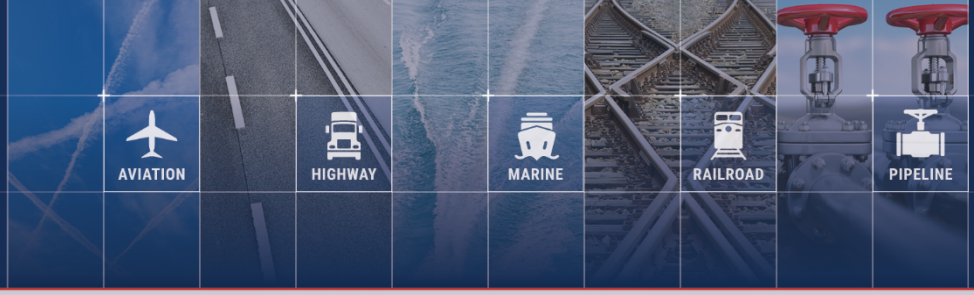

Aviation Investigation Final Report

Location:	Corning, California	**Accident Number:**	WPR23LA112
Date & Time:	February 15, 2023, 17:30 Local	**Registration:**	UNREG
Aircraft:	Star Lite SL1	**Aircraft Damage:**	Destroyed
Defining Event:	Part(s) separation from AC	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses stated that the pilot initiated a barrel roll and was pulling out of the bottom of the roll when the left wing separated from the airplane's fuselage. The airplane subsequently collided with the ground. All major structural components of the airplane were located within the wreckage path, with the left wing about 60 yards from the main wreckage. The owner disposed of the airplane wreckage before an examination could be conducted.

The pilot held a student pilot certificate and reported 120 total hours of flight experience on the application for that certificate; however, no pilot logbooks were located and the pilot's flight experience and training history could not be determined. According to the pilot's wife, the pilot had recently been diagnosed with bipolar disorder and was being treated for attention deficit hyperactivity disorder (ADHD). Reviewed records contained no further details regarding the student pilot's health conditions or any associated symptoms. Although the owner's disposal of the wreckage prevented further examination of the wing's failure, based on witness statements the pilot likely intentionally attempted an aerobatic maneuver, lost control, and was not able to recover due to the low altitude.

Postmortem toxicology testing was positive for methamphetamine and bupropion; both drugs were disqualifying for FAA pilot medical certification. The use of bupropion and amphetamine without the addition of a mood stabilizing medication in persons with bipolar disorders may increase the risk of mania or manic behavior. Even in individuals without bipolar disorder, amphetamine use can adversely affect cognition, perception of risk, and judgment/decision-making. The pilot exhibited increased risk-taking behavior by attempting to perform aerobatics with inadequate experience (as a student), in a non-aerobatic airplane, leading to a catastrophic structural failure. The pilot's likely mental health condition and substance use placed him at an increased risk of impaired judgment; however, the diagnoses of the pilot's

mental health condition(s) could not be verified, and the pilot's baseline risk tolerance is unknown. Thus, whether the pilot's mental health condition(s) or use of bupropion and amphetamine contributed to the accident cannot be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The student pilot's loss of airplane control during an intentional aerobatic maneuver, which resulted in an inflight separation of the left wing and subsequent impact with the terrain.

Findings

Personnel issues	Aircraft control - Student/instructed pilot
Aircraft	(general) - Capability exceeded
Personnel issues	Decision making/judgment - Student/instructed pilot
Personnel issues	Use of medication/drugs - Student/instructed pilot

Factual Information

History of Flight

Maneuvering-aerobatics	Part(s) separation from AC (Defining event)
Maneuvering-low-alt flying	Loss of control in flight
Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT)

On February 15, 2023, about 1730 Pacific standard time, an unregistered Star Lite SL-1 airplane was destroyed when it was involved in an accident near Corning, California. The student pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The owner of the airplane stated that on the day of the accident he and the accident pilot were taking turns flying the airplane in the traffic pattern at Corning Municipal Airport (0O4). The owner performed five or six takeoffs and landings, and then switched with the accident pilot.

The accident pilot flew once around the traffic pattern and landed without incident. On the second flight, the pilot took off from runway 35 and performed what the owner described as an “aerobatic” or barrel roll. He stated that the pilot appeared to pull out of the roll too slowly, while in a nose-down attitude, and that the pilot attempted an aggressive recovery. As the airplane‘s speed increased , the left wing separated, and the airplane impacted terrain.

Another witness to the accident provided a statement consistent with that of the airplane owner.

The airplane impacted the ground about 0.5 miles southwest of the airport. The airplane came to rest in an orchard with debris scattered throughout an approximate 90-yard radius. The left wing was located about 60 yards northwest of the main wreckage. The owner discarded the wreckage before an examination could be performed.

