE/TAIL		N/A		N/A		
FLIGHT CONTROL SYSTEM		DI	LANDING GEAR CONTROL						
ENGINE CONTROLS		DI	LANDING GEAR INDICATOR						
LANDING GEAR SYSTEM		DI	POSITION OF WING FLAPS <input type="checkbox"/> UP N/O <input type="checkbox"/> DOWN (random) N/O		WING FLAP POSITION INDICATOR N/O		WING FLAP CONTROL POSITION UP		
HORIZONTAL STABILIZERS		DI							
ELEVATORS/STABILATORS		DI							
VERTICAL STABILIZERS		DI							
RUDDER/RUDDERVATORS		DI							
TRIM TABS	RUDDER	DI	DUAL CONTROLS						
	ELEVATOR	DI	INSTALLED <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES				OPERATIVE <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES		
	AILERON	N/O							
LEFT WING		N/O	TRIM TAB POSITIONS <i>Deflection Angle</i>	NEUTRAL	RIGHT OR UP	LEFT OR DOWN	FIXED	TRIM INDICATOR SETTINGS	
LEFT FLAP		DI	RUDDER		0				
LEFT AILERON/SPOILER		N/O	ELEVATOR						
LEFT WING STRUTS		N/O	AILERON		N/O				
RIGHT WING		N/O	SEAT BELTS		No. Installed	No. Used	No. Separated	Failure Description	
RIGHT FLAP		N/O							
RIGHT AILERON/SPOILER		N/O							
RIGHT WING STRUTS		N/O							
SYSTEMS		FUEL			N/O				
		OIL	N/O	4	N/O	N/O			
		ELECTRIC	N/O						
		HYDRAULIC		SHOULDER HARNESS	2	N/O	N/O		
		ANTI-ICE							
VACUUM		N/O	SEATS	4	N/O	N/O			
PNEUMATIC			ON BOARD	USED	REMARKS (Quantity)				
CABIN HEATER			OXYGEN	XX No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>					
OTHER (SPECIFY)									
CABIN PRESSURIZATION		INSTALLED XX No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>	REMARKS						
EMERGENCY LOCATOR TRANSMITTER		ON BOARD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	AIDED SEARCH LOCATION				REMARKS		
		<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	XX No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>						
Part L - COCKPIT DOCUMENTATION									
COMMUNICATIONS AND NAVIGATION SETTINGS									
ITEM		REMARKS		ITEM		REMARKS			
#1 COMM		123.90 (DAYTONA APPROACH)							
#1 NAV		112.6 (ORMOND VOR)							
#1 ADF		201 (DELAND RADIO BEACON)							
QUALITY CONTROL CHECK									

Part M - ROTORCRAFT WRECKAGE EXAMINATION
 IF WRECKAGE WAS MOVED PRIOR TO EXAMINATION - PROVIDE DETAILS IN NARRATIVE

I - IMPACT F - FIRE D - DEMOLISHED S - SUBSTANTIAL M - MINOR N - NONE

SYSTEM	COMPONENT	DAMAGE		SYSTEM	COMPONENT	DAMAGE
		NO. 1	NO. 2			
POWER PLANTS	ACCESSORIES			N/A AIR FRAME	COCKPIT	
	CONTROL SYSTEM				CABIN	
	LUBRICATION SYSTEM				TAIL BOOM PYLON	
	FUEL SYSTEM				LANDING GEAR	
	MOUNTS				TAIL ROTOR GUARD	
MAIN ROTORS	BLADES <u>I/</u>	<u>F-L</u>	<u>A-R</u>	TAIL ROTOR	STABILIZER	
	HUBS				BLADES	
	MASTS				HUB	
	CONTROL SYSTEM				DRIVE SYSTEM	
TRANSMISSIONS	ACCESSORIES			OTHER SYSTEMS	CONTROL SYSTEM	
	DRIVE SYSTEMS				LUBRICATION SYSTEM	
	LUBRICATION SYSTEM				ELECTRICAL	
<u>I/</u> LEGEND: F - FORWARD L - LEFT A - AFT R - RIGHT OTHER DAMAGE (Specify)		VACUUM				
		HYDRAULIC				
		CABIN HEATER				
		PNEUMATIC				
		STABILIZATION				

EXTERNAL LOAD DATA	LOAD CARRIED		FRICTION	COLLECTIVE	FULL	PART	OFF
	<input type="checkbox"/> LITTER <input type="checkbox"/> SLING	<input type="checkbox"/> HOIST <input type="checkbox"/> HOPPER <input type="checkbox"/> TANK <input type="checkbox"/> OTHER: _____					
TYPE OF LANDING GEAR	FUEL SELECTOR POSITION	VACUUM POSITION	DUAL CONTROLS				
			INSTALLED <input type="checkbox"/> NO <input type="checkbox"/> YES		OPERATIVE <input type="checkbox"/> NO <input type="checkbox"/> YES		
SEAT BELTS	NO. INSTALLED	NO. USED	NO. SEP.	FAILURE DESCRIPTION			
SHOULDER HARNESS							
SEATS							
OXYGEN	ON BOARD <input type="checkbox"/> NO <input type="checkbox"/> YES	USED <input type="checkbox"/> NO <input type="checkbox"/> YES	REMARKS (Quantity)				
EMERGENCY LOCATOR TRANSMITTER	ON BOARD <input type="checkbox"/> NO <input type="checkbox"/> YES	AIDED SEARCH/LOCATION <input type="checkbox"/> NO <input type="checkbox"/> YES	REMARKS				

Part N - COCKPIT DOCUMENTATION

COMMUNICATIONS AND NAVIGATION SETTINGS

ITEM	REMARKS	ITEM	REMARKS
	N/A		

QUALITY CONTROL CHECK

Part O - INSTRUMENT READINGS

ITEM	REMARKS	ITEM	REMARKS
TACHOMETER	BEYOND 3500 RPM & SEIZED		

Part P - POWER PLANT CONTROL SETTINGS

ITEM	REMARKS	ITEM	REMARKS
IGNITION SWITCH	R MAG - BENT 90° TO LEFT		
MIXTURE	MID RANGE		

Part Q - FLIGHT CONTROL - DEICER - ANTI-ICER SETTINGS

ITEM	REMARKS	ITEM	REMARKS
FLAP HANDLE	UP		

Part R - ELECTRIC PANEL - LIGHT SWITCHES

ITEM	REMARKS	ITEM	REMARKS
MASTER SWITCH	ON		
RADIO MASTER	BROKEN		
CIRCUIT BREAKER	IMPACT DAMAGE		
QUALITY CONTROL CHECK			

Part S			
AIRCRAFT GROSS WEIGHT		AIRCRAFT CENTER OF GRAVITY	
AT TAKEOFF	AT OCCURRENCE	AT TAKEOFF	AT OCCURRENCE
<input checked="" type="checkbox"/> WITHIN MAX. <input type="checkbox"/> OVER MAX. <input type="checkbox"/> UNKNOWN REMARKS:	<input checked="" type="checkbox"/> WITHIN MAX. <input type="checkbox"/> OVER MAX. <input type="checkbox"/> UNKNOWN REMARKS:	<input checked="" type="checkbox"/> WITHIN LIMITS <input type="checkbox"/> BEYOND LIMITS <input type="checkbox"/> UNKNOWN <input type="checkbox"/> FORE AFT <input type="checkbox"/> FORE LEFT <input type="checkbox"/> FORE RIGHT	<input checked="" type="checkbox"/> WITHIN LIMITS <input type="checkbox"/> BEYOND LIMITS <input type="checkbox"/> UNKNOWN <input type="checkbox"/> FORE AFT <input type="checkbox"/> FORE LEFT <input type="checkbox"/> FORE RIGHT

Part T - ACCIDENT SITE EXAMINATION			
TERRAIN FEATURES <i>(Check more than one if necessary)</i>	<input type="checkbox"/> LEVEL <input type="checkbox"/> ROLLING <input type="checkbox"/> HILLY <input type="checkbox"/> MOUNTAINOUS	<input type="checkbox"/> WOODED <input type="checkbox"/> BRUSH <input type="checkbox"/> SWAMP <input type="checkbox"/> DESERT	<input type="checkbox"/> PLOWED FIELD <input type="checkbox"/> CROPS <input type="checkbox"/> OPEN WATER <input checked="" type="checkbox"/> RIVER <input type="checkbox"/> LAKE <input type="checkbox"/> CITY AREA <input type="checkbox"/> OTHER <i>(Specify)</i>
GROUND CONDITIONS: <input type="checkbox"/> SOFT <input type="checkbox"/> HARD <input type="checkbox"/> ROCKY <input type="checkbox"/> OTHER <i>(Specify)</i> :			
OBSTACLES STRUCK BEFORE PRINCIPAL IMPACT <input type="checkbox"/> WIRES <input type="checkbox"/> TREES <input type="checkbox"/> BRUSH <input type="checkbox"/> BUILDING	<input type="checkbox"/> OTHER <i>(Specify)</i> COMPONENT INVOLVED WITH OBSTACLE IMPACT <i>(Describe)</i>		
MOVED AFTER PRINCIPAL IMPACT <input type="checkbox"/> NO <input type="checkbox"/> YES → N/O DISTANCE _____ FT. DIRECTION: _____ ° MAG.	GRADE OF TERRAIN AT IMPACT <input type="checkbox"/> LEVEL <input type="checkbox"/> UP <input type="checkbox"/> DOWN _____ ° OF SLOPE		
SKETCH OF IMPACT POINTS: <i>(Sketch gouge marks with dimensions and magnetic headings; include obstacle and principle impact points, pertinent landmarks, buildings, runways, reconstructed flight and ground paths, wreckage distribution, etc.)</i>			
SEE PHOTOGRAPHS			

SKETCH. Indicate Magnetic Direction and Scale
 SCALE

QUALITY CONTROL CHECK

HISTORY OF FLIGHT:

On November 20, 1978, Cessna 172N, N733QV, departed Daytona Beach Regional Airport at approximately 2011 (all times noted herein are Eastern Standard Times based on the 24 hour clock unless otherwise noted) On an Instrument Training Flight. Aboard the aircraft, in addition to the student and instructor was another Emery Riddle student who was to observe the training. (At approximately 2037 the aircraft crashed into the Tomoka River, approximately three miles east, northeast of the Ormond Beach Airport, Ormond Beach, Florida. All occupants sustained fatal injuries.)

