## APU fire on a Boeing 737-300 landing at Colorado Springs, April 16, 1997

Micro-summary: This Boeing 737-300 had an APU fire on short final.

## Event Date: 1997-04-16 at 2050 MDT

Investigative Body: National Transportation Safety Board (NTSB), USA

Investigative Body's Web Site: http://www.ntsb.gov/

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1. Accident reports can be and sometimes are revised. Be sure to consult the investigative agency for the latest version before basing anything significant on content (e.g., thesis, research, etc).

2. Readers are advised that each report is a glimpse of events at specific points in time. While broad themes permeate the causal events leading up to crashes, and we can learn from those, the specific regulatory and technological environments can and do change. Your company's flight operations manual is the final authority as to the safe operation of your aircraft!

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National Transportation Safety Board NTSB ID: FTW97IA160 Aircraft Registration Number: N962WP										
FACTUAL REPORT	FACTUAL REPORT Occurrence Date: 04/16/19						one			
AVIATION ETYBON	Occurrence Type: Incident Investigated By: NTSB									
Location/Time										
Nearest City/Place	State	Zip								
COLORADO SPGS	СО	80906 2050 MDT								
Airport Proximity: On Airport Distance From Landing Facility: Direction From Airport:										
Aircraft Information Summary										
Aircraft Manufacturer         Model/Series         Type of Aircraft										
Boeing			737-300				Airplane			
Sightseeing Flight: No		Ai	r Medical Tr	ansport Flight: N	0					
Narrative										
<ul> <li>Pacific Airlines flight 169 from Houston, Texas, to Colorado Springs, Colorado, had an auxiliary power unit (APU) fire while on final approach to land at Colorado Springs. There was no damage to the aircraft and no injuries to the 5 crew or 120 passengers. The flight was operating under 14 CFR Part 121 when the incident occurred and an IFR flight plan was filed.</li> <li>According to the pilot in command, the APU fire warning activated when on final approach approximately 200 feet above ground level. The crew performed the appropriate procedures and shortly after landing, the fire warning light extinguished. They had the fire department inspect the aircraft and follow the aircraft as it taxied to the gate where the passengers were deplaned in normal fashion.</li> <li>Inspection revealed there had been a fire in the APU which was contained in the compartment. Visible damage was limited to the exhaust gas temperature (EGT) wiring harness. The wiring harness was replaced and the APU was test run at the facilities of Triumph Air Repair, Phoenix, Arizona. In attendance were the NTSB Investigator-in-Charge, representatives of Western Pacific Airlines, Boeing Commercial Airplane Company, Triumph Air Repair, FAA, and Allied Signal, who manufactured the APU.</li> <li>Documents provided by Western Pacific Airlines provided information that the APU (Allied Signal Series 85 P/N P40108) had a total time of 25,976 hours and 351 hours since overhaul. According to</li> </ul>										
maintenance records, the APU had consumed 3 quarts of oil in the preceding 167 hours of service and 2 quarts in the preceding 57 hours. The maintenance manual does not specify maximum oil consumption limits.										
The APU was visually inspected and boroscoped to determine its condition. It was then mounted in a test cell and a normal start sequence was initiated. The start proceeded in a normal fashion until the APU accelerated to approximately 35% revolutions per minute (rpm) when the start attempt was aborted due to high turbine bearing scavenge pressure and smoke in the exhaust. The normal turbine bearing scavenge pressure is a vacuum of 0 to minus 25 psi and the recorded pressure was in excess of 15 psi. Following this attempted start, the APU was removed from the test cell for inspection.										
Visual inspection provided evidence of turbine oil on all surfaces of the exhaust assembly.										
Disassembly inspection provided evidence that the carbon element of the seal assembly (P/N 693616) was scored around its circumference. Oil residue coking at the aft face of the seal provided evidence that this was the source of the oil leak which ignited in the exhaust containment area.										
The seals are on each side of an oil cavity that is scavenged by the oil pump. Witness marks provided evidence that the cavity had become pressurized from the second impeller seal surface										
	FACTUAL REPORT - AVIATION Page 1									

National Transportation Safety Board	NTSB ID: FTW97IA160	
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AVIATION ETYBOR	Occurrence Type: Incident	

## Narrative (Continued)

forcing oil across the aft turbine seal into the combustion gas path. Examination determined that the cause of the oil leak into the exhaust was from leaking oil seals P/N 3609143-4 and P/N 693616-1.

