National Transportation Safety Board
Aviation Accident Final Report

Location:	GOODLAND, KS	**Accident Number:**	CHI94FA050
Date & Time:	12/15/1993, 1305 MST	**Registration:**	N710MB
Aircraft:	MITSUBISHI MU-300	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Analysis

THE FLIGHT WAS CLEARED FOR THE ILS APPROACH TO RUNWAY 30. THE FLYING PILOT WAS THE PILOT-IN-COMMAND. ACCORDING TO THE COCKPIT VOICE RECORDER TRANSCRIPTS, THE FLYING PILOT HAD DIFFICULTY MAKING A STABILIZED APPROACH. DURING THE INITIAL DESCENT THE AIRPLANE ENTERED AN OVER-SPEED CONDITION AND THE AIRPLANE FLEW THROUGH THE LOCALIZER. DURING HIS ATTEMPT TO RE-ESTABLISH THE AIRPLANE ON THE LOCALIZER, THE PILOT ALLOWED THE AIRSPEED TO DECREASE TO THE POINT WHERE THE PRESTALL 'STICK-SHAKER' ACTIVATED. THE STICK SHAKER CONTINUED UNTIL THE AIRPLANE DEPARTED CONTROLLED FLIGHT AND IMPACTED TERRAIN. NO EVIDENCE OF ANY PREIMPACT MECHANICAL ANOMALIES WERE DISCOVERED DURING THE INVESTIGATION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT-IN-COMMAND'S INADVERTENT STALL OF THE AIRPLANE. A FACTOR ASSOCIATED WITH THE ACCIDENT IS THE PILOT-IN-COMMAND'S POOR IFR PROCEDURES.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH

Findings
1. (F) IFR PROCEDURE - POOR - PILOT IN COMMAND
2. AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
3. (C) STALL - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On December 15, 1993, at 1305 mountain standard time, a Mitsubishi MU-300, N710MB, registered to Frank E. Whitham, and operated by a crew of two pilots, impacted the terrain one mile east of the Shugr Locator Outer Marker(LOM), after being cleared for the ILS runway 30 approach at Goodland Municipal, Goodland, Kansas. The airplane was destroyed by the impact and post- accident fire. The crew of two and the one passenger aboard received fatal injuries. The corporate/executive flight was operating under provisions of 14 CFR Part 91 on an IFR flight plan. Instrument meteorological conditions existed at the Goodland, Kansas airport, at the time of the accident. The flight departed Scott City, Kansas, at 1248 with the intended destination of Glasgow, Montana, with an intermediate stop at Goodland, Kansas.

According to transcripts from Federal Aviation Administration (FAA) records, the pilot-in-command called the Wichita Automated Flight Service station on four occasions on the date of the accident for weather briefings, to file an IFR flight plan, and to obtain an IFR clearance between 0845 and 1239.

A cockpit voice recorder (CVR) transcript from the accident airplane began at 1233, contained voices of the pilot-in-command and the second pilot along with anomalous cockpit noises.

At the beginning of the recording the flight crew members were heard discussing the proposed flight, setting navigation equipment, and preparing for the flight. They continued through a checklist, with liftoff occurring at 1248.

Radar contact was established with FAA Denver Air Route Traffic Control Center (ARTCC) at 1251, four miles southeast of Scott City, while climbing through 9,500 feet mean sea level (msl).

The clearance called for a direct route from Scott City, to Goodland, Kansas, at an altitude of 16,000 msl. The direct flight distance between the two airports is approximately 69 nautical miles.

At 1258:30 the flight was cleared for the ILS approach to runway 30 at Goodland.

A radar plot at 1259 indicated the accident airplane to be 26 nautical miles south of runway 30 at Goodland, and nine nautical miles west of the centerline of the ILS for runway 30, at 15,400 feet msl.

At 1301:19 the last reported radar plot for the airplane was 16 nautical miles southeast of runway 30 at Goodland, and two miles east of the centerline of the ILS for runway 30, at 9,400 feet msl.

The CVR recorded a "sound of warbling" starting at 1301:17 and commented on by the second pilot, "Airspeed."

At 1301:21 the CVR picked up a "sound of pulsating tone similar to over-speed warning."

At 1301:24, the second pilot asked "Speed brakes?"