The purpose of the flight was to prepare student, Blake Frankenberg, for a forthcoming Basic Attitude Instrument and Radio Navigation phase check in accordance with E.R.A.U. flight syllabus FA203. The students last flight was on October 26, 1978 and according to P. Spurrier, E.R.A.U., he had requested an extra unit of flight training prior to the ~~forementioned~~ phase check. On October 26, 1978 flight, the student had difficulty with unusual attitude recoveries, steep turns, magnetic compass turns and pitch control (see Attachment No. 8).

~~2) The~~ The aforementioned phase check consists of basic attitude instrument flying with full and partial panel, i.e. steep turns, unusual attitudes, magnetic compass turns and pitch control maneuvers; it also includes basic radio navigation, i.e. VOR and ADF time/distance checks.

The flight departed on Runway 34 and received several amended clearances, the final being to hold north of the Ormond Beach VOR within a five radius between the 270° and 090° radial at a block altitude of 3000 to 4000 feet. At 2033 the clearance was further amended to maintain 3000 feet which was acknowledged by the pilot. This was the last radio communication with the aircraft. Radar contact was lost at 2037. Radar coverage in the accident area begins at approximately 600 feet and extends upwards.

* All ear witnesses allude to hearing a loud engine noise and then silence at approximately the time radar contact was lost. (See Attachment No. 7.)

PERSONNEL INFORMATION:

The instructor pilot, Mr. Paul Johan Erling, was a full time employee of E.R.A.U. and held a commercial pilot and flight instructors certificate with airplane single-multi engine land ratings on both certificates. (See Part C above.) ~~At instrument rating.~~

The student, Mr. Blake A. Frankenberg, was a full time academic and flight student of E.R.A.U. and held a private pilot certificate. (See Part D above.)

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NARRATIVE (Continued)

The observer, Mr. William G. McGrade, was a full time academic and flight student of E.R.A.U. Mr. McGrade held a Private Pilot Certificate No. 207527568 with airplane single engine land rating and a Class II medical certificate dated September 8, 1978. Mr. McGrade's flight time is undetermined.

AIRCRAFT INFORMATION:

The aircraft was operated by E.R.A.U. and was registered to the Cessna Finance Corporation.

The aircraft was maintained in accordance with an approved progressive maintenance program by E.R.A.U. The aircraft was found to be properly certificated pursuant to the provisions of applicable Federal Air Regulations. (See Part E above for basic aircraft data.)

*
METEOROLOGICAL INFORMATION:

According to the Airport Terminal Information Service Information "U" 2355Z weather was 600 feet overcast, visibility 1½ miles with haze, wind 350° at 14 knots, temperature 70°F.

Witness statements as to the tops of the overcast vary from 2600 feet msl to 4500 feet msl.

IFR

WRECKAGE AND IMPACT INFORMATION:

According to Lt. ~~C. N. Clifford~~, Volusia County Sheriff's Department Diving Squad, the aircraft was located on November 21, 1978 at approximately 0930 by private aircraft. Upon arriving at the wreckage site approximately one foot of the aircraft's tail section was observed to be protruding out of the water. Lt. ~~Clifford~~ further stated the aircraft impacted in a vertical nosedown attitude with the engine buried in the mud.

Initially, the divers were able to recover the following items:

1. Empennage assembly
2. Instrument panel
3. Gear box center section with wheels attached
4. Trailing edge of the underside right wing panel
5. Aft fuselage bulkhead with attaching cables and pulleys
6. Rear cabin compartment
7. Lower portion of both wing fuel tanks

QUALITY CONTROL CHECK

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NARRATIVE (Continued)

The engine and propeller assemblies were recovered on November 28, 1978 by F. D. Russell, Aloha Marina, Holly Hill, Florida. The recovered wreckage was brought to the Ormond Beach Airport for examination. Continuity of the elevators, rudder and elevator trim tab was found. All separated control cables were found to frayed out and individual strands necked down. Included in the instrument panel were the directional gyro and attitude indicator. A plastic cover was found imbedded in the attitude indicator. According to E.R.A.U. instructors this cover is supplied by E.R.A.U. and is used to cover the face of the attitude indicator to simulate instrument failure. (See Photograph No. 10 and 11.)

The tachometer was impacted jammed at approximately 3800 RPM.

TESTS AND RESEARCH:

On November 30, 1978, the aircraft's Lycoming Engine S/N L-1128-76 was disassembled for examination. The engine disassembly was effected at Sun Aviation, Vero Beach, Florida. The following personnel observed/participated in the examination.

Mr. A. D. Llorente	-	NTSB
Mr. Gordon L. Richter	-	Avoc Lycoming
Mr. Chandler P. Titus	-	E.R.A.U.
Mr. David Russell	-	E.R.A.U.
Mr. Al Yurman	-	A.M.S.I.

Prior to disassembly the rocker box covers and the upper spark plugs were removed and the engine crankshaft was manually rotated. During rotation, valve action on Nos. 3 & 4 cylinders was observed and continuity established by observing the accessory section gears rotating. The pushrod assemblies for Nos. 1 & 2 cylinders were missing.

All engine drive accessories with the exception of one magneto and oil pump were missing. The Bendix Dual magneto sustained major impact damage and its operation could not be determined. (See Photograph No. 20.)

Upon disassembly all components therein showed normal wear patterns. All gears and associated assemblies were intact and free to operate. No. 4 cylinder exhaust valve disclosed evidence of minor blow by. All intake valve keepers disclosed minor indentation on the upper side. No. 1 cylinder exhaust and intake valve stems disclosed minor feathering upward at the keeper groove. The micrometer readings of the crankshaft disclosed all main and connecting rod bearings to be within the allowable tolerance as prescribed by the Lycoming Service Table Limits SSP 2070-3.

QUALITY CONTROL CHECK

NARRATIVE (Continued)

All upper and lower No. 3 spark plugs were impacted with mud. The lower spark plugs on No. 1 & 4 cylinder disclosed no evidence of fouling. The lower No. 2 cylinder spark plug was missing.

The examination of those components and parts available disclosed no evidence of a preimpact malfunction or failure. Evidence of good lubrication was noted throughout the engine.

Examination of the engine valve springs disclosed no evidence of stretching or loss of tension. (See Attachment No. 4.)

Examination of the aircraft's attitude indicator disclosed extensive damage due to downward vertical forces and no evidence of any preimpact malfunction or failure. (See Attachment No. 5.)

The rear white tail light removed from the aircraft's empennage disclosed its filaments to be stretched.

The propeller separated at the crankshaft flange and was located near the engine. The flange was fractured in a 45° angle and microscopic examination disclosed no evidence of preexisting cracks. The propeller spinner was crushed (see Photograph No. 17) and the blades were bent rearward approximately 14 inches from the hub assembly. Both blades formed an "S" twist from the bend to the tips. (See Photographs No. 15 and 16.)

X MEDICAL AND PATHOLOGICAL INFORMATION:

Autopsy and toxicology reports disclosed no evidence of pilot incapacitation or impairment.

ADDITIONAL DATA:

According to the aircrafts equipment list on file at E.R.A.U., the aircraft was equipped with a Leigh Sharc - 7 E.L.T. It was not recovered and did not aid in the recovery of the aircraft.

#5 (Prior to this accident, E.R.A.U. did not prohibit its instructors via directives to perform partial panel training maneuvers in actual instrument weather conditions. Subsequent to this accident E.R.A.U.)

QUALITY CONTROL CHECK

issued a amended directive FD-6-77 prohibiting partial panel training maneuvers during periods of reduced visibility and inclement weather.

THIS REPORT CONSISTS OF 12 PAGES.