According to Triumph Air Repair, during the past year they have experienced several rejections of new seal assemblies. The seals were rejected because they would not hold sufficient vacuum during assembly or final testing.

According to Allied Signal, turbine seal leakage is a normal wear-out item on 85 series APUs. Leakage of oil in sufficient quantities to result in burning of oil outside of the APU can generally be caused only by leakage of compressed air past the forward (compressor side) turbine cavity seal. The subsequent pressurization of the turbine cavity forces oil past the aft turbine seal into the hot gas stream.

Allied Signal technicians said that seal leakage was a common problem in the 1960s, 1970s, and into the 1980s. In 1988, Allied Signal incorporated changes to both the turbine seal and seal running surface that eliminated such leakage. The seal running surface, which is applied to the shaft of the second-stage impeller, was changed from a Metco spray to Tungsten carbide. All second stage impellers processed by Allied Signal since 1988 have had the Tungsten carbide coating; however, the older style of coating was also left in the repair manual due to the difficulty for some operators to obtain the Tungsten carbide treatment.

The Western Pacific APU which had been overhauled by Triumph Air Repair used the Metco spray coating in compliance with the repair manual.

National Transportation Safety Board	BID:	FTW9	7IA160									
FACTUAL REPORT	urrence Date: 04/16/1997											
<b>ÄVIATION</b>	urrence Type: Incident											
Landing Facility/Approach Informa	tion											
Airport Name		Airpor	rport ID: Airport Elevation Runway Used Runway Length								nway Width	
COLORADO SPRINGS		cos	6	6184 Ft	MSL	17L	-	1350	0	15	0	
Runway Surface Type: Concrete												
Runway Surface Condition: Dry												
Type Instrument Approach: Visual												
VFR Approach/Landing: Full Stop; Straight-in												
Aircraft Information												
Aircraft Manufacturer Boeing			Model/ 737-3	Series 00					Serial N 23748	Number 8		
Airworthiness Certificate(s): Transport												
Landing Gear Type: Retractable - Tricycle												
Homebuilt Aircraft? No         Number of Seats: 145         Certified Max Gross Wt.         138500 LBS         Number of Engines: 2								es: 2				
Engine Type: Turbo Fan	Engine Manufacturer:Model/Series:GECFM56-3-B2							Ra 22	ted Power: 2000 LBS			
- Aircraft Inspection Information												
Type of Last Inspection	Type of Last Inspection         Date of Last Inspection         Time Since Last Inspection         Airframe Total Time									otal Time		
Continuous Airworthiness		04/1	1997					14 Ho	ours	2	25952 Hours	
- Emergency Locator Transmitter (ELT) Ir	oformation											
ELT Installed?	ELT Operated? ELT Aided in Locating Accident Site?											
Owner/Operator Information												
Registered Aircraft Owner		s	Street A	ddress 1105 N.	MARKE	ET ST	REET					
WILMINGTON TRUST COMPANY				City							Zip Code	
WILMINGTON Street Address										DE	19890	
Operator of Aircraft 2864 S, CIRCLE DR., SUITE1100												
WESTERN PACIFIC	City State COLO SPGS CO						State CO	Zip Code 80906				
Operator Does Business As: Operator Designator Code: W8PA												
- Type of U.S. Certificate(s) Held:												
Air Carrier Operating Certificate(s): Flag Carrier/Domestic												
Operating Certificate:				Operator 0	Certificat	te:						
Regulation Flight Conducted Under: Part	121: Air Carrier											
Type of Flight Operation Conducted: Sch	eduled; Domestic	; Pass	senger	Only								
FACTUAL REPORT - AVIATION Page 2												

