Aviation Investigation Final Report

Location:	Scottsdale, Arizona	**Accident Number:**	SEA08LA089
Date & Time:	March 10, 2008, 12:15 Local	**Registration:**	N8500B
Aircraft:	Aircraft Mfg & Dev. Co. CH 2000	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The certified flight instructor (CFI) stated that the engine lost power while in cruise flight en route to a designated practice area. The CFI performed the emergency checklist and initiated a forced landing to a nearby road. The right wing struck a street sign as the CFI steered the airplane to the right to avoid an oncoming vehicle during the landing roll. Examination of the airplane revealed that the fuselage and right wing were structurally damaged. The left and right wing fuel vent lines were clear and free of debris. A source of fuel was plumbed into the wing root line fitting and the engine was started and run at various RPM settings with no abnormalities. No anomalies were noted with the engine or airframe. Recovery personnel recovered 28 gallons of fuel from the airplane and the fuel system was free of debris. The reason for the loss of engine power was not determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power for undetermined reasons. Contributing to the accident were the sign and a vehicle.

Findings

Not determined	(general) - Unknown/Not determined
Environmental issues	(general) - Not specified
Environmental issues	Sign/marker - Not specified
Environmental issues	Ground vehicle - Not specified

Factual Information

History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Landing-landing roll	Collision with terr/obj (non-CFIT)

On March 10, 2008, approximately 1215 mountain standard time, an Aircraft MFG & Development Company CH 2000 airplane, N8500B, was substantially damaged during a forced landing following a reported loss of engine power while in cruise flight near Scottsdale, Arizona. The certified flight instructor (CFI) and pilot receiving instruction were not injured. The airplane was registered to Import Properties LLC of Scottsdale and operated by CRM Aviation Training Center of Scottsdale under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the local instructional flight that departed from the Scottsdale Airport (SDL) about 20 minutes prior to the accident.

According to the CFI, while in cruise flight at 4,500 feet mean sea level (msl) en route to a designated practice area, the engine lost power. The CFI stated he performed the emergency checklist and initiated a forced landing to a nearby road. During the landing roll to avoid an oncoming vehicle, the CFI steered the airplane to the right. Subsequently, the right wing struck a street sign.

Examination of the airplane revealed that the right wing and fuselage were structurally damaged. The left and right wing fuel vent lines were free of debris and unobstructed.

The engine remained attached to the engine firewall. All engine accessories remained attached to the engine and were undamaged. No visible damage to the crankcase or cylinders was observed. Throttle and mixture control continuity was established from the control levers to the engine. The fuel primer handle was found in the in and locked position.

To facilitate the engine run, an external fuel source was attached to the left fuel tank fuel line. When the master switch was turned to the "on" position and the auxiliary fuel pump was placed in the "on" position, the auxiliary fuel pump actuated. The engine was started and run at various RPM settings for about four minutes. When the magneto switch was moved to the left and right positions, an RPM drop of approximately 50 to 75 rpm was noted. No anomalies were noted with the engine or airframe.

According to the recovery personnel, about 28 gallons of fuel was drained from the airplane prior to recovery and appeared to be free of debris.

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	35,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	May 1, 2007
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 1, 2007
Flight Time:	870 hours (Total, all aircraft), 7 hours (Total, this make and model), 772 hours (Pilot In Command, all aircraft), 154 hours (Last 90 days, all aircraft), 49 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Private	**Age:**	19,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	May 1, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 1, 2007
Flight Time:	154 hours (Total, all aircraft), 1 hours (Total, this make and model), 38 hours (Pilot In Command, all aircraft), 47 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aircraft Mfg & Dev. Co.	**Registration:**	N8500B
Model/Series:	CH 2000	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	20-1014
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	February 1, 2008 100 hour	**Certified Max Gross Wt.:**	1692 lbs
Time Since Last Inspection:	39.8 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2487.1 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-235-N2C
Registered Owner:	Import Properties LLC	**Rated Power:**	116 Horsepower
Operator:	CRM Aviation Training Center	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KSDL,1510 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	11:53 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.28 inches Hg	**Temperature/Dew Point:**	23°C / -3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Scottsdale, AZ (KSDL)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	12:00 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	33.622776,-111.910278

Administrative Information

Investigator In Charge (IIC):	Cawthra, Joshua
Additional Participating Persons:	James W Kerr; Federal Aviation Administration; Scottsdale, AZ
Original Publish Date:	April 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67643