Part V -- ADDITIONAL PERSONS PARTICIPATING IN THIS INVESTIGATION

NAME, ADDRESS, AND AFFILIATION

MR. J. D. REEVES - FAA-JACKSONVILLE GADO-7

MR. W. H. BOOKHAMMER - FAA, JACKSONVILLE GADO-7

QUALITY CONTROL CHECK

Part W -- INVESTIGATED BY

DATE

AGENCY

SIGNATURE

4-3-79

NTSB AI-20(MIA)

A. D. Llorente

(Check box(es) where applicable)

APPROVED, ON 8 NOV 004-P 5714

NATIONAL TRANSPORTATION SAFETY BOARD				REGISTRATION MARK		DATE OF ACCIDENT																																																																																																									
PILOT/OPERATOR AIRCRAFT ACCIDENT REPORT <i>This form to be used for reporting civil aircraft accidents involving general aviation aircraft</i>				N- 733QV		11-20-78																																																																																																									
CITY OR PLACE, STATE Near Ormond Beach, Florida				ELEVATION SL FT	LOCAL TIME D	ZONE EST	24-HR CLOCK 2030																																																																																																								
If accident occurred on approach, takeoff or within 5 miles of an airport give the following information.																																																																																																															
LOCATION		ON AIRPORT?	NAME OF AIRPORT	MAGNETIC BEARING FROM NEAREST AIRPORT DEGREES 018 MILES 4 nm	RUNWAY DIRECTION LENGTH N/R	TYPE OF SURFACE & CONDITION N/R																																																																																																									
1.		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	N/R																																																																																																												
2. AIRCRAFT DATA		AIRCRAFT MAKE & MODEL Cessna 172 N	SERIAL NO. 172-68474	TOTAL TIME AIRCRAFT 2444.0 hr	ENGINE MAKE AND MODEL Lycoming 0320-H2AD	#1 ENGINE 820	#2 ENGINE -																																																																																																								
		DATE OF LAST ANNUAL/PROGRESSIVE INSPECTION Progressive 11-18-78	TIME SINCE LAST 100 HOUR INSPECTION 8.2 hrs	CATEGORY OF CERTIFICATE <input checked="" type="checkbox"/> NORMAL <input checked="" type="checkbox"/> UTILITY <input type="checkbox"/> ACROBATIC <input type="checkbox"/> OTHER (Specify)	HOME BUILT <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO																																																																																																										
		NAME AND ADDRESS OF OWNER OR OPERATOR Embry-Riddle Aeronautical University Regional Airport, Daytona Beh. Fla.			RELEASE WRECKAGE TO (Name and address) Same																																																																																																										
3. PURPOSE OF FLIGHT AND TYPE OF OPERATION		<input type="checkbox"/> SCHEDULED AIR TAXI <input type="checkbox"/> CARGO <input type="checkbox"/> BUSINESS TRANSPORT <input type="checkbox"/> CROSS COUNTRY <input type="checkbox"/> PERSONAL TRANSPORTATION <input type="checkbox"/> AERIAL APPLICATION <input type="checkbox"/> NON SCHEDULED AIR TAXI <input type="checkbox"/> PASSENGER <input type="checkbox"/> CORPORATE EXEC <input checked="" type="checkbox"/> LOCAL <input type="checkbox"/> FERRY <input checked="" type="checkbox"/> INSTRUCTIONAL OTHER PURPOSE (Specify) _____ TYPE OF CONTRACTOR _____																																																																																																													
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4. PILOT CERTIFICATE DATA		PILOT NAME Paul J. Ehrling		CERTIFICATE NO. 2234918	NATIONALITY OF PILOT USA	MEDICAL CERTIFICATE																																																																																																									
		<input type="checkbox"/> AIRLINE TRANSPORT <input checked="" type="checkbox"/> AIRPLANE <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> HELICOPTER <input checked="" type="checkbox"/> FLIGHT INSTRUCTOR <input type="checkbox"/> GYROPLANE <input type="checkbox"/> PRIVATE <input type="checkbox"/> GLIDER <input type="checkbox"/> STUDENT <input checked="" type="checkbox"/> INSTRUMENT <input type="checkbox"/> OTHER (Specify) _____		<input checked="" type="checkbox"/> MULTI ENGINE LAND <input type="checkbox"/> SEA <input checked="" type="checkbox"/> SINGLE ENGINE LAND <input type="checkbox"/> SEA TYPE RATINGS OR STUDENT ENDORSEMENT BIENNIAL FLIGHT REVIEW DATE 8-18-78		DATE OF ISSUE 3-13-78 <input checked="" type="checkbox"/> BY FAA <input type="checkbox"/> OTHER (Specify) _____ CLASS <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 DATE OF BIRTH 8-23-55 LIMITATIONS Holder shall wear correcting lenses while exercising privileges of airman certificate																																																																																																									
5. PILOT FLIGHT TIME (In hours)		<table border="1"> <thead> <tr> <th rowspan="2">TIME</th> <th colspan="2">LAST 24 HOURS</th> <th colspan="2">LAST 90 DAYS</th> <th colspan="3">TOTAL TO DATE</th> </tr> <tr> <th>DUAL</th> <th>PIC</th> <th>DUAL</th> <th>PIC</th> <th>DUAL</th> <th>PIC</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>A. THIS MAKE & MODEL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B. NIGHT-ALL MAKES</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C. DAY-ALL MAKES</td> <td colspan="7">SEE NTSB FORM 6120.4</td> </tr> <tr> <td>D. INSTRUMENT</td> <td>ACTUAL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>SIMULATED</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>E. SINGLE ENGINE FIXED WING</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>F. MULTI ENGINE FIXED WING</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>G. GLIDER</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>H. HELICOPTER</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>I. GYROPLANE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>J. (Sum of lines E, F, G, H, I) TOTAL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							TIME	LAST 24 HOURS		LAST 90 DAYS		TOTAL TO DATE			DUAL	PIC	DUAL	PIC	DUAL	PIC	TOTAL	A. THIS MAKE & MODEL								B. NIGHT-ALL MAKES								C. DAY-ALL MAKES	SEE NTSB FORM 6120.4							D. INSTRUMENT	ACTUAL								SIMULATED							E. SINGLE ENGINE FIXED WING								F. MULTI ENGINE FIXED WING								G. GLIDER								H. HELICOPTER								I. GYROPLANE								J. (Sum of lines E, F, G, H, I) TOTAL							
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NTSB Form 6120.1 (Rev. 10/77)

QUALITY CONTROL CHECK

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(2)

	NAME	LAST 24 HOURS		LAST 90 DAYS		TOTAL TO DATE			SOURCE OF FLIGHT TIME INFORMATION
		DUAL	PIC	DUAL	PIC	DUAL	PIC	TOTAL	
SECOND PILOT FLIGHT TIME (In hours)	A. THIS MAKE & MODEL								<input type="checkbox"/> PILOT FLT LOG <input type="checkbox"/> OPERATOR'S EST. <input type="checkbox"/> FAA RECORDS <input type="checkbox"/> OTHER (Specify)
	B. NIGHT-ALL MAKES								
	C. DAY-ALL MAKES								
	D. INSTRUMENT	ACTUAL	SEE NTSB FORM 6120.4						
		SIMULATED							
	E. SINGLE ENGINE FIXED WING								
	F. MULTI ENGINE FIXED WING								
	G. GLIDER								
	H. HELICOPTER								
	I. GYROPLANE								
J. (Sum of lines E, F, G, H, I) TOTAL									

PERSONNEL (List all on board, also persons injured on ground.)	NAME OF PERSONNEL	ADDRESS AND SEAT OCCUPIED	NON-OCCUPANT	DEGREE OF INJURY			
				FATAL	SERIOUS	MINOR	NONE
8.	PILOT Paul J. Erling	100 Silver Beach Ave. Daytona Beach, FL 32018		X			
	OCCUPATION Flight Instructor	<input checked="" type="checkbox"/> FRONT <input type="checkbox"/> REAR <input type="checkbox"/> LEFT <input checked="" type="checkbox"/> RIGHT					
	PILOT Blake A. Frankenberg	744 Magnolia Rd. Barrington IL		X			
	OCCUPATION Student	<input checked="" type="checkbox"/> FRONT <input type="checkbox"/> REAR <input checked="" type="checkbox"/> LEFT <input type="checkbox"/> RIGHT					
	Observer William G. McGrade	404 Lamp Post Lane Camp Hill, PA 17011		X			
	Occupation Student	Rear Seat (observer)					
NUMBER OF PERSONS ABOARD AIRCRAFT		NUMBER OF NON-OCCUPANTS INJURED		TOTAL			
	3	None		3			

9. COLLISION ACCIDENT	If collision accident, complete this item on other aircraft		
	MAKE AND MODEL	REGISTRATION MARK	DAMAGE
	N/R	N-	<input type="checkbox"/> DEMOLISHED <input type="checkbox"/> SUBSTANTIAL <input type="checkbox"/> MINOR <input type="checkbox"/> NONE

10. WEATHER AT ACCIDENT SITE	SOURCE OF INFORMATION (in # with date, etc.)		SKY COVER		WIND	
			<input type="checkbox"/> CLEAR <input type="checkbox"/> CEILING AT _____ FT.	<input type="checkbox"/> SCATTERED AT _____ FT.	DIRECTION _____	VELOCITY _____ KTS, GUSTS _____ KTS.
	TURBULENCE (In flight)		LIGHT CONDITIONS		VISIBILITY _____ MILES	
	<input type="checkbox"/> NONE <input type="checkbox"/> MODERATE <input type="checkbox"/> EXTREME	<input type="checkbox"/> DAWN/DUSK <input type="checkbox"/> BRIGHT NIGHT			ALTITUDE SETTING _____ HG.	
	<input type="checkbox"/> LIGHT <input type="checkbox"/> SEVERE	<input type="checkbox"/> DARK NIGHT				
	WEATHER CONDITIONS AND RESTRICTIONS TO VISIBILITY				TEMP (°F) _____ DEW POINT (°F) _____	
	<input type="checkbox"/> FOG <input type="checkbox"/> SMOKE <input type="checkbox"/> THUNDERSTORM <input type="checkbox"/> SNOW <input type="checkbox"/> FREEZING RAIN					
	<input type="checkbox"/> HAZE <input type="checkbox"/> RAIN <input type="checkbox"/> HAIL <input type="checkbox"/> SLEET <input type="checkbox"/> ICING CONDITIONS					

11. FLIGHT PLAN INFORMATION	FLIGHT PLAN FILED?		IF WEATHER WAS INVOLVED, STATE IF WEATHER BRIEFING WAS OBTAINED OR IF WEATHER REPORTS WERE CHECKED AND HOW ACCOMPLISHED	
	<input type="checkbox"/> YES <input type="checkbox"/> SPECIAL VFR	<input type="checkbox"/> NO <input type="checkbox"/> VFR <input type="checkbox"/> IFR		
	SEE NTSB FORM 6120.4			
	FUEL ON BOARD AT LAST TAKEOFF _____ GALS	DEPARTURE POINT _____	TIME OF DEPARTURE _____	DESTINATION _____
	OTHER SERVICE IF ANY PRIOR TO DEPARTURE _____			

12. MECHANICAL FAILURE/MALFUNCTION	<input type="checkbox"/> YES <input type="checkbox"/> NO (IF YES, LIST THE NAME OF THE PART, MANUFACTURER, PART NUMBER, SERIAL NUMBER, ETC.)	TOTAL TIME	
		AT OVERHAUL	ON PART
	Unknown		

This section contd. on back.