At 1301:56, the "sound of pulsating tone similar to over-speed warning ended."

During the next three minutes the flaps were extended ten degrees, the landing gear were lowered, a landing check list was started, but interrupted by a conversation about intercepting

the localizer, and a conversation with the Goodland Airport UNICOM concerning wind and runway conditions.

At 1305:26 conversation continued about intercepting the ILS, and at 1305:35 the second pilot stated, "That's a shaker,.. ." followed two seconds later by, "Shaker, power power... ."

At 1305:39 the CVR picked up a, "sound of a horn similar to altitude alert," and at 1305:43 a statement from the second pilot for, "Full power." At 1305:47 the second pilot stated, "Get your nose down... . Get your nose down. Let's get it, get it to flying."

The recording ended five seconds later.

There are no known eye witnesses to the impact. One resident of the area was in his residence approximately two miles to the east of the impact site. He indicated that about the time of the accident he walked into his bedroom where there was a window facing the west. He stated that he observed a bright flash which he thought was lightning, but heard nothing. Another resident who lived approximately one mile to the south of the accident site, stated that he was not looking in the direction of the accident site, however around the time of the impact he recalled hearing a loud noise, which he associated with the sound of thunder.

When the pilots of the airplane did not cancel the IFR flight plan and the airplane did not land at the Goodland airport a search was initiated to find the airplane. The wreckage was located about 1800.

PERSONAL INFORMATION

The pilot-in-command was born January 15, 1928. He held a commercial pilot's certificate with privileges for airplane single and multi-engine land, rotorcraft-helicopter, and instrument airplane. He held type ratings for CE-500, MU-300 and BE-400 airplanes. His most recent second class medical certificate was issued on January 11, 1993, with the restriction, "Must wear lenses for distant and possess glasses for near vision." No personal log books were located; however, Federal Aviation Administration (FAA) records revealed that he had a total pilot time of 17,635 hours, as of June 2, 1993. His total time in the type of airplane involved in the accident was approximately 80 hours, as determined from training records, FAA records, and maintenance records. His most recent biennial flight review was satisfied by the issuance of the MU-300 and BE- 400 type certification on June 2, 1993. His most recent instrument currency could not be verified. Flight training records from Flight Safety International for this pilot's training, in the MU-300 are included as an addendum to this report.

The second pilot was born January 6, 1946. He held a commercial pilot's certificate with privileges for airplane single and multi-engine land, instrument airplane. His most recent second class medical certificate was issued March 17, 1993, with the restriction, "Must have available glasses for near vision." No personal log books were located: however, FAA records revealed that he had a total pilot time of 1,725 hours, as of March 17, 1993. His most recent biennial flight review and instrument currency could not be verified. His experience in the MU-300 could not be determined.

AIRCRAFT INFORMATION

The airplane was a Mitsubishi MU-300, serial number A078 S. A. At the time of the accident, the airframe had accumulated a total time of 2,593 hours time in service with 110 hours since the last inspection conducted on April 23, 1993.

COMMUNICATIONS

A transcript of conversations with the pilot or pilot's of N710MB is attached as an addendum to this report. This includes a telephone conversation with Wichita Automated Flight Service Station, and Denver Air Route Traffic Control Center.

FLIGHT RECORDERS

The airplane was not equipped with a flight data recorder; however a cockpit voice recorder (CVR) was installed and functioning during the accident flight. A complete transcription of the conversations recorded on the CVR is attached to this report.

WRECKAGE AND IMPACT INFORMATION

Ground impact marks indicate that the airplane impacted in a shallow descent, right wing down, in an open field. The initial ground scar,consistent with the right wing leading edge reached a depth of 18 inches. The debris scattered out from the initial impact scar on a magnetic heading of 037 degrees in a fan shaped pattern. There was a general disintegration of the airplane in the debris trail and the wreckage was distributed from the initial impact point to a distance of 1,060 feet. The impact site was located one mile east of the Shugr LOM.

Impact scars indicate a flap extension of unknown value at impact. The landing gear was found extended. The speed brake was stowed, as were the thrust reversers.

The extensive destruction of the airplane prevented a continuity verification of engine and flight controls. Likewise no specific determination of instrumentation, flight director and auto-pilot components was possible. One airspeed was located with a reading of 280 knots, another was found with a reading of 170 knots.

