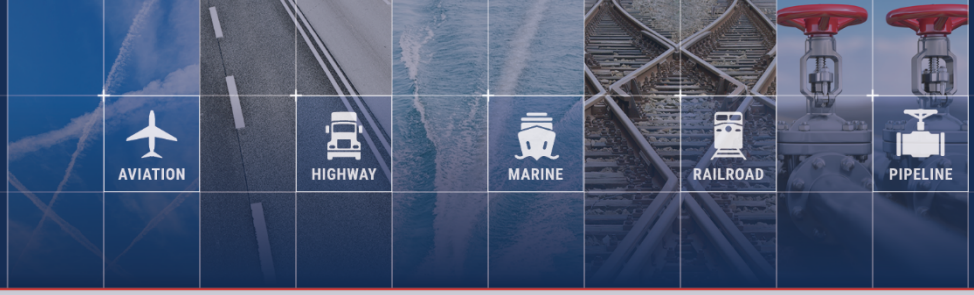

Aviation Investigation Final Report

Location:	Los Banos, California	**Accident Number:**	LAX07LA118
Date & Time:	March 30, 2007, 01:44 Local	**Registration:**	N4369K
Aircraft:	Ryan Navion A	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Prior to the flight, the pilot and passenger had each consumed at least 8 to 10 beers. The pilot and passenger had departed from a local bar where patrons had overheard discussions between them about doing some "crazy" aerobatics. Recorded radar data was reviewed. During the last 10 minutes of the flight, the pilot performed high angle turns and pitch up maneuvers. During the last 30 seconds of flight, the pitch angle and vertical speed showed an increase to about 20 degrees and 2,500 feet per minute, respectively. The speed profile revealed the flight's speed was mostly in the region between structural cruise limit and never exceed speeds. Examination of the wreckage revealed the airplane experienced an in-flight break-up. All fracture surfaces were consistent with overload separations. Post accident toxicological tests on specimens from the pilot found a blood ethanol level of 222 mg/dL (0.222 percent) and hydrocodone in the blood at a level of 0.02 mg/L.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's intentional performance of aerobatic maneuvers that exceeded the design stress limits of the airplane structure. Also causal was the pilot's impairment due to the effects of alcohol consumption. Contributory was the pilot's impairment due to the effects of prescription medication.

Findings

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

Findings
1. AEROBATICS - PERFORMED - PILOT IN COMMAND
2. (C) IMPAIRMENT(ALCOHOL) - PILOT IN COMMAND
3. (C) WING - OVERLOAD
4. (C) DESIGN STRESS LIMITS OF AIRCRAFT - EXCEEDED - PILOT IN COMMAND
5. (C) IMPAIRMENT(DRUGS) - PILOT IN COMMAND

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

Findings
6. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On March 30, 2007, at 0144 Pacific daylight time, a Ryan Navion A single engine airplane, N4369K, was destroyed during an in-flight breakup while maneuvering near Los Banos, California. The owner/pilot was operating the airplane under the provisions of 14 CFR Part 91. The private pilot and one passenger sustained fatal injuries. The local personal flight departed Los Banos about 0124 with an unknown destination. Night visual meteorological conditions prevailed, and no flight plan had been filed.

Family and friends of the pilot and passenger were interviewed by the local authorities. During the interviews, local authorities determined that both the pilot and passenger had each consumed between 8 to 10 beers between 1800 and 2400 on March 29, 2007. Prior to the flight, the pilot and passenger had departed from a local bar in Los Banos where patrons had overheard discussions between them about doing some "crazy" aerobatics.

The National Transportation Safety Board investigator-in-charge (IIC) reviewed recorded radar data for the area of Los Banos Airport. At 0124, on March 30, 2007, radar data showed a secondary 1200 (visual flight rules - VFR) beacon code at a mode C reported altitude of 1,500 feet msl (mean sea level). The data showed the recorded radar target departed to the south, and climbed to a mode C reported altitude of 7,000 feet; it then began maneuvering in the general area of Los Banos. The radar target indicated a maximum altitude of 8,000 feet msl, with the indicated altitudes varying erratically between 7,000 and 5,000 feet. The calculated ground speeds during the 20 minutes of radar data returns varied up and down, and at numerous times were greater than 200 mph.