13. HISTORY OF FLIGHT	DESCRIBE WHAT HAPPENED IN CHRONOLOGICAL ORDER, THE CIRCUMSTANCES LEADING TO ACCIDENT AND NATURE OF ACCIDENT. DESCRIBE THE TRAIN AND INCLUDE A SKETCH OF WRECK DISTRIBUTION IF PERTINENT. ATTACH AN EXTRA SHEET IF MORE SPACE IS NEEDED. STATE POINT AND TIME OF COLLISION AND SERVICE PERFORMED.			
	<p>Cessna 172, N733QV was "logged out" from Embry-Riddle (ERAU) ramp at 19.9 hours (local) on November 20, 1978. The flight was scheduled as extra time (other than normal course scheduling) in preparation for the Basic Attitude Instrument and Radio Navigation Phase Check of Intermediate Flight Course (FA-203). At 2100 hours (local) Daytona tower informed ERAU operations that radar and radio contact had been lost with aircraft. Attempts to initiate search operations were initiated but were impossible due to low ceilings and visibility. Spot of aircraft impact not located until 0730 on November 21, 1978 in approximately 5 feet of water in the Tomoka Basin. Recovery operations were initiated. Aircraft was completely demolished. No wreckage located beyond 25 foot radius of point of impact. Bodies of occupants were recovered by 1630 (local) on November 21, 1978. The largest portions of wreckage recovered by crane and clamshell from the mud and silt of the river included crushed empennage with crumpled, torn</p>			
14. EMERGENCY LOCATOR TRANSMITTER	INSTALLED IN AIRCRAFT <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	SWITCH Unknown <input type="checkbox"/> ON <input type="checkbox"/> OFF	OPERATED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	USED IN SEARCH <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
	TYPE Leigh	MODEL Sharc - 7	SERIAL NO Unknown	BATTERY DATE 11-17-76
15. DAMAGE TO AIRCRAFT AND OTHER PROPERTY	DEGREE OF AIRCRAFT DAMAGE <input checked="" type="checkbox"/> DEMOLISHED <input type="checkbox"/> SUBSTANTIAL <input type="checkbox"/> MINOR <input type="checkbox"/> NONE		FIRE <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> INFLIGHT <input type="checkbox"/> ON GROUND <input type="checkbox"/> NONE	
	EST. COST OF REPAIRS \$		EST. COST OF REPAIRS \$	
16. RECOMMENDATIONS (How could this accident have been prevented?)	DESCRIPTION OF DAMAGE TO AIRCRAFT AND OTHER PROPERTY			
	OPERATOR, OWNER SAFETY RECOMMENDATIONS (Optional entry)			

I HEREBY CERTIFY that the above information is complete and accurate to the best of my knowledge

DATE OF THIS REPORT 11-29-78	SIGNATURE OF PILOT OPERATOR <i>William A. Martin</i> William A. Martin, Chief Flight Instructor		
FOR NTSB USE ONLY			
NTSB ACCIDENT NO	REVIEWED BY NTSB OFFICE LOCATED AT	NAME OF INVESTIGATOR	DATE REPORT RECEIVED

1053

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ADDITIONAL INFORMATION

13. History of Flight (Continued)

portions of rear fuselage skin, stringers and formers. The main gear assembly the nose gear assembly, the propeller, the engine, some portions of instrument panel, some instruments, various pieces of skin and structure of cabin, doors, wing, flaps, fuel tanks.

Documents and information concerning the aircraft and occupants was furnished to NTSB and FAA representatives. Individuals to provide liaison and assistance to NTSB and FAA investigators were identified. They worked closely with Government individuals.

QUALITY CONTROL CHECK

18

J & M
AIRCRAFT, INC.

F.A.A. APPROVED REPAIR STATION NO. 5043

BLDG. 409 OPA-LOCKA AIRPORT
OPA-LOCKA, FLA.

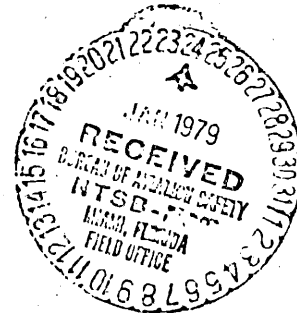
PHONE
681-8534
681-8535

January 18, 1979

National Transportation Board
Miami Fld. Office
4471 N.W. 36 St. Rm. 230
Miami Springs, Fla. 33166

Attention: Mr. D. Llorente

Re: Accident Mia79FA015
Cessna C-172
Registration N733QV
Near Ormond Beach, Fla. on 11-20-78

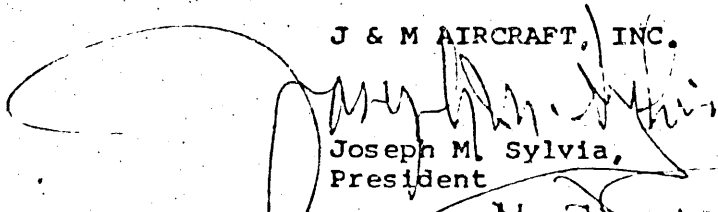


I hereby certify that I have examined a set of valve springs from Lycoming engine model O-320-H in the presence of Luis Carmona of NTSB. All springs tested conform with manufacture's specification and show no evidence of stretching or loss of tension.

LABOR---35.00
~~Tax --- 1.40~~
TOTAL: ~~\$36.40~~ \$35.00

Sincerely,

J & M AIRCRAFT, INC.



Joseph M. Sylvia,
President

JMS/es

QUALITY CONTROL CHECK

MIA-79-F-A015

- certify that on Jan 19 79 (date) I
received the articles and/or services
listed herein in good condition and in
quantity and quality specified except
as otherwise noted.


Robert L. Oelker, Chief, Miami Field Office
Name, Title Bureau or RM. No. AI-20(MIA)

959 10 30.20.00 3319 2503

*signed. AI-20,
1-29-79*

17

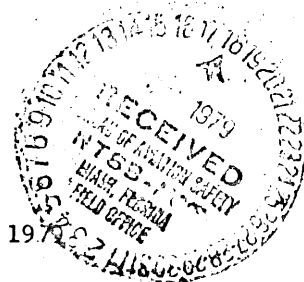
0020 (4)

E. R. A. U. LIBRARY

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MARCHINI INSTRUMENTS, CORP.

F.A.A. APPROVED REPAIR STA. No. 705-32
AVIATION — MARINE — INDUSTRIAL
24 HRS. SERVICE - PHONES: 526-6910 — 888-6543
TWX No. 810-848-8323
P. O. BOX 52-2524 • MIAMI, FLA. 33152 U.S.A.



January 16th, 1979

Mr. Luis Carmona
National Transportation Safety Board
4471 N.W. 36 Street
Miami Springs, Fla. 33166

Reference :

Accident No. = MIA79FA015
A/C Model = Cessna 172
Registration = N733QV
Place = Near Ormond Beach, Fla.
Date = 11-20-78

Dear Sir :

On this date, the instrument described below was presented to us by Mr. Luis Carmona for its examination and possible testing in his presence. Please find below a resume of our findings.

1.- Gyro Horizon P/N C661076-0105, S/N 16610 (Aeritalia)

- a) Instrument showed evidence of damage to its upper and lower right case and to the face. A piece of plastic, which conforms the dial face, was found imbedded between broken glass and dial face.
- b) Instrument could not be tested as presented. The damage in the case appeared to be from squashing vertical forces.
- c) Instrument case had to be destroyed to expose mechanism. Its face shows the aircraft in a wings level nose-down attitude. The rotor could not be tested due to its extensive damage. Gimball ring was also found broken and the bar assembly twisted. The whole inside of the instrument is corroded and broken. Gimball ring and rotor bearings could not be checked due to instrument extensive stage of corrosion.
- d) Nothing was found during this instrument examination to suggest a pre-impact mal-functioning failure.

Should you have any questions, please contact me.

Sincerely yours,

Carlos L. Marchini
Carlos L. Marchini
General Manager

CIM/mvq

QUALITY CONTROL CHECK

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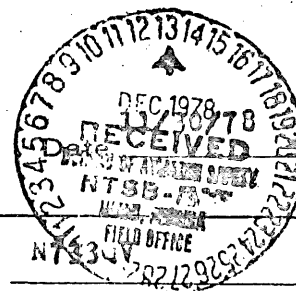
5

ACCIDENT REPORT

20



LYCOMING DIVISION
WILLIAMSPORT, PA.


Name Gordon L. Richter

Date of Occurrence November 21, 1978

Aircraft Cessna 172 - S.N. 68474

Reg. No.

Eng. Model O-320-H2AD

Serial No.

L-1128-76

Engine Hours Since Overhaul 700 Agency Embry-Riddle University
New Rem'd. Overhaul Location Daytona Beach County Volusia State Florida
Owner Embry-Riddle Address Daytona Beach, Florida
Fed. Investigator A. D. Llorente Address Miami Springs, Fla. Phone

Injuries

Occupants		F	S	M	N
1. Pilot	<u>Paul Erling (Instructor)</u>	X			
2.	<u>Blake Frankenberg (Student)</u>	X			
3.	<u>William McGrade (Student)</u>	X			
4.					
5.					
6.					