National Transportation Safety Board NTSB ID: FTW97IA160													
F	ACTUAL RI	<b>EPORT</b>	-	Occurren	ce Date: 04	/16/199	)7		1				
	AVIATI	ØN		Occurren	ce Type: In	cident			1				
Name City State Date of Birth Age											Age		
On File				On Fil							53		
OITFlie	1					OITFIN						OITFILE	55
Sex: U     Seat Occupied: Left     Principal Profession: Civilian Pilot     Certificate Number: On File													
Certificate(s): Airline Transport													
Airplane R	ating(s): Multi	i-engine La	nd										
Rotorcraft/	/Glider/LTA: None	e											
Instrument	t Rating(s): Airpl	ane											
Instructor Rating(s): None													
Type Rating/Endorsement for Accident/Incident Aircraft? Yes Current Biennial Flight Review?													
Medical Cert.: Class 1 Medical Cert. Status: Valid Medicalw/ waivers/li									Date of	Last N	/ledical l	Exam: 04/1997	
- Flight Tir	me Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Mult-Engine	Nigh	ght Instrum Actual		strument Simular	ed	Rotorcraft	Glider	Lighter Than Air
Total Time	9	12018	4322	1769	10249	1	1784 1250		50 269				
Pilot In Co	ommand(PIC)	9769	2793	1673	8139	1	1600 996		6	269			
Instructor													
Last 90 Da	ays	155	155		155		33		3	4			
Last 30 Da	ays	91	91		91		5						
Seatbelt U	Ised? Yes	Shou	Ider Harnes	Used? Yes	<u> </u>	ŀ	Toxico	loav Perf	ormed? N	I	s	Second Pilot? Ye	I
										0			
Flight Plan/Itinerary													
Departure Point State Airport Identifier Departure Time Zone													
HOUSTON TX IAH 1940 CDT										CDT			
Destination State Airport Identifier													
Same as Accident/Incident Location COS													
Type of Clearance: IFR													
Type of Airspace: Class B													
Weather	· Information												
Source of	Briefing: Compa	any; Nation	al Weather	Service									
Method of	f Briefing:												