No evidence of any preimpact mechanical anomalies in the airplane were found during the investigation.

Both engines were removed from the accident site for further examination. The report of that investigation is covered further in this report and the factual report in its entirety is attached to this report.

A wreckage diagram was compiled and is attached to this report.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies were performed on the pilot and second pilot at Hays Pathology Laboratories, Hays, Kansas, on December 16, 1993. Toxicology tests on both pilots were not performed due to lack of suitable specimens for testing.

FIRE

A postimpact fire consumed much of the cockpit and cabin area of the airplane. Burn scars were present throughout the entire debris path from near the initial impact point to the resting place for the cabin and cockpit. The fire self extinguished and no fire was present when the accident was located at approximately 1800.

No evidence of preimpact fire was found during the investigation.

TESTS AND RESEARCH

A postaccident examination of the engines was conducted in March 1994, at Pratt & Whitney Canada, facilities at St. Hubert, Quebec, Canada. Findings during that investigation indicated

engine rotating parts displayed circumferential rubbing and rotation throughout both engines. Both engines had machining damage to the base materials of non-rotating parts from contact with moving parts. The material deformation in the direction of rotation of the rotating parts. There was no evidence of pre- impact distress or failure of engine parts. There was no evidence of fuel or lubrication problems. Most of the engine controls and accessories received damage consistent with impact and no anomalies were observed during the investigation. A copy of the group chairman's factual report of investigation of the engines is attached to this report.

ADDITIONAL DATA/INFORMATION

Parties to the investigation were the Federal Aviation Administration, Flight Standards District Office, Wichita, Kansas; Mitsubishi Aircraft, Dallas, Texas; Pratt & Whitney, Denver, Colorado; and Beech Aircraft, Wichita, Kansas.

The aircraft wreckage was released to representatives of the owner of the airplane on December 18, 1993.

Pilot Information

Certificate:	Commercial	**Age:**	65, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	**Last Medical Exam:**	01/11/1993
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	17635 hours (Total, all aircraft), 80 hours (Total, this make and model), 17100 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	MITSUBISHI	**Registration:**	N710MB
Model/Series:	MU-300 MU-300	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	A078 S.A.
Landing Gear Type:	Retractable - Tricycle	**Seats:**	11
Date/Type of Last Inspection:	04/23/1993, AAIP	**Certified Max Gross Wt.:**	13890 lbs
Time Since Last Inspection:	110 Hours	**Engines:**	2 Turbo Fan
Airframe Total Time:	2593 Hours	**Engine Manufacturer:**	P&W
ELT:	Installed, not activated	**Engine Model/Series:**	JT15D-4
Registered Owner:	WHITHAM, FRANK E.	**Rated Power:**	2500 lbs
Operator:	WHITHAM, FRANK E.	**Air Carrier Operating Certificate:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	GLD, 3656 ft msl	**Observation Time:**	1256 MST
Distance from Accident Site:	6 Nautical Miles	**Direction from Accident Site:**	300°
Lowest Cloud Condition:	Unknown / 400 ft agl	**Temperature/Dew Point:**	-2°C / -2°C
Lowest Ceiling:	Broken / 400 ft agl	**Visibility**	10 Miles
Wind Speed/Gusts, Direction:	14 knots, 150°	**Visibility (RVR):**	0 ft
Altimeter Setting:	29 inches Hg	**Visibility (RVV):**	0 Miles
Precipitation and Obscuration:			
Departure Point:	SCOTT CITY, KS (2K9)	**Type of Flight Plan Filed:**	IFR
Destination:		**Type of Clearance:**	IFR
Departure Time:	1248 MST	**Type of Airspace:**	

Airport Information

Airport:	GOODLAND MUNI (GLD)	**Runway Surface Type:**	Concrete
Airport Elevation:	3656 ft	**Runway Surface Condition:**	
Runway Used:	30	**IFR Approach:**	ILS
Runway Length/Width:	5499 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	STEPHEN A WILSON	**Adopted Date:**	10/20/1994
Additional Participating Persons:	ANDREW K NELSON; WICHITA, KS RONALD E CENTER; WICHITA, KS RALPH SORRELLS; DALLAS, TX EARNEST PATTERSON; DENVER, CO		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		