Aircraft Damage Total

Did You Examine Engine? Yes ☒ No ☐ S.I.R. No. 64745M

Disposition of Engine Released to Embry-Riddle University

What Happened:- See A.M.S.I. report of accident.

Engine was in salt water for seven days. When it was removed, it was transported to Vero Beach, Florida to the Sun Aviation Hangar for tear-down on 11/30/78.

Persons present at teardown were: David Kessell and Chandler Titus from Embry-Riddle, A. D. Llorente from A.T.S.B., A. Yurman from A.M.S.I., and Gordon Richter from Avco Lycoming.

Due to impact damage, the crankshaft flange was broken off. Push rods and push rod shroud tubes were gone from intake and exhaust on both #1 and #2 cylinders. Both hydraulic tappets were missing from #2 cylinder. The carburetor and oil sump were both smashed on impact and were not recovered from the water.

QUALITY CONTROL CHECK

The magneto was recovered but was badly smashed.
All spark plugs were with the engine except #2 bottom. Plugs were RMM 382's.
With spark plugs removed we were able to rotate crankshaft through

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all four cylinders.

Valve train was removed and inspected from all cylinders with no malfunctions found. All four cylinders were full of mud.

Oil pump was removed and found normal. It contained engine oil and mud but rotated freely.

Crankcase assembly was separated and the camshaft and crankshaft were removed.

The crankshaft main and rod journals were miked and found to meet Lycoming specifications in Service Table of Limits, SSP-2070.

All persons at teardown agreed that engine was, or was capable of, producing power.

Sincerely,

AVCO CORPORATION
AVCO LYCOMING DIVISION

Gordon L. Richter

Gordon L. Richter
Service Engineer

GLR/amt

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QUALITY CONTROL CHECK

0026



SUITE 209, 142 E GRANADA BLVD, ORMOND BEACH, FL 32074
(904) 672-7281

22
AVIATION INDUSTRY INSURERS

FIXED BASE OPERATORS
INDUSTRIAL AID
AGRICULTURAL APPLICATORS
ROTORCRAFT
AIRPORTS

REPRESENTING

November 27, 1978

Mr. Donald Llorente
National Transportation Safety Board
Bureau of Accident Investigation
4471 N.W. 36th Street
Miami Springs, Florida 33166



RE: ERAU CESSNA 172 ACCIDENT DATED 11/20/78 P.M.

Dear Mr. Llorente:

As per your request please let this confirm our telephone conversation as follows:

On November 20, 1978 at approximately 8:30 P.M. while watching television in my home with our patio doors open my wife and I heard an airplane crash. Prior to impact the engine r.p.m. was screaming at an extremely high pitch. The engine sound was very distinct and familiar. The aircraft was in a dive or a spin with power on. Our home is located at 113 N Ocean Aire Terrace, Ormond Beach, Florida approximately one or two blocks from the crash site. After hearing the crash I ran outside but was unable to locate the crash site so I reported the crash to the Daytona Beach FAA Control Tower and they notified the proper authorities.

The engine sound was very similar to a past experience I had in a Cessna 172. I was practicing various stalls and got myself into a spin and the engine rpm really began to scream before I was able to reduce power and recover the aircraft.

I am a Commercial pilot and I hold ratings in ASEL, Rotorcraft - Helicopter, Instrument Airplane and Helicopter. My total time is 1,350 hrs and I have at least 75 hrs in a Cessna 172. I own and operate two aviation insurance agencies here in Ormond Beach.

If I maybe of any further assistance please do not hesitate to contact me.

Sincerely,

Thomas K. Coughlin
Thomas K. Coughlin
AIR-SUR
TKC/tc

QUALITY CONTROL CHECK

22
"A LEAD" IN AVIATION INSURANCE

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

STATEMENT OF WITNESS

The purpose of this statement is intended solely for use in determining the facts, conditions and circumstances, and the probable cause of the subject accident.

Date 11/2/79
Place of accident ORMOND BEACH, FLA. Date 11/20/78 Hour _____
Type of vehicle CESSNA 172H
Identification of vehicle N 7339V
What is your name SUZANNE R ALLEY Age 25
Address 211 JOHN ANDERSON DR. ORMOND BEACH, FLA. 32074
Occupation FLIGHT INSTRUCTOR By whom employed EMORY KIDDLE
FLORIDA COLLEGE
Where were you at the time of the accident ON A LOCAL IFR TRAINING FLIGHT

Tell in your own words what you saw or heard before and at the time the accident occurred.
I was flying with a student on a local IFR training flight on the night of Nov 20, 1978. The weather at Daytona Beach airport at the time of our departure was approximately 600' overcast with about 1 mile visibility.
After takeoff from Daytona Beach, we received a clearance to the Deland radio beacon, with instructions to climb 2 and maintain 3000'. We entered the cloud layer at about 600' and broke out on top of the cloud layer at about 2400'. While holding at Deland RDB we were about 600' above the cloud layer. The visibility in top of the cloud layer was approximately 3-5 miles.

QUALITY CONTROL CHECK _____ (Signature)
NSB FORM 6120.11 (Rev. 10/77) (Use reverse side of sheet for diagram and additional statement)
28 (7)

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

STATEMENT OF WITNESS

The purpose of this statement is intended solely for use in determining the facts, conditions and circumstances, and the probable cause of the subject accident.

- Date 11/26/78
- Place of accident _____ Date 11/20/78 Hour _____
- Type of vehicle _____
- Identification of vehicle _____
- What is your name RICHARD J VITTHUM Age 27
- Address 921 DERBY SHIRE DAYTONA BEACH FLORIDA 32014
- Occupation FLIGHT INSTRUCTOR By whom employed EMBRY RIDDLE AERO UNIV.
- Where were you at the time of the accident _____
- Tell in your own words what you saw or heard before and at the time the accident occurred.

DEPARTED DAYTONA BEACH REGIONAL 6:45 FOR LOCAL IFR
TRAINING FLIGHT PROCEEDED DIRECT TO LOW AND HELD AT
3000 FT. ENTERED OVERCAST AT APPROXIMATELY 600 FT.
JUST ON THE TOP AT 3000 FT SKY CLEAR ABOVE OVERCAST,
~~HE~~ CLOUD COVER SOLID THROUGH OUT CLIMB RETURNED FOR NDB
6L DAB BACK OUT APPROX. 600 FT. VISIBILITY APPROX 1 1/2 TO 1 1/4 Mi.
MILES, ARRIVAL AT DAB APPROX. 7:30
AIR SMOOTH ABOVE 300 FT. WINDS OUT OF THE NORTH ON THE
SURFACE APPROX 10 KTS

QUALITY CONTROL CHECK

Richard J Vitthum
(Signature)

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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Daytona Beach ATC Tower

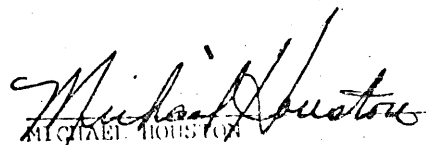
November 22, 1978

The following is a report concerning the accident to aircraft N733QV five miles northeast Ormond Beach Airport, Ormond Beach, Florida, November 21, 1978 at 0137 GMT.

My name is Michael Houston, (MH). I am employed as an Air Traffic Control Specialist by the Federal Aviation Administration at the Daytona Beach Air Traffic Control Tower, Daytona Beach, Florida.

During the period 1930 GMT, November 20, 1978 to 0330 GMT November 21, 1978, I was on duty in the Daytona Beach Tower. I worked the Arrival/Departure (North) Radar position.

During the time period 0127 GMT to 0137 GMT, N733QV was operating within my airspace flying a 5-mile radius of the Ormond Beach VORTAC at a block altitude of 3,000 to 4,000 feet. At 0134 GMT, I instructed N733QV to descend to and maintain 3,000 feet to insure vertical separation from an overflight at 4,000 feet. At 0135 GMT, N733QV advised me that he was leaving 3,500 for 3,000 feet. No further transmissions were received from the aircraft. At approximately 0137 GMT, I lost the radar target of N733QV 5 miles NE of Ormond VORTAC. Attempts to establish radio communications with the aircraft were unsuccessful.


MICHAEL HOUSTON
Daytona Beach Tower

ORMOND BEACH, FLORIDA, 11-20-78, CESSNA 172N, N733QV, MIA-79-F-A015

QUALITY CONTROL CHECK

0030 (11)

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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Daytona Beach ATC Tower

November 22, 1978

The following is a report concerning the accident to aircraft N733QV
5 miles northeast Ormond Beach Airport, Ormond Beach, Florida, November
21, 1978.

My name is James L. Moore, (JL). I am employed as an Air Traffic Control
Specialist by the Federal Aviation Administration at the Daytona Beach
Air Traffic Control Tower, Daytona Beach, Florida.

During the period 2000 GMT, November 20, 1978 to 0400 GMT November 21, 1978,
I was on duty in the Daytona Beach Tower. I worked the Arrival/Departure
(North) Radar position.

At approximately 0112 GMT, N733QV departed Daytona Beach Airport and
contacted me. I radar identified N733QV and issued him a clearance direct
to the Ormond Beach VORTAC to maintain VFR conditions on top. At 0114 GMT,
N733QV reported on top and advised that he wanted to do airwork in the
vicinity of the Ormond VORTAC. I issued N733QV a clearance to operate
within a 5-mile radius of the Ormond VORTAC at a block altitude of 3,000
to 4,000 feet. At 0127 GMT, I was relieved of my position by ATCS
Michael Houston.