FACTUAL REPORT - AVIATION

PACIDAL REPORT         Occurrence Date: 04/16/1997           Occurrence Type: Incident           Weather Information         Time Zone         WOF Elevation         WOF Elevation         WOF Elevation         WOF Elevation         Direction From Accident Site         Direction From Accident Site           COS         2050         MDT         6184 Ft. MSL         INM         170 Deg. Mag.           SkyLowest Cloud Condition: Clear         0 Ft. AGL         Visibility: 10         SM         Attimeter:         30.00         "Hg           Temperature:         11 °C         Dew Point:         -4 °C         Wind Direction: 160         Density Altitude:         7500         Ft.           Wind Speed:         8         Guasts:         Weather Conditions at Accident Site: Visual Conditions         7500         Ft.           Wind Speed:         8         Guasts:         Weather Conditions at Accident Site: Visual Conditions         7500         Ft.           Type of Precipitation:         None         TOTAL         Total Explosion None         Total Explosion None           Classification:         Ussibility (RVR): 0         Ft         Aircraft Fire: In-flight         Aircraft Explosion None           Classification:         Ussibility         None         TOTAL         Total	Nationa	al Transportation Safety	Board	NTSB ID:	NTSB ID: FTW97IA160									
Occurrence Type: Incident           Weather Information         MOF ID         Observation Time         Time Zone         WOF Elevation         WOF Distance From Accident Site         Direction From Accident Site           COS         2050         MDT         6184 Ft. MSL         1 NM         170 Deg. Mag.           SkyLowest Cloud Condition: Clear         0 Ft. AGL         Visibility: 10         SM         Attimeter: 30.00         "Hg           Lowest Ceiling: None         0 Ft. AGL         Visibility: 10         SM         Attimeter: 30.00         "Hg           Temperature:         11 °C         Dew Point:         -4 °C         Wind Direction: 160         Density Attitude: 7500         Ft.           Wind Speed: 8         Gusts:         Weather Conditions at Accident Site: Visual Conditions         Visibility: RVR):         0         Ft.         Visibility: RVR):         0         Ft.         Visibility: RVR):         0         Ft.         Visibility: RVR):         0         Ft.         Visibility: RVR):         0         SM         Intensity of Precipitation: Unknown           Atcraft Damage: None         Aircraft Fire: In-flight         Aircraft Explosion None         Classification: U.S. Soil         1         1           Firet Plot         1         1         1         1         1 </td <td>FA</td> <td>ACTUAL REPOI</td> <td>Occurren</td> <td>ce Date:</td> <td>04/16/19</td> <td>997</td> <td></td> <td>]</td> <td></td> <td></td> <td></td> <td></td>	FA	ACTUAL REPOI	Occurren	ce Date:	04/16/19	997		]						
Weather         Information           WOF ID         Observation Time         Time Zone         WOF Elevation         WOF Distance From Accident Site         Direction From Accident Site           COS         2050         MDT         6184 Fr. MSL         1 NM         170 Deg. Mag.           SkylLowest Cloud Condition: Clear         0 Fr. AGL         Condition of Light: Night/Dark         Lowest Ceiling: None         0 Fr. AGL         Visibility:         10         SM         Attimeter:         30.00         "Hg           Temperature:         11 °C         Dew Point:         - 4 °C         Wind Direction: 160         Density Atlitude:         7500         Ft.           Wind Speed:         8         Gusts:         Weather Conditions at Accident Site:         Visual Conditions         Visual Conditions           Visibility (RVR):         0         Ft.         Visibility (RVV)         0         SM         Intensity of Precipitation: Unknown           Atcraft Damage: None         Aircraft Fire: In-flight         Aircraft Explosion None         Aircraft Explosion None           Classification: U.S. Registered/U.S. Soil         1         1         1         1           - Injury Summary Matrix         Fatel         Seriou         1         1           Right Instructor         I		AVIATION	ccurrence Type: Incident											
Normality         Time Zone         WOF Elevation         WOF Distance From Accident Site         Direction From Accident Site           COS         2050         MDT         6184 Ft. MSL         Image: Site         1 NM         170 Deg. Mag.           SkyLawest Cloud Condition: Clear         0 Ft. AGL         Visibility: 10         SM         Attimeter: 30.00         'Hg           Temperature:         11 °C         Dev Point:         -4 °C         Wind Direction: 160         Density Altitude: 7500         Ft.           Wind Speed:         8         Gusts:         Westher Conditions at Accident Site: Visual Conditions         Visuality (RVR):         0         Ft.         Visibility (RVR):         0         Ft.         Visibility (Precipitation: Unknown         Image: None           Accident Information         Attirant Fire: In-flight         Aircraft Explosion None         Aircraft Explosion None         Image: None<	Weather								<u> </u>					