The airplane owner stated that he had purchased the airplane three to four months before the accident. He was under the impression it was in the ultralight category, and he did not provide maintenance records. The owner stated that the airplane was not aerobatic capable.

The pilot held a student pilot/third class medical certificate, issued in September 2021. At the time of the medical examination, the pilot reported 120 total hours of flight experience, with 45 hours in the previous six months. The pilot reported no medications. No pilot records were located and the pilot’s total flight experience at the time of the accident was not determined.

An autopsy of the pilot was performed by Bennet Omalu Pathology, at the request of the County of Tehama Sheriff-Coroner's Department. According to the autopsy report, the cause of death was acceleration-deceleration polytrauma.

The FAA Forensic Sciences Laboratory performed toxicology testing of postmortem specimens from the pilot. Amphetamine was detected in cavity blood at 149 ng/mL and in liver tissue at 144 ng/g. Bupropion was detected in cavity blood at 40 ng/mL and in liver tissue at 38 ng/g. Hydroxybupropion was detected in cavity blood at 122 ng/mL and in liver tissue at 1345 ng/g.

According to the pilot's wife, the pilot had recently been diagnosed with bipolar disorder and was being treated for attention-deficit/hyperactivity disorder. Reviewed records contained no further details regarding the pilot's health conditions or any associated symptoms.

Amphetamine is a prescription Federal Schedule II controlled substance. Amphetamine may be prescribed for attention-deficit/hyperactivity disorder, narcolepsy, and obesity. Amphetamine usually carries a warning that the drug may impair the ability to operate a vehicle, and care should be taken until the effects of the drug are assessed after initiation of use. Amphetamine also generally carries a warning that use in individuals diagnosed with bipolar disorder without an additional medication to stabilize mood can precipitate mania. Amphetamine can be used recreationally by users seeking euphoric effects and to increase alertness and relieve fatigue. Abuse of amphetamine may lead to psychosis, paranoia, auditory and visual hallucinations. In addition to being available as a drug itself, amphetamine is a metabolite of methamphetamine, another drug in the same class. The FAA considers amphetamine or methamphetamine use disqualifying for pilot medical certification.

Bupropion is a prescription medication that acts on the central nervous system (CNS) and can be used to treat depression and to help people quit smoking. Bupropion is sometimes used as part of the treatment of ADHD or of depression in bipolar disorder. Hydroxybupropion is a metabolite of bupropion. Bupropion's mechanism of action and side-effect profile differs from other antidepressants; it does not typically cause sedation but may cause insomnia; to avoid adverse events including an increased risk of seizures, strict dosing guidelines are recommended. One small study of healthy subjects found no significant impact of sustained-release bupropion on psychomotor performance, including on tests intended to simulate flying performance. In patients with major depression, bupropion may improve associated neurocognitive deficits. Research on motor vehicle crash risk indicates that depression, antidepressants, or the combination of depression and antidepressants may present a safety hazard, but the independent contributions of antidepressants to that hazard generally are not well-defined. Typically, bupropion carries a warning that any drug that acts on the CNS may impair users' ability to perform tasks requiring judgment or motor and cognitive skills, and that bupropion users should not drive or operate hazardous machinery until they are reasonably certain that the drug does not adversely affect their performance. Bupropion also generally carries a warning that use in individuals with bipolar disorder without an additional medication

to stabilize mood, can precipitate mania. At the time of this accident and the final FAA medical case review for this accident, bupropion use was unacceptable for pilots.

Pilot Information

Certificate:	Student	**Age:**	35,Male
Airplane Rating(s):	None	**Seat Occupied:**	Center
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 Without waivers/limitations	**Last FAA Medical Exam:**	September 4, 2021
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 4, 2021
Flight Time:	(Estimated) 120 hours (Total, all aircraft), 0 hours (Total, this make and model), 45 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Star Lite	**Registration:**	UNREG
Model/Series:	SL1	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	None	**Serial Number:**	UNK
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Rotax
ELT:		**Engine Model/Series:**	447
Registered Owner:	On file	**Rated Power:**	
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	KRBL,355 ft msl	**Distance from Accident Site:**	13 Nautical Miles
Observation Time:	17:54 Local	**Direction from Accident Site:**	344°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.24 inches Hg	**Temperature/Dew Point:**	12°C / -10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Corning, CA	**Type of Flight Plan Filed:**	None
Destination:	Corning, CA	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

Airport Information

Airport:	CORNING MUNI 0O4	**Runway Surface Type:**	
Airport Elevation:	295 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	39.94257,-122.17846

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	Michael Lenard; Federal Aviation Administration; Sacramento, CA
Original Publish Date:	February 20, 2025
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=106771