JAMES L. MOORE
Daytona Beach Tower

ORMOND BEACH, FLORIDA, 11-20-78, CESSNA 172N, N733QV, MIA-79-F-A015

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QUALITY CONTROL CHECK

3031 (12)



OFS No.: 6-77

DATE: 11/8/77

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COLLEGE OF AVIATION TECHNOLOGY
OFFICE OF FLIGHT STANDARDS

FLIGHT DIRECTIVE

SUBJECT: LIMITATIONS ON UNUSUAL ATTITUDES and RECOVERIES

Effective immediately the following limitations are placed on the performance of practice unusual attitudes and recoveries:

- 1) ALTITUDE: Minimum 2000' AGL
- 2) PITCH: Maximum 30°
- 3) BANK: Maximum 60°
- 4) RECOVERY: Return to original altitude, after stabilizing in straight & level flight.

1. Instrument Flying Handbook, AC 61-27B
DOT-FAA p. 103

This procedure will be incorporated into all Procedure Guides at the next printing.

Special consideration should be noted while performing unusual attitudes at night or during periods of reduced visibility do to the fact that there may be some loss of outside references resulting in temporary spatial disorientation or vertigo.

R.R. Lewis

R.R. Lewis
Chief Flight Instructor

QUALITY CONTROL CHECK

0054

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OF No.: 6-77

DATE: REVISED 12/22/78

COLLEGE OF AVIATION TECHNOLOGY
OFFICE OF FLIGHT STANDARDS

FLIGHT DIRECTIVE

SUBJECT: BASIC ATTITUDE INSTRUMENT, UNUSUAL ATTITUDE,
and INSTRUMENT FLYING LIMITATIONS

THIS FLIGHT DIRECTIVE SUPERSEDES FD 6-77, DATED 11/08/77

THE FOLLOWING LIMITATIONS ARE PLACED ON THE PERFORMANCE AND PRACTICE OF BASIC ATTITUDE INSTRUMENT MANEUVERS, UNUSUAL ATTITUDES, AND INSTRUMENT FLYING:

- 1) Basic Attitude Instrument (BAI) maneuvers and Unusual Attitudes will be performed only:
 - a) during basic VFR conditions; day or night.
 - b) during conditions in which the flight instructor can maintain good outside visual references; day or night.
 - c) during NIGHT operations when, in the judgement of the flight instructor, the existing cockpit lighting is adequate for the operation being performed.
 - d) when, in the judgement of the flight instructor, that operation can be safely performed.
- 2) Basic Attitude Instrument (BAI) maneuvers and Unusual Attitudes shall not be performed:
 - a) during any condition when the flight instructor does not have adequate outside visual references and must rely on the aircraft flight instruments to monitor and/or effect a recovery from any flight maneuver or flight situation.
 - b) during NIGHT operations when operating the aircraft above a ceiling (VFR-ON-TOP).
- 3) Unusual attitudes shall be initiated at an altitude that will allow the aircraft to be safely recovered from the maneuver at no lower than 1500 feet AGL.
- 4) Unusual attitudes shall be performed one at a time; upon completion of each unusual attitude, the aircraft will be recovered, stabilized in straight & level flight, and returned to the appropriate altitude as stated in item #3 above, prior to initiating another unusual attitude.

ORMOND BEACH, FLORIDA, 11-20-78, CESSNA 172N, N733QV, MIA-79-F-A015

QUALITY CONTROL CHECK

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- 5) Flight Instrument Covers, of any kind, shall not be used to cover or otherwise restrict the use of any flight instrument, when the flight instructor does not have adequate outside visual references and must rely on the aircraft flight instruments to monitor and/or effect a recovery from any flight maneuver or flight situation.
- 6) The student or flight instructor's visibility shall not be restricted by the use of any view limiting device(hood) when operating the aircraft in conditions less than basic VFR; day or night.

SPECIAL CONSIDERATION SHOULD BE NOTED WHILE PERFORMING UNUSUAL ATTITUDES AND OTHER BASIC FLIGHT MANEUVERS AT NIGHT AND DURING CONDITIONS OF REDUCED VISIBILITY DUE TO THE FACT THAT THERE MAY BE SOME LOSS OF OUTSIDE VISUAL REFERENCES RESULTING IN TEMPORARY SPATIAL DISORIENTATION OR VERTIGO, BOTH TO THE STUDENT and FLIGHT INSTRUCTOR.

William A. Martin
William A. Martin
Director, Office of
Flight Standards

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QUALITY CONTROL CHECK

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SECTION III

Cockpit Transcript

pages 30-50

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

DATE: December 8, 1978

AIRPORT TRAFFIC CONTROL TOWER
P. O. Box 9187
Daytona Beach, Florida 32020

IN REPLY
REFER TO:

SUBJECT: Transcription concerning the accident of N733QV a Cessna 172
on November 21, 1978 at 0137 GMT

FROM: Chief, Daytona Beach ATC Tower

TO:

This transcription covers the time period from November 21, 1978,
0055 GMT to November 21, 1978, 0143 GMT.

Agencies making transmissions

Abbreviation

✓ Cessna Centurian	SAC 25
Daytona Beach Ground Control	GC
✓ Cessna Skyhawk N733QV	N3QV
✓ Cessna Skyhawk N73702	N702
✓ Cessna Skyhawk N733SK	N3SK
✓ National Airlines Flight 121	NA121
✓ Civil Air Patrol Cherokee N9504C	CAP04C
Daytona Beach Local Control	LC
Arrival/Departure Radar (North)	NR
Jacksonville ARTC Center	ZJX
Daytona Beach Tower	TWR
✓ Cessna Skyhawk N84ER	N84ER
Jacksonville Approach Control	JAX
✓ Cessna Skylane N34154	N154
Miami ARTC Center	ZMA
Orlando Approach Control	ORL
✓ Piper Cherokee N43044	N044

I HEREBY CERTIFY that the following is a true transcription of the
recorded conversation pertaining to the subject accident.

G. F. Smith
G. F. SMITH

QUALITY CONTROL CHECK

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(0055) (Transcript Begins)

(0056)

(0057)

(0058)

0059:16 SAC25 Daytona Ground SAC two five

0059:22 GC SAC two five go ahead

0059:23 SAC25 Yes sir IFR to Jacksonville please clearance
on request taxi information

0059:27 GC SAC two five taxi to runway three four wind
three five zero at one five altimeter three
zero one niner hold short of six left

0059:35 SAC25 Okay give me progressive sir straight out

0059:39 GC Okay just you can looks like good there just
taxi south and hold short of the first runway
you come to

0059:43 SAC25 Okay

0059:45 GC Did you have information victor

0059:47 SAC25 Yes sir

0100:12 GC SAC two five straight ahead taxi across six
left

0100:15 SAC25 Okay

0100:26 GC You'all gonna make regular runs into Daytona
now

0100:28 SAC25 Yeah every Monday night

0100:30 GC OK Roger

0100:31 SAC25 And we hope to extend it on to five nights a
week

QUALITY CONTROL CHECK

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0100:35 GC Yeah I know we work your overflights out of Orlando and Jacksonville every night I am surprised to see you come in here today

0100:42 SAC25 We've been doing this is evidently your shift hasn't caught up we've been doing this for about six weeks

0100:47 GC Oh, roger that well I've been normally working days on Monday and I got called in today so that's probably the reason.

0100:53 SAC25 Unhuh

0100:56 SAC25 Calm over here tonight though you usually got a lot of training going on in the pattern

0101:00 GC Well that's a mild way to put it - it's nothing to have ten or twelve airplanes in the pattern out here at night on the parallel runways (pause) and the next left will be the approach or the hold line for three four

0101:15 SAC25 Okay sir we'll just wait here for our clearance

0101:18 GC Okay advise when ready to copy

0101:20 SAC25 Yeah go ahead

0101:22 GC SAC two five is cleared to Jacksonville as filed maintain two thousand expect five thousand one zero minutes after departure fly runway heading departure frequency one two three point nine squawk zero three zero zero.

0101:33 SAC25 Okay as filed two thousand five thousand ten after runway heading one twenty three nine and three hundred on the squawk sir thank you

0101:41 GC SAC two five that's correct advise me on this frequency when ready for departure

0101:43 SAC25 Alright sir

0101:49 N3QV Daytona Ground this is Cessna seven three three Quebec victor at the Riddle ramp would it be possible to get a IFR clearance go VFR on top to thirty five hundred feet

QUALITY CONTROL CHECK

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0102:01 GC Cessna three Quebec victor affirmative runway
three four do you have information victor

0102:05 N3QV That's affirmative ground we still have a
runup to do

0102:09 GC Okay we'll put your clearance on request and
do you want it northbound or southbound

0102:13 N3QV (unintelligible) be fine

0102:14 GC Roger

0102:39 SAC25 Daytona SAC twenty five is ready to go three four

0102:41 GC SAC two five stand by just a minute

0102:45 SAC25 Okay

0102:54 GC SAC two five contact tower one two zero point
seven good night

0102:57 SAC25 Two zero point seven good night

0103:05 N702 Daytona Beach ground Cessna seven three seven
zero two at DBA hanger request taxi west side
of tower over

0103:12 GC Cessna seven oh two say again where you want
to go

0103:15 N702 Tower seven oh two is at the hangar request
taxi to west side of the tower over

0103:19 GC Cessna seven zero two taxi as requested

0103:21 N702 Seven zero two thank you

0104:38 N3SK Ground three sierra kilo we're off of six left
(unintelligible) taxi to Riddle

0104:43 GC Cessna three sierra kilo ah taxi and hold short
of runway three four

0104:44 N3SK Three sierra kilo roger

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QUALITY CONTROL CHECK

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0104:59 GC Cessna three sierra kilo taxi across runway
three four

0105:01 N3SK Three sierra kilo roger

(Pause)

You find that airplane you're looking for

0105:10 GC Not yet

0106:10 N3QV Daytona Ground seven three three Quebec
victor's Riddle ramp taxi to active take
off

0106:13 GC Cessna three Quebec victor runway three four
via the north south taxiway hold short of
three four and six left

0106:23 N3QV Roger

0107:01 NA121 National one twenty one to Orlando

0107:03 GC National one twenty one roger stand by

0107:08 GC Cessna three Quebec victor taxi across runway
three four

0107:10 N3QV Three Quebec victor

0107:12 GC National one twenty one's cleared as filed
maintain five thousand expect eight thousand
one zero minutes after departure fly runway
heading departure one two five point three
five squawk zero seven zero four

0107:28 NA121 Five thousand eight thousand ten after runway
heading one two five thirty five zero seven
three four on the squawk

0107:37 GC Zero seven zero four on the squawk

0107:39 NA121 Okay

0107:41 GC Okay that's all correct advise when ready to
taxi

QUALITY CONTROL CHECK

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5.

