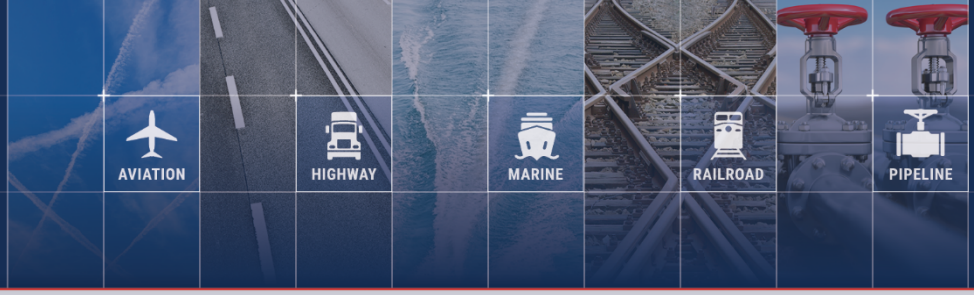

Aviation Investigation Final Report

Location:	Yuma, Arizona	**Accident Number:**	LAX02LA236
Date & Time:	July 22, 2002, 21:00 Local	**Registration:**	N756EV
Aircraft:	Cessna TR182	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane landed with the gear partially extended during a night landing. The pilot stated that he often dims all of the panel lights during night flights in an effort to improve his night vision. While attempting to illuminate the landing gear indicator light, by turning the knob counterclockwise, he had accidentally depressed the "press and test" indicator knob, giving him a false indication that the gear was in the down and locked position. Mechanics examined the airplane after the accident and noted that the circuit breaker for the landing gear had popped out. After resetting the circuit breaker, they put the airplane on jacks and cycled the landing gear. They found no anomalies or mechanical malfunctions with the landing gear.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure to properly verify that the landing gear was in the down and locked position.

Findings

Occurrence #1: WHEELS UP LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. LIGHT CONDITION - NIGHT
2. (C) GEAR DOWN AND LOCKED - NOT VERIFIED - PILOT IN COMMAND

Factual Information

On July 22, 2002, about 2100 mountain standard time, a Cessna TR182, N756EV, landed with the gear partially extended at the Yuma International Airport, Yuma, Arizona. The pilot/owner was operating the airplane under the provisions of 14 CFR Part 91. The commercial pilot, the sole occupant, was not injured; the airplane sustained substantial damage. The cross-country personal flight departed the Fresno Yosemite International Airport, Fresno, California, about 1810 Pacific daylight time, with a planned destination of Yuma. Visual meteorological conditions prevailed, and a flight plan had not been filed.

During a telephone interview with a National Transportation Safety Board investigator, the pilot reported that he was attempting to land on runway 17 in night conditions. Upon touchdown, he did not recall feeling anything abnormal. As he started the landing roll, the airplane lifted up and then began to move back down, which he thought was a feeling consistent with the landing gear retracting. He explained that the Cessna 182's landing gear is designed in such a way that the gear retracts by extending down first, and will subsequently retract up, inside the fuselage. As the airplane began to sink, he inadvertently applied rudder inputs, resulting in the airplane veering off the runway. He noted that the nose gear remained in the down and locked position the entire duration of the accident sequence.

The pilot described his usual procedures of verifying that the landing gear was in a down and locked position. He stated that he visually looks at the gear handle, checking to make sure that it is in the corresponding down position. He checks to make sure that the gear indicator light is illuminated green. He looks out the window to get a visual confirmation that the landing gear is in the appropriate position. Finally, while landing, he listens for the gear warning horn, which is a horn that will sound if the gear is retracted and the manifold pressure is low.

The pilot further explained that the airplane has one sole gear-indicator light. When the landing gear is in the down and locked position, the gear indicator light can be dimmed by turning the knob that the indicator light is located in. When turned counterclockwise, the bulb is fully revealed, which illuminates the indicator light bright green. When turned clockwise, the bulb becomes covered and no illumination will be seen, making the knob dark. The knob also serves as a "press to test" button, which, once depressed, will illuminate bright green indicating that the light is functional. The gear indication light will not illuminate by turning the knob if the gear is not in the down and locked position; however, it will illuminate if the "press to test" button is depressed and the gear is not in the down and locked position.

Being a retired United States Air Force pilot, who was often flying night missions, the pilot stated that he likes the cockpit to be dark. He often dims all of the panel lights in an effort to help his eyes adjust, which facilitates his night vision. He stated that the night of the accident

he probably had the gear indicator light turned fully clockwise, in the full-dark position. While on final approach, he remembers specifically seeing the gear indicator light illuminated green. He said that is was a possibility that while attempting to illuminate the light by turning the knob counterclockwise, he had accidentally depressed the indicator knob. This would have given him a false indication that the gear was in the down and locked position.

The pilot stated that he did not hear the gear warning horn sound before touchdown. He does not remember if he looked out the window to confirm if the gear was down, but thought the night conditions might have made it difficult for him to determine their position.

A National Transportation Safety Board investigator interviewed an inspection authorization (IA) mechanic, who examined the damage to the airplane that incurred during the accident. He stated that the illumination setting for the gear indicator was in the dim position, which would make the green indicator light very difficult to see in dark conditions. He talked to other mechanics in Yuma that inspected the airplane immediately after the accident. Upon arriving at the wreckage, they noted that the circuit breaker for the landing gear had popped out. After resetting the circuit breaker, they put the airplane on jacks and cycled the landing gear. They found no mechanical deficiencies with the landing gear. The IA also cycled the land gear and inspected the system, finding no anomalies or mechanical defects. The IA further noted that the landing gear is designed in such a way that the nose wheel extends first, with the main gear simultaneously following.

Pilot Information

Certificate:	Commercial	**Age:**	70,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):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	July 17, 2001
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 1, 2002
Flight Time:	9150 hours (Total, all aircraft), 2970 hours (Total, this make and model), 60 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N756EV
Model/Series:	TR182	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	R18201056
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	3100 lbs
Time Since Last Inspection:	60 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2970 Hrs	**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	O-540-L3C5D
Registered Owner:	Ted Smith Equipment Company	**Rated Power:**	250 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	NYL,213 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	02:56 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 20000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.73 inches Hg	**Temperature/Dew Point:**	36°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Fresno, CA (FAT)	**Type of Flight Plan Filed:**	None
Destination:	Yuma, AZ (YUM)	**Type of Clearance:**	VFR
Departure Time:	18:10 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	Yuma International Airport YUM	**Runway Surface Type:**	Concrete
Airport Elevation:	216 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17	**IFR Approach:**	None
Runway Length/Width:	5711 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	32.656387,-114.605834

Administrative Information

Investigator In Charge (IIC):	Petterson, George
Additional Participating Persons:	Bruce Smith; Federal Aviation Adminstration; Scottsdale, AK
Original Publish Date:	September 29, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55314