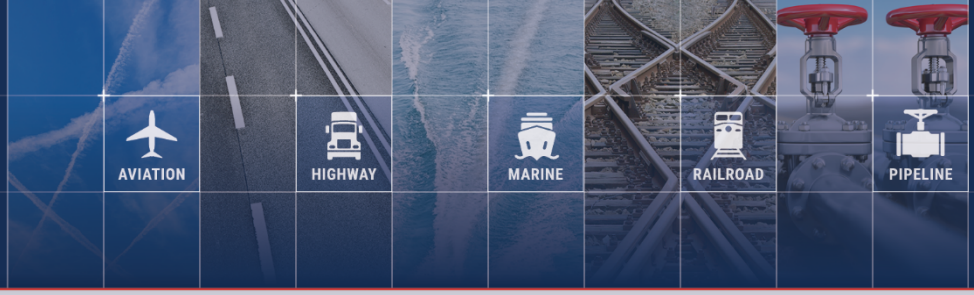

Aviation Investigation Final Report

Location:	SPARTANBURG, South Carolina	**Accident Number:**	ATL94FA093
Date & Time:	May 7, 1994, 11:18 Local	**Registration:**	N1101A
Aircraft:	Nord (SNCAN) 1101	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

DURING TAKEOFF, BLACK SMOKE WAS OBSERVED COMING FROM THE AIRPLANE BY A PILOT IN ANOTHER AIRPLANE. THE PILOT OF THE ACCIDENT AIRPLANE WAS ASKED IF HE HAD A SMOKE GENERATOR ON BOARD, AND HE REPLIED THAT HIS AIRPLANE WAS ON FIRE. THE AIRPLANE WAS THEN OBSERVED TO TURN DOWNWIND, FLY FOR ABOUT A MINUTE IN LEVEL FLIGHT, AND TURN TOWARD THE AIRPORT. AS THE TURN GOT STEEPER, THE AIRPLANE ROLLED INVERTED, IMPACTED THE GROUND, AND BURNED. FIRE DESTROYED THE AIRFRAME AND MELTED THE ENTIRE ENGINE ACCESSORY SECTION. THE NOSE CASE, AND MOST CONNECTING FUEL AND OIL LINES WERE ALSO DESTROYED BY THE FIRE. EXAMINATION OF AN EXHAUST FLANGE FOUND IN THE CHARRED DEBRIS REVEALED AN ELLIPTICAL PATTERN ON THE OUTER SURFACE; THE COLOR SHADES RANGED FROM A SOOTY BLACK TO WHITE. EXAMINATION OF THE AIRCRAFT MAINTENANCE RECORDS REVEALED THAT A LARGER ENGINE HAD BEEN INSTALLED ON THE AIRPLANE, AND A NEW AIRWORTHINESS CERTIFICATE HAD NOT BEEN ISSUED FOR THE MAJOR ALTERATION. NO SOOT DEPOSITION WAS PRESENT WITHIN THE PILOT'S RESPIRATORY TREE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S FAILURE TO MAINTAIN ADEQUATE AIRSPEED WHILE MANEUVERING FOR AN EMERGENCY LANDING. A FACTOR IN THE ACCIDENT WAS AN INFLIGHT FIRE FROM AN UNDETERMINED SOURCE.

Findings

Occurrence #1: FIRE
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings
1. (F) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Occurrence #3: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Findings
2. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
3. STALL - INADVERTENT - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Factual Information

HISTORY OF FLIGHT

On May 7, 1994, at 1118 eastern daylight time, a Nord 1101 (Messerschmitt 208), N1101A, collided with the ground while attempting an emergency landing to runway 35 at Spartanburg Downtown Airport, Spartanburg, South Carolina. The personal flight operated under 14 CFR Part 91 with no flight plan filed. Visual weather conditions prevailed at the time of the accident. The airplane was destroyed and the pilot was fatally injured. The flight departed Spartanburg, at 1115 hours.

The flight arrived in Spartanburg the thursday before the accident as part of the "Warbird Scramble". A friend of the pilot reported that after the pilot parked the airplane, he completed a walk-around inspection; no problems were reported. Friday, the airplane was on display with the other Warbirds. The same friend reported that on the day of the accident, the pilot completed another walk-around inspection of the airplane; the same friend could not recall how specific the inspection was, but the pilot again did not mention any problems with the airplane.

According to witnesses on the ramp, everything appeared normal as the airplane taxied for takeoff. But, a pilot taxing behind N1101A in another airplane reported that he saw heavy black smoke coming from N1101A before takeoff. Shortly after starting the takeoff roll, witnesses reported smoke coming from the airplane, and the smoke continued as the airplane climbed out from runway 22. The pilot of the second airplane described the smoke as a fuel rich condition. The pilot of N1101A was asked if he had a smoker on board, and he replied that his airplane was on fire. Witnesses further reported that the airplane turned downwind, flew for about a minute in level flight, and turned toward the airport. As the turn got steeper the airplane rolled inverted, clipped the top of a tree, collided with the ground, and burst into flames.