COS       0.00       MDT       6184 Ft MSL       Image: Normal Condition: Classification: Clastication: Classification: Classificatication	WOF ID	Observation Time	Time Zone	WOF Elevat	VOF Elevation WOF Distance From Accident Site Direction From Accident Site									
COS         2050         MDT         6184 Ft. MSL         1 NM         170 Deg. Mag.           Sky/Lowest Cloud Condition: Clear         0 Ft. AGL         Condition of Light: Night/Dark           Lowest Celling: None         0 Ft. AGL         Visibility: 10         SM         Altimeter:         30.00         *Hg           Temperature:         11 °C         Dew Point:         -4 °C         Wind Direction: 160         Density Altitude:         7500         Ft.           Wind Speed: 8         Gusts:         Weather Conditions at Accident Site: Visual Conditions         President Site: Visual Conditions           Visibility (RVR):         0         Ft.         Visibility (RVV)         0         SM         Intensity of Precipitation: Unknown           Accident Information         Aircraft Fire: In-flight         Aircraft Explosion None           Classification:         U.S. Registered/U.S. Soil         Minor         TOTAL         TOTAL           Fine Plot         C         I         1         3         3         3           Other KPlot         C         C         C         C         C         C           Information         C         C         C         C         C         C           Information         Minor         None														
O Ft. AGL       Condition: Uight: Night/Dark         Lowest Celling: None       O Ft. AGL       Sind of Uight: Night/Dark         Temperature:       11 °C       Dev Point:       4 °C       Wind Direction: 160       Density Altitude:       7500       °Ft.         Wind Speed:       8       Gusts:       Weather Conditions at Accident Site: Visual Conditions       Top Ontonion       Top	COS     2050     MDT     6184 Ft. MSL     1 NM     170 Deg. Mag.       Sky/l owest Cloud Condition: Clear     0 Et ACL     Condition of Light Night/Dark												Mag.	
Lowest Ceiling: None       0 FL ACL       Visibility:       10 SM       Atimeter:       30.00 "Hg         Temperature:       11 °C       Der Point:       -4 °C       Wind Direction: 160       Density Altitude:       7500       FL         Wind Speed: 8       Gusts:       Gusts:       Weat+reconditions at Accident Site: Visual Conditions       Visibility:       None       FL       Visibility (RVN):       0       FL       Weat+reconditions at Accident Site: Visual Conditions         Nisbility (RVR):       0       FL       Visibility (RVV):       0       SM       Intensity of Precipitation: Unknown       FL         Restrictions to Visibility:       None       Aircraft Fire: In-flight       Aircraft Explosion None       FL       Aircraft Fire: In-flight         Aircraft Damage: None       Soria       Minor       None       TOTAL       Aircraft Explosion None         Classification: U.S. Registered/U       Fatal       Seria       Minor       None       TOTAL         Firet Pilot       Fatal       Seria       Minor       None       TOTAL         Flight Instructor       I       I       1       1         Student Pilot       I       I       3       3         Otheck Pilot       I       I       I	Sky/Lowest Cloud Condition: Clear       0 Ft. AGL       Condition of Light: Night/Dark													
Temperature:       11 °C       Dew Point:       -4 °C       Wind Direction: 160       Density Altitude:       7500       FL         Wind Speed: 8       Gusts:       Gusts:       Weatter Conditions at Accident Site: Visual Conditions </td <td colspan="9">Lowest Ceiling: None 0 Ft. AGL Visibility: 10 SM Altimeter: 30.00</td> <td>"Hg</td>	Lowest Ceiling: None 0 Ft. AGL Visibility: 10 SM Altimeter: 30.00									"Hg				
Wind Speed: 8         Gusts:         Weather Conditions at Accident Site: Visual Conditions           Visibility (RVR):         0         Ft.         Visibility (RVV)         0         SM         Intensity of Precipitation: Unknown           Restrictions to Visibility:         None         Intensity of Precipitation:         Unknown           Type of Precipitation:         None         Aircraft Fire: In-flight         Aircraft Explosion None           Classification:         U.S. Registered/U.S. Soil         Aircraft Erre: In-flight         Aircraft Explosion None           Classification:         U.S. Registered/U.S. Soil         1         1         1           - Injury Summary Matrix         Fatal         Serious         Minor         None         TOTAL           Flight Instructor         I         1         1         1         1         1           Student Fliot         I         I         1         1         1         1           Flight Instructor         I         I         I         I         1         1           Student Fliot         I         I         I         I         1         1           Student Fliot         I         I         I         I         I         I         I      <	Temperatu	ire: 11 °C	Dew Point:	-4 °C	Wind	Direction:	160			De	nsity Altitude:	7500	Ft.	
