Aviation Investigation Final Report

Location:	HOUSTON, Texas	**Accident Number:**	FTW93LA266
Date & Time:	September 27, 1993, 15:10 Local	**Registration:**	N80010
Aircraft:	BEECH A36	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

DURING ENGINE START, UTILIZING THE HIGH BOOST PUMP, THE PILOT NOTED FLAMES COMING UP FROM THE ENGINE COMPARTMENT TOWARD THE DOOR. THE PILOT AND PASSENGER WERE ABLE TO EXIT BEFORE THE AIRPLANE WAS ENGULFED IN FLAMES. INVESTIGATION REVEALED A CROSS THREADED OUTPUT LINE ON THE ENGINE DRIVEN FUEL PUMP WHICH ALLOWED FUEL TO LEAK INTO THE ENGINE COMPARTMENT. THE PUMP HAD BEEN REMOVED AND RE-INSTALLED EARLIER IN THE DAY. THE MECHANIC WHO PERFORMED THE POST-MAINTENANCE RUN UP STATED THAT HE HAD TO RUN THE BOOST PUMP ON LOW TO KEEP THE ENGINE FROM RUNNING ROUGH. HE DID NOT INFORM ANYONE OF THAT DIFFICULTY UNTIL AFTER RELEASING THE AIRPLANE FOR FLIGHT AND AFTER THE ACCIDENT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FUEL LEAK WHICH RESULTED FROM THE MECHANIC'S IMPROPER INSTALLATION OF THE FUEL LINE. A FACTOR WAS THE LEAD MECHANIC'S INADEQUATE POST RUN UP INSPECTION.

Findings

Occurrence #1: FIRE
Phase of Operation: STANDING - STARTING ENGINE(S)

Findings
1. (C) FUEL SYSTEM,LINE FITTING - CROSS/STRIPPED THREADED
2. (C) MAINTENANCE,INSTALLATION - IMPROPER - COMPANY MAINTENANCE PERSONNEL
3. (F) MAINTENANCE,INSPECTION - INADEQUATE - COMPANY MAINTENANCE PERSONNEL

Factual Information

On September 27, 1993, at approximately 1510 central daylight time, a Beech A36, N80010, was destroyed by fire during engine start at the Hobby Airport, in Houston, Texas. The airplane, being flown by an ATP rated pilot, was about to depart on a local flight. There was no flight plan filed and visual meteorological conditions prevailed throughout the area. Neither the pilot nor the passenger were injured.

According to the pilot, who was a Beech sales person, the flight was to be an acceptance flight prior to sale to the passenger. The pilot stated that he utilized the high boost pump to pressurize the system and then started the engine. The engine started and then quit. He applied boost pump again and restarted. During the second start, the pilot noted flames coming up from the engine compartment toward the cockpit door window. The pilot and the passenger immediately exited the airplane prior to its being engulfed in flames. The pilot failed to return the Pilot/Operator Accident Report that was provided to him following the accident.

Investigation revealed a cross threaded output line on the engine driven fuel pump which allowed fuel to leak into the engine compartment. The fuel pump had been removed earlier in the day for compliance with a service bulletin and re-installed. Following the completion of the maintenance, the airplane was run up by the lead mechanic who stated that he also performed a post- run inspection. He later stated to his supervisor that during the run up he had to keep the electric boost pump operating in the low position to prevent the engine from running rough. However, he did not relate the situation until after the mishap.

Pilot Information

Certificate:	Airline transport	**Age:**	Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	February 28, 1992
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	3000 hours (Total, all aircraft), 250 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	**Registration:**	N80010
Model/Series:	A36 A36	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	E-2749
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	September 27, 1993 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	0 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	40 Hrs	**Engine Manufacturer:**	CONTINENTAL
ELT:		**Engine Model/Series:**	IO-550-B
Registered Owner:	UNITED BEECHCRAFT, INC.	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	HOU ,30 ft msl	**Distance from Accident Site:**	
Observation Time:	14:50 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 25000 ft AGL	**Visibility**	15 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	27°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(HOU)	**Type of Flight Plan Filed:**	None
Destination:	(HOU)	**Type of Clearance:**	None
Departure Time:	00:00 Local	**Type of Airspace:**	

Airport Information

Airport:	HOBBY AIRPORT HOU	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 None	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	Unknown
Total Injuries:	2 None	**Latitude, Longitude:**	29.650094,-95.280685(est)

Administrative Information

Investigator In Charge (IIC):	Wandel, Warren
Additional Participating Persons:	THOMAS L PACE; HOUSTON , TX
Original Publish Date:	August 1, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=18838