The ensuing 1200 beacon code radar target return matched the projected flight path of the accident airplane, and the last radar return was at 01:43:36, at an indicated altitude of 5,000 feet msl. The main wreckage was located about 2,000 feet northwest of the last radar return.

On March 30, 2007, the Federal Aviation Administration (FAA) issued an alert notification (ALNOT) after receiving notice from a concerned family member that the airplane was missing and overdue. Both the Civil Air Patrol and local authorities were notified of an overdue aircraft, and they located the airplane wreckage at 1930, on March 30, 2007.

PERSONNEL INFORMATION

The pilot, age 31, held a private pilot certificate with single engine land and instrument airplane ratings. The pilot was issued a third-class medical certificate on August 15, 2005, with no limitations or restrictions. According to the pilot's most recent airman rating application dated

September 9, 2006, the pilot had accumulated 1,230 total flight hours and 1,160 flight hours as pilot-in-command. The pilot's logbooks were not located, and the pilot's total flight hours in the accident airplane make and model could not be determined.

The airplane's previous owner stated he built the airplane for the pilot and sold it to him. He had also recently trained the pilot to fly AV-L39 airplanes, and the pilot had an interest in aerobatics. The previous owner stated, "[The pilot] flew the Navion almost every day and he would not be surprised if [the pilot] tried some aerobatics in it."

According to acquaintances of the pilot, he "was a drinker...and [recently] he had been drinking heavily."

AIRCRAFT INFORMATION

The 1948-model Ryan Navion A, serial number NAV41369, was a single engine, low-wing, retractable tri-cycle landing gear airplane. The airplane was powered by a normally aspirated direct drive, air-cooled, horizontally opposed, fuel-injected six-cylinder Continental IO-550-G1 engine, serial 679281, rated at 310 horsepower, and equipped with a three-bladed constant speed propeller. The airplane was configured to carry a maximum of 4 occupants.

The airplane was issued a standard airworthiness certificate for normal category operations on August 25, 1955. The airplane was registered to the owner on February 26, 2007. The maintenance logbooks were not located.

According to the airplane's operating limitations, the Maneuvering speed (Va), Maximum Structural Cruising Speed (Vno) and the Never Exceed Speed (Vne) were 124, 160, and 190 miles per hour true indicated airspeed, respectively. The airplane was not approved for aerobatic flight maneuvers or operations.

WRECKAGE AND IMPACT INFORMATION

The accident site was located on a private wildlife refuge at global positioning system (GPS) coordinates 37 degrees 13.183 minutes north latitude by 120 degrees 53.100 minutes west longitude, at an elevation of 150 feet msl. FAA inspectors examined the wreckage at the accident scene. The debris field was approximately 2,500 feet long and 1,000 feet wide along a measured magnetic heading of 310 degrees. The fuselage was located on a dry road and came to rest on a magnetic heading of 260 degrees. The engine and propeller assembly were separated from the fuselage and came to rest buried in the terrain.

All flight control surfaces were accounted for within the accident site area. The right wing was separated from the fuselage at the wing root and the fracture surfaces exhibited signatures consistent with an overload separation. The left wing was separated from the fuselage and was located approximately 600 feet from the right wing. The fracture surfaces exhibited signatures consistent with an overload separation. The horizontal and vertical stabilizers were

separated and fragmented. The cockpit canopy was separated and the locking mechanism was engaged. The pilot and passenger were located approximately 300 and 200 feet, respectively, from the fuselage.

The instrument panel and cockpit were destroyed and fragmented. The following instrument and switch positions were noted: landing gear handle in the UP position, flap handle in the UP position, airspeed indicator 200 miles per hour, mixture/propeller/throttle controls in the full forward position. Two empty 16-ounce cans of beer were found in the wreckage.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the Merced County, Office of the Coroner, on April 2, 2007. The medical doctor's cause of death was noted as "Multiple blunt force traumatic injuries" and contributory, "Alcohol intoxication."

