Aviation Investigation Final Report

Location:	OLD BRIDGE, New Jersey	**Accident Number:**	NYC96LA080
Date & Time:	April 2, 1996, 12:15 Local	**Registration:**	N9625R
Aircraft:	Cessna U206G	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The turbine powered Cessna 206 was cruising at 7500 feet, when the engine lost power. The engine was not equipped with an auto ignition system, and the pilot did not attempt to restart the engine. During a forced landing, the airplane arrived over an airport at 2000 feet AGL; however, after turning downwind and then final, the pilot was unable to reach the airport due to strong surface winds. He attempted to reach an open field, and the airplane struck a tree. The airframe fuel filter was found in the bypass configuration with a clogged filter element and with visible contaminants in the fuel. The contaminated fuel was examined and was found to contain a higher than normal gum content. The fuel downstream of the engine filter was clean with no visible contamination. Further investigation revealed the airplane had been purchased for salvage by the operator after it was involved in an accident. Turbine fuel was not available at the airport, where the airplane had been stored. The airplane had been refueled with turbine fuel removed from the wings of other airplanes that were stored at the facility. The contamination was attributed to old fuel. Also, a check of the fuel filter disclosed an inoperative electrical switch, which prevented the fuel filter bypass light from illuminating.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: fuel contamination, due to improper servicing of the aircraft, which resulted in fuel starvation, loss of engine power, a forced landing, and collision with a tree. The strong surface wind was a related factor.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: CRUISE - NORMAL

Findings
1. (C) FLUID,FUEL - CONTAMINATION
2. (C) MAINTENANCE,SERVICE OF AIRCRAFT/EQUIPMENT - IMPROPER
3. (C) FUEL SYSTEM,FILTER - BLOCKED(PARTIAL)
4. (C) FLUID,FUEL - STARVATION

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Findings
5. (F) WEATHER CONDITION - HIGH WIND
6. OBJECT - TREE(S)

Factual Information

On April 2, 1996, at 1215 eastern standard time, a Cessna U206G, N9625R, made a forced landing in Old Bridge, New Jersey. The airplane received substantial damage. The private pilot and passenger received minor injuries. Visual meteorological conditions prevailed, and no flight plan had been filed for the personal flight which was operated under 14 CFR Part 91, and had departed from the Grand Strand Airport, North Myrtle Beach, South Carolina, about 0815.

The flight which was destined for Sky Acres Airport, LaGrangeville, New York, was returning from Florida, and cruising at 7,500 feet. The pilot was receiving VFR traffic advisories from the New York TRACON. At 1210, the pilot reported that he had lost power in the engine, after which the flight was vectored toward the Old Bridge Airport.

In the NTSB Accident Report, the pilot stated:

"...No problems, no warning lites and all eng. gages in the green...At this time a sudden power loss, No vibration or unusual noise. Feathered prop and closed fuel lever. Flight watch recommended Old Bridge Airport, Made 90 degree right turn and set up glide (75 mph). Arrived over Old Bridge at 2000 feet. Air was smooth up to this point. The wind sock indicated a cross wind from about 300 [degrees]. Circled down wind and down to final [Runway 6] and very turbulent at this time. 1200 feet on final shut off fuel selector for safety reasons. At this point it was apparent how strong the cross wind was and I was not sure that we would make the runway. I saw a small field to my left and headed for it. This put us directly into the wind and ground speed and stability was better. We hit the last sizable tree between us and the field. The airplane hit the tree hard on the right wing, spun around and dropped to the ground in a flat position. We both got out of the pilots door and walked to the road that was about 200 yards away."

The FAA reported that fuel was found in one wing tank and evidence of a fuel spill was found where the other wing tank had been ruptured.

The airframe fuel filter was found in the bypass configuration with the filter element covered by contamination. Additionally the fuel in the filter was dark and solid particles were visible in the fuel. The fuel in the engine filter was clear with no visible contamination.

A check of the last place the airplane was refueled revealed that they did not have any contamination and there had been no reports of problems from pilots of other airplane refueled from the same source.

The contaminated fuel from the airframe filter was examined by the US Army Petroleum Depot in Harrisburg, Pennsylvania, which reported a higher than normal gum content.

Turbine fuel was not available at Sky Acres Airport. The wife of the pilot reported that while operating at Sky Acres, the airplane had been refueled with turbine fuel removed from the wings of airplanes that were stored at the facility for modifications.

The Chief of the Product Assurance Division, US Army Petroleum Depot, also reported that old fuel will have a higher than normal gum content which could leave a buildup in the fuel system. The introduction of fresh fuel could cause the buildup to be released into solution as solid particles. The has been seen many times in the past when US Army vehicles have been fueled either with old fuel, or fuel of one type and then another type of fuel is introduced into the system. Each type of fuel will leave residue in the system which can be precipitated out when the fuel type is changed. Additionally, the fresh fuel in the system would mask the symptoms of old fuel.

The airframe filter was equipped with a drain valve and the draining of this valve is listed on the Normal Procedures Check List as a item for first flight of the day, or after each refueling. Additionally, a check of the fuel filter disclosed the electrical switch which would light the fuel filter bypass light on the instrument panel was inoperative.

The engine was not equipped with an auto ignition system. However, a check of the emergency procedures for the airplane revealed that the 8th item on the ENGINE FAILURE DURING FLIGHT checklist was an engine restart. According to the pilot, no restart was attempted.

The accident airplane N9625R was purchased for salvage by the operator after it was involved in an accident (Ref. ANC92T#A06). The turbine engine and related components were purchased by the operator and came from N9987M which was involved in an accident (Ref. LAX93LA126). According to log book records, the operator then converted N9625R to a turbine engine following the Soloy conversion specifications. According to records from Soloy, a replacement airframe fuel filter was not ordered.

Pilot Information

Certificate:	Private	**Age:**	67,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	February 17, 1996
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	5020 hours (Total, all aircraft), 4980 hours (Pilot In Command, all aircraft), 19 hours (Last 90 days, all aircraft), 19 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N9625R
Model/Series:	U206G U206G	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	U20606908
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	August 4, 1995 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	40 Hrs	**Engines:**	1 Turbo prop
Airframe Total Time:	2707 Hrs	**Engine Manufacturer:**	Allison
ELT:	Installed	**Engine Model/Series:**	250-C20S
Registered Owner:	STYLES AVIATION INC.	**Rated Power:**	370 Horsepower
Operator:	HERBERT R. STYLES	**Operating Certificate(s) Held:**	None
Operator Does Business As:	STYLES AVIATION	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	EWR ,18 ft msl	**Distance from Accident Site:**	23 Nautical Miles
Observation Time:	11:55 Local	**Direction from Accident Site:**	32°
Lowest Cloud Condition:	Clear	**Visibility**	25 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	22 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	MYRTLE BEACH , SC (CRE)	**Type of Flight Plan Filed:**	None
Destination:	LA GRANGEVILLE , NY (N44)	**Type of Clearance:**	VFR on top
Departure Time:	08:00 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	OLD BRIDGE 3N6	**Runway Surface Type:**	Asphalt
Airport Elevation:	87 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	6	**IFR Approach:**	None
Runway Length/Width:	3594 ft / 50 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	ANDREW LICURSI; TETERBOBO , NJ SCOTT S SCHEURICH; INDIANAPOLIS , IN BUCK WELCH; WICHITA , KS
Original Publish Date:	February 28, 1997
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=39162