Visibility (RVR):     0     Ft.     Visibility (RVV)     0     SM     Intensity of Precipitation: Unknown       Restrictions to Visibility:     None     Intensity of Precipitation: Unknown     Intensity of Precipitation: Unknown       Type of Precipitation:     None     None     Intensity of Precipitation: Unknown       Accident Information     Aircraft Erre: In-flight     Aircraft Explosion None       Classification:     U.S. Registered/U.S. Soil     Aircraft Erre: In-flight     Aircraft Explosion None       Classification:     U.S. Registered/U.S. Soil     Intensity of DTAL     Intensity of DTAL       - Injury Summary Matrix     Fatal     Serious     Minor     None     TOTAL       Student Pliot     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity       Student Pliot     Intensity     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity       Cabin Attendants     Intensity     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity       Passengers     Intensity     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity       Other Ground     Intensity     Intensity of Intensity     Intensity of Intensity     Intensity of Intensity	Wind Spee	ed: 8	Gusts:		Weath	ner Condti	ions at Accio	lent Si	ite: Visual C	Cond	itions			
Restrictions to Visibility: None         Type of Precipitation: None         Accident Information         Aircraft Damage: None       Aircraft Fire: In-flight         Aircraft Damage: None       Aircraft Fire: In-flight         Classification: U.S. Registered/U.S. Soil         - Injury Summary Matrix       Fatal         Second Pilot       1         Sudent Pilot       1         First Pilot       1         Flight Instructor       1         Flight Engineer       2         Cabin Attendants       3         Other Crew       120         Passengers       120         Other Ground       0         O       0	Visibility (R	RVR): 0 Ft	. Visibility (F	RVV) 0	SM	Intensity	of Precipita	ation: I	Unknown					
None         Aircraft Information         Aircraft Damage: None         Classification: U.S. Registered/U.S. Soil         Injury Summary Matrix       Fatal       Serious       Minor       TOTAL         First Plot       1       1         Second Pilot       Image: Se	Restriction	s to Visibility: None	I											
None         Aircraft Precipitation: None         Aircraft Fire: In-flight       Aircraft Explosion None         Classification: U.S. Registered/U.S. Soil         - Injury Summary Matrix       Fatal       Serious       Minor       None       TOTAL         First Pilot       1       1       1       1       1         Second Pilot       1       1       1       1         Student Pilot       1       1       1       1         Flight Instructor       1       1       1       1         Flight Engineer       1       1       1       1         Cabin Attendants       1       1       3       3         Other Crew       1       1       1       1         Passengers       1       1       1       1         Other Ground       0       0       0       0       0         Other Ground       0       0       125       125       125														
Accident Information         Aircraft Damage: None       Aircraft Fire: In-flight       Aircraft Explosion None         Classification: U.S. Registered/U.S. Soil       Minor       None       TOTAL         - Injury Summary Matrix       Fatal       Serious       Minor       None       TOTAL         First Pilot       1       1       1       1       1         Second Pilot       1       1       1       1         Student Pilot       1       1       1       1         Flight Instructor       1       1       1       1         Flight Engineer       1       1       1       1         Cabin Attendants       3       3       3       3         Other Crew       1       1       125       125         Other Ground       0       0       0       125       125	Type of Pre	ecipitation: None												
Accident Information         Aircraft Fire: In-flight       Aircraft Explosion None         Classification: U.S. Registered/U.S. Soil         - Injury Summary Matrix       Fatal       Serious       Minor       None       TOTAL         First Pilot         1       1         Second Pilot         1       1         Student Pilot         1       1         Flight Instructor              Clabin Attendants         3       3          Other Crew         120       120           Passengers         125       125           Other Ground       0       0       0       0       0	.,													
Aircraft Damage: None       Aircraft Fire: In-flight       Aircraft Explosion None         Classification: U.S. Registered/U.S. Soil         None       TOTAL         - Injury Summary Matrix       Fatal       Serious       Minor       None       TOTAL         First Pilot       1       1       1       1       1         Second Pilot       1       1       1       1         Student Pilot       1       1       1       1         Flight Instructor       1       1       1       1         Flight Engineer       1       1       1       1         Cabin Attendants       3       3       3       3         Other Crew       1       120       120       120         -TOTAL ABOARD -       1       125       125       125         Other Ground       0       0       0       125       125	Accident Information													