The FAA Civil Aeromedical Institute's (CAMI) performed toxicological screenings on the pilot. According to CAMI's report (#200700068002) the toxicological findings were positive for ethanol (alcohol). Specifically, the following was detected in the pilot's specimens: 222 (mg/dL, mg/hg) ethanol in blood, 192 (mg/dL, mg/hg) ethanol in brain, and 155 (mg/dL, mg/hg) ethanol in muscle.

In addition to CAMI's toxicological screenings, the Merced County toxicological screening was positive for 0.02 mg/L of hydrocodone in blood.

In a vehicle at the airport, local authorities found a backpack that contained a bottle with the label "HYDROC/APAP" and the pilot's name. The bottle contained 2 tablets. The pilot's doctor, who prescribed the medication, stated that based on the number of tablets remaining, the pilot was likely taking a full dose. The medication was the equivalent of vicodin. Due to privilege issues, the doctor could not describe why the pilot was taking the medication.

A review of the pilot's two medical applications for an airman medical certificate, dated August 15, 2005, and August 21, 2003, showed the pilot had checked the box "no" in response to questions 17.a. "Do You Currently Use Any Medication (Prescription or Nonprescription)," 18.n. "Substance dependence or failed a drug test ever, or substance abuse or use of illegal substance in the last 2 years," and 18.v. "History of (1) any conviction(s) involving driving while intoxicated by, while impaired by, or while under the influence of alcohol or a drug; or (2) history of any conviction(s) or administrative action(s) involving an offense(s) which resulted in the denial, suspension, cancellation, or revocation of driving privileges or which resulted in attendance at an educational or rehabilitation program."

A search of the National Driver Register revealed no previous alcohol related offenses for the pilot.

TEST AND RESEARCH

Safety Board Performance Study

The airplane performance data was derived from radar data and is limited to the sampling rate and the precision of Airport Surveillance Radar (ASR). All calculations assume steady level flight with no sideslip. The radar data showed the flight was conducting maneuvers while traveling in a northerly direction. The performance calculation indicated that during the last 10 minutes the flight performed high angle turns and pitch up maneuvers. During the last 30 seconds of flight, the pitch angle and vertical speed showed an increase to about 20 degrees and 2,500 feet per minute, respectively. The speed profile revealed the flight's speed was mostly in the region between structural cruise limit and never exceed speeds.

ADDITIONAL INFORMATION

Regulations

FAA regulation 14 CFR 91.17, alcohol or drugs, in part, stated:

(a) No person may act or attempt to act as a crewmember of a civil aircraft -- (1) Within 8 hours after the consumption of any alcoholic beverage; (2) While under the influence of alcohol; (3) While using any drug that affects the person's faculties in any way contrary to safety; or (4) While having .04 percent by weight or more alcohol in the blood. (b) Except in an emergency, no pilot of a civil aircraft may allow a person who appears to be intoxicated or who demonstrates by manner or physical indications that the individual is under the influence of drugs (except a medical patient under proper care) to be carried in that aircraft.

According to 14 CFR 67.403, "No person may make or cause to be made -(1) A fraudulent or intentionally false statement on any application for a medical certificate," or "(2) A fraudulent or intentionally false entry in any logbook, record, or report that is kept, made, or used, to show compliance with any requirement for any medical certificate."

Pilot Information

Certificate:	Private	**Age:**	31,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	August 1, 2005
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1230 hours (Total, all aircraft), 1160 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Ryan	**Registration:**	N4369K
Model/Series:	Navion A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	NAV41369
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	2950 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3693 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-550-G1
Registered Owner:	AIRNAV LLC	**Rated Power:**	310 Horsepower
Operator:	Grant H. Lindeman	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	MCE,156 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	01:53 Local	**Direction from Accident Site:**	30°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	11°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	LOS BANOS, CA (LSN)	**Type of Flight Plan Filed:**	None
Destination:	(LSN)	**Type of Clearance:**	None
Departure Time:	01:24 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	37.218612,-120.884445

Administrative Information

Investigator In Charge (IIC):	Jones, Patrick
Additional Participating Persons:	Gregory Minarik; Federal Aviation Administration; Fresno, CA
Original Publish Date:	June 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=65531