Aviation Investigation Final Report

Location:	Bay St. Louis, Mississippi	**Accident Number:**	ANC05LA029
Date & Time:	February 10, 2005, 17:30 Local	**Registration:**	N6742S
Aircraft:	Beech A36	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot/owner of the airplane heard a low thumping noise during takeoff on several occasions, which he associated with the landing gear. He flew the airplane to an airport to have a mechanic familiar with his airplane troubleshoot the noise. After a visual inspection failed to reveal the problem, a test flight was initiated. The mechanic seated in the rear of the airplane heard the noise, and after flying around for a few minutes, requested a return to the airport. During extension of the landing gear, the 3 green (gear down/locked) lights failed to illuminate. The pilot cycled the gear, but the lights again failed to illuminate. He stated he thought he had heard all the appropriate sounds associated with proper landing gear extension, and elected to continue the landing, without attempting the manual extension of the gear as prescribed in the "Emergency Procedures" section of the pilot's operating handbook. During the landing roll the landing gear collapsed. Postaccident testing of the landing gear was conducted with the airplane on jacks. Tests revealed that the charge on the battery was insufficient to extend the electrically operated landing gear completely. The battery was found to be capable of taking a charge, but further tests revealed no output from the alternator. The alternator's rotor was found to be defective and the electrical brushes excessively worn.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to use the manual emergency landing gear extension mechanism during the approach to land, which resulted in the electrically actuated main landing gear collapsing during the landing roll. A factor associated with the accident is an inoperative alternator.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: APPROACH

Findings
1. (F) ELECTRICAL SYSTEM,ALTERNATOR - INOPERATIVE

Occurrence #2: MAIN GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Findings
2. TERRAIN CONDITION - RUNWAY
3. (C) EMERGENCY PROCEDURE - NOT PERFORMED - PILOT IN COMMAND

Factual Information

On February 10, 2005, about 1730 central standard time, a Beech A36 airplane, N6742S, sustained substantial damage when the landing gear collapsed during landing at the Stennis International Airport, Bay St. Louis, Mississippi. The airplane was being operated by the pilot as a visual flight rules (VFR) local personal flight under Title 14, CFR Part 91 when the accident occurred. The private pilot and two passengers were not injured. Visual meteorological conditions prevailed, and no flight plan was filed.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on February 11, the pilot said he had flown the accident airplane to Stennis International Airport to pickup an aircraft mechanic, and have him listen to a "low thumping" noise the airplane was making during takeoff. He said after returning from the flight, the landing gear down and locked indicator's three green lights failed to illuminate when he extended the landing gear. The pilot said none of the remedial actions he took resulted in a green, down and locked indication, but he felt the gear was down and locked. He said during the landing roll the nose gear collapsed, followed by the collapse of the right main gear. He said the right wing sustained structural damage when the landing gear collapsed.

In a subsequent written statement dated February 15, 2005, the pilot reported that he had contacted Beechcraft in reference to a low thumping noise he routinely heard during initial takeoff. Beechcraft suggested an inspection of the landing gear and associated mechanisms for security. After inspecting the airplane himself, and finding nothing unusual, the pilot flew the airplane to an airport where a mechanic familiar with his specific airplane could troubleshoot the problem. The mechanic visually inspected the airplane, and found no mechanical anomalies. They decided to fly the airplane with the mechanic in the rear seat, to facilitate listening to the gear during retraction. During takeoff-initial climb, the low thumping noise was heard prior to gear retraction. During gear retraction the pilot reported hearing all the normal sounds associated with the retraction process. They flew the airplane for a short time, and returned to the airport for landing. The pilot reported that prior to landing, he heard all the appropriate sounds associated with the extension of the landing gear, but the 3 green lights associated with the gear down and locked condition did not illuminate. The pilot cycled the landing gear, and heard what he believed were all the appropriate sounds associated with the retraction and re-extension of the landing gear. He reported the 3 green lights again did not illuminate. He elected to continue the landing without executing the emergency gear extension procedures. He reported that during the landing sequence he retarded the throttle specifically to see if the gear warning horn would activate. The warning horn did not activate, adding to his belief the landing gear was down and locked. The landing gear collapsed during the landing roll.

After recovery the airplane was placed on jacks for gear retraction tests. During the initial test

the 3 green gear down and locked lights did not illuminate, and it was found the nose gear light was burned out. After replacing the nose gear light the tests continued. The gear cycled normally on the first test, but the battery went dead. The airplane's gear retraction system is an electrically driven mechanical system. The tests were continued using auxiliary power, and proceeded without incident. The battery was tested, and found to be in good condition, but uncharged. The alternator was removed, and sent to a certified shop for inspection. The alternator was tested, and found to have zero output. During teardown and inspection, the alternator's rotor was found to be defective, and the electrical brushes worn excessively.

The airplane is equipped with a manual hand crank to extend the landing gear in the event of a landing gear system failure. The procedures for manual extension are contained in the pilot's operating handbook under "Emergency Procedures."

Pilot Information

Certificate:	Private	**Age:**	59,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:**	
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	August 1, 2003
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	March 1, 2004
Flight Time:	4500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N6742S
Model/Series:	A36	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	E1635
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	November 1, 2004 Annual	**Certified Max Gross Wt.:**	3000 lbs
Time Since Last Inspection:	13 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2166 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-520-BB
Registered Owner:	Free Sky LLC	**Rated Power:**	285 Horsepower
Operator:	John Schwegmann	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KHSA	**Distance from Accident Site:**	
Observation Time:	16:40 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	340°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.29 inches Hg	**Temperature/Dew Point:**	9°C / -1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bay St. Louis, MS (HSA)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	Bay St. Louis KHSA	**Runway Surface Type:**	Asphalt
Airport Elevation:		**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	8500 ft / 75 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	30.367776,-89.454719

Administrative Information

Investigator In Charge (IIC):	Lewis, Lawrence
Additional Participating Persons:	Chuck Wittington; FAA FSDO ; Jackson, MS
Original Publish Date:	December 20, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=61003