0107:55	GC	Cessna three Quebec victor taxi across six left without delay
0107:58	N3QV	Three Quebec victor
0108:06	GC	Cessna three Quebec victor advise when ready to copy clearance
0108:14	N3QV	Three Quebec victor go ahead
0108:17	GC	Cessna seven three three Quebec victor's cleared to the Ormond Beach VOR via radar vectors climb to VFR on top if not on top at two thousand maintain two thousand and advise and they can expect a higher altitude to climb on top ten minutes after departure
0108:34	N3QV	Three Quebec victor is cleared to the Ormond Beach VOR climb to VFR on top if not on top at two thousand advise expect higher ten minutes after departure
0108:46	GC	Three Quebec victor that's all correct advise me on this frequency when ready for departure
0108:49	N3QV	Three Quebec victor
0109:30	N3QV	Three Quebec victor is ready to go on six three four
0109:35	GC	Three Quebec victor roger stand by on this frequency
0109:38	N3QV	Three Quebec victor
0109:42	CAP04C	Daytona Beach ground control Civil Air Patrol nine five zero four Charlie
0109:47	GC	Civil Air Patrol zero four Charlie go ahead
0109:49	CAP04C	Roger we're here at Nova we need to get taxi clearance to take off we're going up towards Ormond Beach
0109:55	GC	Cessna three Quebec victor contact tower one two zero point seven

QUALITY CONTROL CHECK

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0109:58 N3QV Three Quebec victor

0110:11 N3QV Daytona tower three Quebec victor is ah ready to go for takeoff

0110:15 LC Cessna seven three three Quebec victor Daytona taxi into position and hold runway three four

0110:20 N3QV Three Quebec victor roger

0110:32 LC Seven three three Quebec victor cleared for takeoff runway three four wind three five zero at one three

0110:37 N3QV Seven three three Quebec victor roger

0111:15 LC Seven three three Quebec victor contact departure good day

0111:18 N3QV Three Quebec victor would that be twenty three nine

0111:21 LC Yes sir northbound would be twenty three nine

0111:25 N3QV Thank you

0111:39 NR Yes sir

0111:40 ZJX See the target about two miles north of Worms intersection

0111:43 NR Yes sir southbound

0111:44 ZJX Yes he's at eight thousand how about me taking him on down

0111:48 NR That's approved what's his name

0111:50 ZJX One six five four tango

0111:52 NR Five four tango

0111:53 ZJX One six five four tango

0111:55 NR Okay

0111:57 ZJX CD

QUALITY CONTROL CHECK

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0112:00	NR	And his type
0112:01	ZJX	He is a Cessna four fourteen
0112:02	NR	Thank you
0112:02	ZJX	CD
0112:02	N3QV	Daytona-Approach Cessna seven three three Quebec victor is with you out of eight hundred climbing to two thousand feet for VFR on top
0112:08	NR	Three Quebec victor Daytona cleared direct Ormond to maintain VFR conditions on top if not on top by seven thousand maintain seven thousand and advise.
0112:19	N3QV	Three Quebec victor roger up to seven
0112:25	N3QV	Three Quebec victor would you like us to squawk VFR or on a different code
0112:30	NR	Three Quebec victor say again
0112:33	N3QV	Three Quebec victor would you like us to squawk VFR or a different code
0112:37	NR	What are you on now sir
0112:39	N3QV	Twelve hundred
0112:42	NR	Squawk zero three hundred until reaching VFR conditions on top report VFR conditions on top
0112:49	N3QV	Three Quebec victor
0112:55	SAC25	And Daytona SAC twenty five checked in with you at five thousand
0112:58	NR	Thank you sir
0113:34	NR	Three Quebec victor say altitude leaving
0113:36	N3QV	Three Quebec victor is climbing through one point five
0113:39	NR	Alright are you proceeding direct Ormond now

QUALITY CONTROL CHECK

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0113:42 N3QV Three Quebec victor that's affirm

0113:45 NR Alright

0114:21 NR Three Quebec victor what were the bases

0114:29 N3QV Three Quebec victor estimated six hundred the tops at one thousand eight hundred

0114:35 NR Alright understand you're VFR on top now

0114:37 N3QV That's affirm

0114:38 NR Alright say your intentions

0114:40 N3QV Okay we'd like to do some airwork up around the Ormond Beach area

0114:46 NR Alright sir squawk one two zero zero maintain VFR and you can give me a call when you're ready to come back into Daytona

0114:56 N3QV Three Quebec victor roger can we get an expect further clearance time

0115:07 CAP04C Daytona Beach Departure Control Civil Air Patrol nine five zero four Charlie's with you out of three four level at five hundred feet we need vectors to where you lost the aircraft off of radar

0115:17 NR Alright zero four Charlie maintain special VFR conditions at all times while in the control zone fly heading of three zero zero

0115:29 CAP04C Okay left to three zero zero for zero four Charlie

0115:36 NR And three Quebec victor understand you want to cancel and go VFR and do some air work

0115:42 N3QV Three Quebec victor that's affirmative airwork I just wondered if you could give us expect further clearance time

0115:52 NR If you're cancelling and going VFR sir there you're on your own until you're ready to come back into Daytona alls you need to do is call me when you're ready to come back to Daytona for a clearance back in

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QUALITY CONTROL CHECK

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0116:03 N3QV Three Quebec victor okay we'll stay with you that way

0116:37 NR And three Quebec victor I'm not sure I think we've got a little communication problem here do you want to stay IFR

0116:46 N3QV Three Quebec victor I say again I'd like to do airwork vicinity of the Ormond Beach VOR IFR or VFR is no problem

0116:56 NR Why it's up to you sir if you want IFR say so and I'll provide IFR separation if not you can go VFR and do as you please

0117:05 N3QV Three Quebec victor will you give us a block clearance say for three to four thousand feet

0117:11 NR Alright sir cleared to operate within a five mile radius of the Ormond VOR maintain block altitude three thousand through four thousand

0117:24 N3QV Three Quebec victor (unintelligible) thank you much

0117:26 NR Alright and squawk zero three hundred please

0117:28 N3QV Three Quebec victor

0117:31 NR Three Quebec victor revise your clearance cleared to operate in all quadrants of the Ormond VOR within a five mile radius maintain block altitude three thousand through four thousand

0117:41 N3QV Three Quebec victor

0117:57 NR And three Quebec victor can you can you do your airwork other than right over the Ormond VOR runway three four is in use and I will have some departures coming off of there

0118:10 N3QV Three Quebec victor whichever is best for you no problem

0118:14 NR Okay tell you what maintain block altitude three thousand through four thousand remain cleared to operate from the two seven zero radial Ormond through the zero nine zero radial of Ormond north of the Ormond VOR

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QUALITY CONTROL CHECK

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0118:34 N3QV Three Quebec victor two seven zero through the zero nine zero north of the VOR okay

0118:40 NR Yes sir and remain within five nautical miles north of the VOR

0118:44 N3QV Three Quebec victor

0118:46 NR Okay Civil Air Patrol zero four Charlie Daytona

0118:51 CAP04C Zero four Charlie go ahead

0118:53 NR Yes sir you receiving the Ormond VOR

0118:57 CAP04C Yes sir we are

0118:58 NR Alright sir the aircraft I lost radars and radio with the aircraft approximately the two four zero twelve mile DME of the Ormond VOR

0119:08 CAP04C Okay that's the two four zero degree radial twelve DME roger

0119:12 NR And what's your altitude zero four Charlie

0119:14 CAP04C We're seven hundred feet

0119:16 NR Alright and how's your visibility

0119:18 CAP04C We got about three about two and a half three miles

0119:22 NR Okay sir

0119:38 NR He's released two thousand runway heading

0119:41 TWR OK

0120:33 NR Test one two three three two one

0120:43 NR Alright zero four Charlie what radial are you on now

0120:44 CAP04C We're showing about the two four zero degree radial and we got eight point seven DME out

QUALITY CONTROL CHECK

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0120:48 NR Okay it's right in your general area now possibly just a hair to the west northwest of you

0121:27 CAP04C Okay we'll head on up that way just a little bit and see if we can find him

0121:28 NR Okay

0121:32 CAP04C Approach zero four Charlie

0121:35 NR Go ahead sir

0121:37 NR Zero four Charlie go ahead

0121:39 CAP04C Do you have any kind of towers or high obstructions around five hundred feet in this vicinity

0121:46 NR Zero four Charlie not that I know of stand by let me grab a chart and double check sir

0121:53 CAP04C Okay

0122:13 N84ER Departure eight four echo romeo is passing through four hundred to two thousand

0122:17 NR Eight four echo romeo Daytona Departure radar contact climb and maintain one thousand six hundred.