Classification: U.S. Registered/U.S. Soil         - Injury Summary Matrix       Fatal       Serious       Minor       None       TOTAL         First Pilot       1       1       1       1       1         Second Pilot       1       1       1       1         Student Pilot       1       1       1       1         Flight Instructor       1       1       1       1         Check Pilot       1       1       1       1         Flight Engineer       1       1       1       1         Cabin Attendants       3       3       3       3         Other Crew       1       120       120       120         -TOTAL ABOARD -       1       125       125       125         Other Ground       0       0       0       125       125	Aircraft Dar	mage: None		Aircraft Fir	e: In-flig	jht			Aircraft Exp	olosio	n None			
- Injury Summary MatrixFatalSeriousMinorNoneTOTALFirst Pilot111Second Pilot111Student Pilot111Student Pilot11Flight Instructor11Check Pilot11Flight Engineer13Cabin Attendants11Passengers1120-TOTAL ABOARD -00Other Ground00Other Dral00	Classificati	on: U.S. Registered/U	J.S. Soil					I						
First Pilot1Second Pilot1Student Pilot1Student Pilot1Flight Instructor1Check Pilot1Flight Engineer1Cabin Attendants3Other Crew120Passengers120TOTAL ABOARD -000- GRAND TOTAL -00000	- Iniurv Su	mmarv Matrix	Fatal S	Serious Mind	or	None	TOTAL							
Second PilotImage: constraint of the second point of the seco	First Pi	lot				1	1							
Student PilotImage: Constraint of the structorImage: Constraint of the structorFlight InstructorImage: Constraint of the structorImage: Constraint of the structorCheck PilotImage: Constraint of the structorImage: Constraint of the structorFlight EngineerImage: Constraint of the structorImage: Constraint of the structorCabin AttendantsImage: Constraint of the structorImage: Constraint of the structorCabin AttendantsImage: Constraint of the structorImage: Constraint of the structorCabin AttendantsImage: Constraint of the structorImage: Constraint of the structorCabin AttendantsImage: Constraint of the structorImage: Constraint of the structorCabin AttendantsImage: Constraint of the structorImage: Constraint of the structorOther CrewImage: Constraint of the structorImage: Constraint of the structorPassengersImage: Constraint of the structorImage: Constraint of the structorOther GroundImage: Constraint of the structorImage: Constraint of the structorOther GroundImage: Constraint of the structorImage: Constraint of the structor </td <td>Second</td> <td>d Pilot</td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Second	d Pilot				1	1							
Flight InstructorImage: Check PilotImage: Check PilotImage: Check PilotCheck PilotImage: Check PilotImage: Check PilotImage: Check PilotFlight EngineerImage: Check PilotImage: Check PilotImage: Check PilotCabin AttendantsImage: Check PilotImage: Check PilotImage: Check PilotCabin AttendantsImage: Check PilotImage: Check PilotImage: Check PilotCabin AttendantsImage: Check PilotImage: Check PilotImage: Check PilotOther CrewImage: Check PilotImage: Check PilotImage: Check PilotPassengersImage: Check PilotImage: Check PilotImage: Check PilotOther GroundImage: Check PilotImage: Check PilotImage: Check PilotOther GroundImage: Check PilotImage: Check PilotImage	Studen	t Pilot												
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Cabin AttendantsImage: Cabin AttendantsImage: Cabin AttendantsOther CrewImage: Cabin AttendantsImage: Cabin AttendantsPassengersImage: Cabin AttendantsImage: Cabin Attendants- TOTAL ABOARD -Image: Cabin AttendantsImage: Cabin AttendantsOther GroundImage: Cabin AttendantsImage: Cabin Attendants- GRAND TOTAL -Image: Cabin AttendantsImage: Cabin Attendants- GRAND TOTAL -Image: Cabin AttendantsImage: Cabin Attendants	Flight E	ingineer												
Other Crew         Image: Constraint of the second sec	Cabin A	Attendants				3	3							
Passengers         120         120           - TOTAL ABOARD -         125         125           Other Ground         0         0         0           - GRAND TOTAL -         0         0         125	Other C	Crew												
- TOTAL ABOARD -       125       125         Other Ground       0       0       0         - GRAND TOTAL -       0       0       125       125	Passen	igers				120	120							
Other Ground         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         125          125 <th 125<="" td="" th<=""><td>- TOTAL A</td><td>ABOARD -</td><td></td><td></td><td></td><td>125</td><td>125</td><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td>- TOTAL A</td> <td>ABOARD -</td> <td></td> <td></td> <td></td> <td>125</td> <td>125</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	- TOTAL A	ABOARD -				125	125						
- GRAND TOTAL - 0 0 125 125	Other G	Ground	0	0	0		0							
0 0 120 120	- GRAND	) TOTAL -	0	0	0	125	125							
				FACTUAL	L REPO	RT - AV	IATION					Ρ	age 4	

National Transportation Safety Board	NTSB ID: FTW97IA160	
FACTUAL REPORT	Occurrence Date: 04/16/1997	
AVIATION	Occurrence Type: Incident	
Administrative Information		
Investigator-In-Charge (IIC)		
Additional Persons Participating in This Accident/Incide RON NORTON FAA FSDO DENVER, CO 80249	ent Investigation:	