PERSONNEL INFORMATION

Information on the pilot is included in this report at the data field labeled "First Pilot Information". In addition to his airmen qualifications, the pilot possessed an airframe and powerplant mechanic's (A & P)certificate. Two fire damaged pilot's flight logs were recovered from the wreckage. An examination of the flight logs revealed that the pilot used each to record flight time in two different models of aircraft in which he was qualified. Neither log provided information about the pilot's initial flight training or any training he received in the Nord 1101 aircraft. There was an entry recovered from one of the log books which indicated that the pilot had completed a current biennial flight review; the flight time and aircraft type were missing from the entry. During a conversation with the pilot's wife, she indicated that she had little knowledge of her husband's total flight experience.

AIRCRAFT INFORMATION

Information on the airplane is contained in this report at the data field labeled "Aircraft Information". The aircraft maintenance logs recovered from the accident site were fire damaged, and some recorded dates and maintenance entries were consumed by the fire (see attached copies of fire damaged aircraft maintenance logs). Examination of the charred maintenance logs showed that the 1947 built aircraft was imported from France, assembled and inspected on May 6, 1975. After previous ownerships, the pilot acquired the airplane ten years ago.

The maintenance log review revealed that the pilot, an A & P mechanic, had signed off several annual or conditional inspections since he purchased the airplane. The maintenance log showed that the airplane was originally certificated with a Renault model 6Q10B, 230 horsepower engine. The installation date of the Lycoming IGSO-540-1A engine (serial Number L-1039-50) on N1101A was not determined. The IGSO-540-1A engine was equipped with an internal supercharger and a geared fuel pump; both assemblies were located in the accessory section of the engine assembly.

Federal Aviation Administration (FAA) aircraft certification records did not include documentation showing the completion of an engine modification or supplemental type certificate (STC) modification. According to an FAA Airworthiness Inspector, such modifications do not require log book entries for experimental certificated airplanes. But, referring to item #9 of the aircraft operating limitations, "any major changes to this aircraft as defined by 14 CFR Part 21.93 invalidates the special airworthiness certificate issued for this aircraft". FAA records revealed that this airplane, N1101A, was last issued an experimental airworthiness certificate with operating limits, on March 31, 1980.

METEOROLOGICAL INFORMATION

Visual weather conditions prevailed at the time of the accident. Weather information is contained in this report at the data field labeled "Weather Information".

WRECKAGE AND IMPACT INFORMATION

Examination of the accident site disclosed that the fire damaged airplane rested inverted adjacent to a tree. Examination of wreckage area revealed that all essential components to maintain controlled flight were located in the immediate vicinity of the main wreckage. Wreckage debris was scattered on a 325 degree magnetic heading, over an area 75 feet long and 35 feet wide. Examination of the wreckage site revealed that the fire destroyed the aircraft center section, cockpit,wing assemblies and empennage sections.

The engine assembly sustained fire damage which destroyed the accessory section, the nose case, and most connecting fuel and oil lines (see attached photographs). A flexible braided

fuel, line with a flare on one end and a fitting on the other end was recovered from the fire-damaged engine accessory section; no other fluid lines were recovered from the accessory section debris. The fire-damaged flexible braided fuel line was bluish in color.

An exhaust flange was also recovered from the engine accessory section debris. The exhaust flange had a series of elliptical patterns on one side with color shades ranging from a dark sooty to white. An examination of the remainder of the engine exhaust system revealed that the right exhaust assembly was attached. The left lower engine exhaust assembly was torn away from the manifold assembly. The exhaust risers and intake tubes on both sides of the engine remained attached to each cylinder.

MEDICAL AND PATHOLOGICAL INFORMATION

The post mortem examination of the pilot was performed by Dr. J. D. Wren, on May 8, 1994, at the Spartanburg Medical Center, Spartanburg, South Carolina. Dr. Wren stated that, "the pilot died as the result of multiple head and body trauma secondary to an airplane crash". He also stated that, "no soot deposition was present within the respiratory tree". The toxicological examinations were negative for drugs and alcohol.

ADDITIONAL INFORMATION

The aircraft wreckage was released to:

Mrs. Nancy Apelquist (Pilot's wife) 4125 SW 76 Ave Davie, Florida 33328.

Pilot Information

Certificate:	Private	**Age:**	55,Male
Airplane Rating(s):	Single-engine land; 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:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 11, 1994
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1000 hours (Total, all aircraft), 115 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Nord (SNCAN)	**Registration:**	N1101A
Model/Series:	1101 1101	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	107
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	February 11, 1994 Annual	**Certified Max Gross Wt.:**	7435 lbs
Time Since Last Inspection:	7 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2288 Hrs	**Engine Manufacturer:**	LYCOMING
ELT:		**Engine Model/Series:**	IGSO-540-1A
Registered Owner:	APELQUIST, PHILIP E.	**Rated Power:**	380 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:	GSP ,972 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	11:40 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Scattered / 5000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots / 21 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	24°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(SPA)	**Type of Flight Plan Filed:**	None
Destination:	(SPA)	**Type of Clearance:**	None
Departure Time:	11:15 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	In-flight
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.000072,-81.9608(est)

Administrative Information

Investigator In Charge (IIC):	Powell, Phillip
Additional Participating Persons:	LEWIS BLACKWELL; WEST COLUMBIA , SC
Original Publish Date:	October 18, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=3292