0122:27 N84ER One thousand six hundred eight four echo romeo

0122:31 NR Eight four echo romeo say your intentions

0122:37 N84ER Eight four echo romeo we would like to hold at the DeLand NDB shoot the NDB two three approach into DeLand and then the NDB six left approach to Daytona

0122:45 NR Alright climb and maintain three thousand

0122:49 N84ER Okay eight four echo romeo going to three

0122:52 NR and turn left to a heading of two seven zero eight four echo romeo

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QUALITY CONTROL CHECK

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0122:56	N84ER	Roger left to two seven zero
0123:20	NR	Zero four Charlie Daytona
0123:23	N04C	Zero four Charlie go
0123:24	NR	Yes sir it's about back to your northeast about four or five miles
0123:29	N04C	Okay we'll head on back around that way
0123:31	NR	Alright
0123:45	NR	Tower
0123:47	TWR	Go ahead
0123:48	NR	Look at your VFR obstruction chart up there underneath the glass
0123:52	TWR	Yeah
0123:54	NR	Give me highest obstruction southwest of Ormond within about ten to fifteen mile arc of Ormond
0124:00	TWR	Alright just a minute
0124:01	NR	Southwest
0124:13	TWR	Northwest of DeLand and its (pause)
0124:15	NR	Alright zero four Charlie Daytona
0124:25	N04C	Zero four Charlie go ahead
0124:28	NR	Yes sir southwest of the Ormond VOR the highest obstruction three hundred and forty feet
0124:32	N04C	Okay roger we're going to be at five hundred feet
0124:35	NR	Alright sir
0124:44	N04C	And Daytona Zero four Charlie at seven hundred feet we started scudding the bottom of the clouds

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0124:49	NR	Okay sir
0124:52	NR	Eight four echo romeo say your altitude
0124:55	N84ER	Through one thousand five hundred
0124:57	NR	Alright turn left proceed correction leaving twenty six hundred feet proceed direct to the DeLand radio beacon maintain three
0125:04	N84ER	Roger eight four echo romeo
0125:15	NR	SAC two five squawk four two six zero
0125:22	SAC25	Twenty five
0125:25	NR	Squawk four two six zero
0125:27	SAC25	Yes sir I've got it thank you
0125:31	NR	JAX sixty two late handoff
0125:35	JAX	That's okay he'll probably be late getting to you
0125:38	NR	It's SAC twenty five just about Saint Augustine
0125:41	JAX	Yeah he's radar contact what's his altitude
0125:43	NR	He's level five
0125:45	JAX	Roger
0125:46	NR	Alright I'm sorry about that
0125:47	JAX	No sweat
0125:50	NR	Okay
0125:51	NR	SAC two five contact JAX approach control one two four point four
0125:54	SAC25	Twenty four four good night sir see you next week
0125:57	NR	Right

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0126:25 NR Eight four echo romeo what's your altitude
0126:28 N84ER Through two thousand six hundred
0126:30 NR Alright turn left proceed direct DeLand
0126:32 N84ER Roger eight four echo romeo
0126:39 NR Eight four echo romeo contact Daytona radar
now one twenty five thirty five
0126:43 N84ER Okay (unintelligible)
0126:46 NR Zero four Charlie your're right in the general
vicinity right now sir
0126:50 CAP04C Okay we're looking but we don't see a dang gone
thing out here
0127:00 NR Alright zero four Charlie try just about a mile
and a half northwest of you maintain VFR
conditions at all times
0127:06 CAP04C Okay a mile and a half north
0127:12 NR Zero four Charlie are you DME equipped
0127:15 CAP04C Yes sir we are
0127:16 NR What's your DME from Ormond at this time
0127:19 CAP04C Seven point six
0127:21 NR Say again
0127:22 CAP04C We got seven point six DME out of Ormond
0127:25 NR Alright try about in VFR conditions at all
times try about one zero miles from the
Ormond VOR
0127:34 CAP04C Okay one zero out of Ormond
0127:36 NR Yes sir just about due west of where you're
at now
0127:40 CAP04C Okay we'll turn on around and see if we can
find him

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0129:42	CAP04C	Approach control zero four Charlie
0129:43	NR	Go ahead sir
0129:46	CAP04C	Zero four Charlie would like an instrument clearance to come back into Daytona
0129:50	NR	Zero four Charlie turn left heading of one six zero climb and maintain one thousand six hundred for vectors for the ILS runway six left final approach course
0129:59	CAP04C	Roger up to sixteen hundred and two four zero's the heading
0130:03	NR	One six zero
0130:05	CAP04C	Okay one six zero and up to sixteen hundred feet
0130:08	NR	Go ahead
0130:08	JAX	Five north of Astor squawking zero one hundred November one five four at four thousand
0130:13	NR	One five four radar contact MH
0130:14	JAX	AB
0130:36	N154	Daytona Approach Cessna three four one five four with you level at four
0130:39	NR	Three four one five four Daytona Approach ident Daytona altimeter three zero two zero maintain four thousand
0130:47	(Unknown)	Easy on the brake
0130:49	(Unknown)	Okay
0131:09	N154	What have you got there at Daytona this is one five four
0131:12	NR	Daytona weather measured six hundred overcast visibility two in haze altimeter three zero one nine
0131:20	N154	Thank you

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0131:40 NR Inbound
0131:43 TWR Go ahead
0131:44 NR Zero four Charlie ILS full
0131:47 TWR DC
0131:47 NR MH
0131:52 NR Zero four Charlie turn left heading one four zero
0131:55 CAP04C Understand heading one four zero for zero four Charlie

(0132)
0133:00 NR Three QV Daytona
0133:04 N3QV Go ahead Daytona this is three Quebec victor
0133:07 NR Three QV remain at three thousand until I give you a later time to use four thousand again I have an overflight at four thousand maintain three thousand
0133:19 N3QV Okay three Quebec victor leaving three point five for three
0133:23 NR Roger
0133:31 NR Zero four Charlie turn left heading zero nine zero six miles from the outer marker maintain one thousand six hundred till established on the localizer inbound cleared ILS six left approach
0133:42 CAP04C Okay that was zero nine zero we're cleared for the ILS six left approach
0133:54 CAP04C And Daytona zero four Charlie what's the current winds
0133:59 NR Daytona wind three six zero at one five
0134:03 CAP04C Zero four Charlie roger
0134:31 NR And zero four Charlie contact tower one two zero point seven
0134:34 CAP04C Okay one twenty point seven thank you and have a good afternoon

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0135:44 N154 Approach one five four you don't have the latest Melbourne weather do you

0135:48 NR Stand by please

0135:52 NR Miami Melbourne sixty two twenty nine

0135:55 ZMA Melbourne

0135:56 NR You don't happen to have the Melbourne weather do you

0135:59 ZMA I most certainly do let me punch it right up here
(pause)
Are you ready to copy

0136:03 NR Go ahead

0136:07 ZMA The zero one zero zero weather estimated seven hundred feet broken five miles visibility in haze

0136:18 NR Okay

0136:19 ZMA The temperature is seven four dew point six seven wind zero one zero at niner knots altimeter three zero one five ZJ

0136:32 NR Hey that sounds good thank you very much

0136:34 ZMA Okay

0136:34 NR MH

0136:38 NR The zero one hundred zulu weather for Melbourne estimated seven hundred broken visibility five haze temperature seven four dew point sixty seven wind zero one zero at niner

0136:54 N154 One five four thank you

0137:52 NR Three QV Daytona

0137:59 NR Cessna seven three three Quebec victor Daytona

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0138:09 NR Cessna seven three three Quebec victor
Daytona

0138:24 NR Cessna three three QV Daytona

0138:35 NR Daytona

0138:36 ORL Daytona this is the supervisor at Orlando

0138:39 NR Yes sir

0138:40 ORL You all ever locate three four eight five
papa

0138:42 NR Eight five papa

0138:42 ORL Right

0138:46 NR No we sure haven't

0138:47 ORL Well who took the handoff over there do
you remember

0138:49 NR No I'll tell you what the supes over here
I'll let him you talk to him

0138:54 ORL Let me talk to him

0138:54 NR Okay

0139:04 NR Seven three three QV Daytona Approach

0139:25 NR Cessna three QV Daytona Approach

0139:37 NR Cessna three QV Daytona Approach

0139:52 NR Cessna seven three three Quebec victor
Daytona Approach

0140:02 (Unknown) (Unintelligible) victor are you

0140:05 (Unknown) No

0140:07 (Unknown) Thank you

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0140:15 NR Cessna seven three three QV Daytona Approach
0140:29 NR Cessna seven three three QV Daytona Approach
over
0140:32 (Unknown) Five hundred for two thousand
0140:35 NR Who's that
0140:36 N044 Four three zero four four
0140:47 NR Calling Daytona Approach you're going to have
to say again you were blocked out
0140:53 N044 Daytona Approach four three zero four four
with you out of nine hundred
0140:59 NR Zero four four Daytona Approach roger radar
contact turn left heading of two four zero
climb and maintain four thousand
0141:11 N044 Two four zero and up to four four three zero
four four
0141:16 NR Cessna three QV Cessna three QV Daytona Approach
0141:29 NR Zero four four Daytona
0141:33 N044 Zero four four
0141:35 NR Roger maintain two thousand until further
advised climb and maintain two thousand
0141:39 N044 Zero four four wilco maintain two
0141:42 NR Cessna three three Quebec victor Daytona Approach
if you hear reset your transponder and squawk
zero three zero zero
0142:19 N044 Zero four four level at two
0142:20 NR Zero four four roger
0143:09 NR Zero four four turn left heading two zero
zero climb and maintain four thousand
0143:14 N044 Two zero zero out of two for four zero four four
0143:19 NR And zero four four contact Daytona Approach
now one twenty five thirty five

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0143:26 NO44

Twenty five thirty five zero four four

0143:27

(Transcript ends)

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