SureFly Ignition Module examination report

Ignition module model	SIM4N
Ignition module serial number	4N-0124015
Position on engine	Right
Total Time	Unknown
Time since rebuild	Unknown
Build Date	01/04/2024
In service date	Unknown
Aircraft Make Model	PA-28-161
Aircraft Serial number	28-8016147
Aircraft registration	N81250
File number	24-002

Name	Signature	Date
Jason Hutchison	[redacted]	10/15/2024

General Information			
Date	09/10/2024	NTSB Accident #	ERA24FA300
Facility	SureFly	Accident date	07/10/2024
Address	350 Howard Clemmons Rd. Granbury, TX 76048	Accident location	Palm Beach Gardens, FL.
		NTSB Investigator	Daniel Boggs
Inspection Witnesses			
Name	Daniel Boggs	Name	Jordan Normark
Address	FL	Address	Granbury, TX
Organization	NTSB	Organization	SureFly
Phone	[redacted]	[redacted]	[redacted]
Name	Gwen Hutchison	Name	Jason Hutchison
Address	Granbury, TX	Address	Granbury, TX
Organization	SureFly	Organization	SureFly
Phone	[redacted]	[redacted]	[redacted]
Name		Name	
Address		Address	
Organization		Organization	
Phone		Phone	

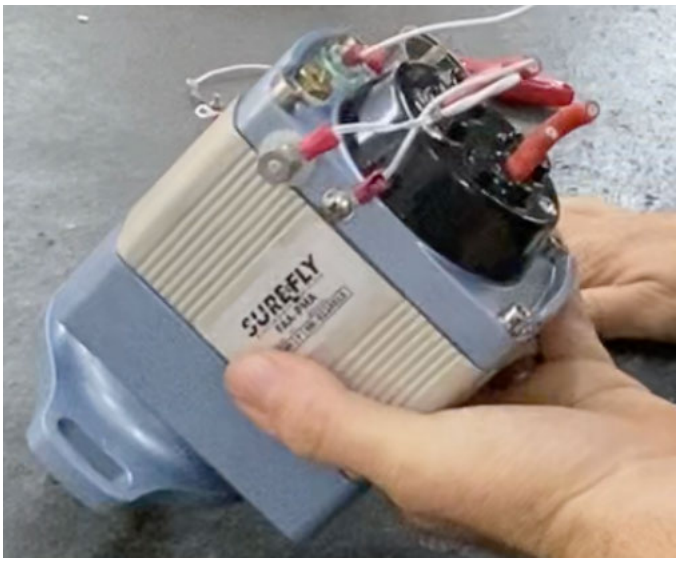
Report Summary
The SureFly Ignition Module (SIM) was rendered inoperative due to being submerged in water. The control circuit board and electronic coil pack exhibited damage consistent with being submerged in water. There were no pre-accident abnormalities observed during the examination. A new control circuit board and new electronic coil pack were installed into the Ignition Module and the system produced sparks when tested.

Disposition of ignition module
The Ignition module was shipped to facility designated by NTSB

Examination Report:

External:

The SIM was received with the ignition harness cap, power lead, p-lead wire, and drive gear installed. All fasteners were secure. The power terminal exhibited corrosion consistent with being submerged in water. The external body did not exhibit any impact damage. The input shaft required light hand pressure to initially rotate. Once freed the shaft turned freely. This is expected ball bearing corrosion from being submerged in water.

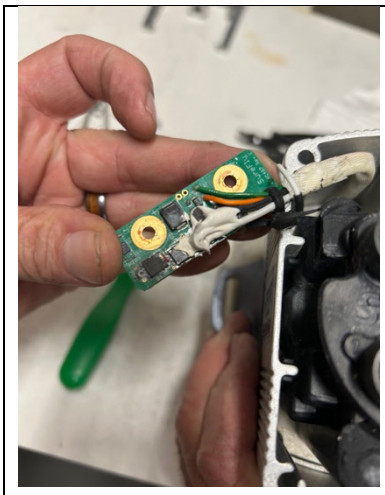


Test:

The SIM was installed on the test bench and was set to turn 2700RPM. Power was applied SIM. The SIM did not produce sparks as expected.

Internal:

The top control circuit board exhibited damage/corrosion consistent with being underwater. No pre-accident damage was noted.



Coil Pack:

The ignition harness and power connection contacts were clean. The exterior of the coil pack had scale and debris consistent with being under water. The coil pack had a fracture in the potting compound consistent with thermal stress due to high current draw.

Main board also had damage/corrosion consistent with being under water. No pre-accident damage wase noted.

SureFly Ignition Module examination report			
File Number	24-002	Ignition Module S/N	4N-0124015


Timing wheel had damage/corrosion consistent with being under water. No pre-accident damage wase noted.

General:

No mechanical defects were noted. All electrical connections were intact.

Conclusion:

The SIM did not exhibit any pre-accident damage or abnormalities. The damage to the electrical components (control board and coil pack) were consistent with being underwater with power applied to the unit. A new board and coil pack were installed in the unit. The unit was tested with the new components, the unit produced sparks.

SureFly Ignition Module examination report			
File Number	24-002	Ignition Module S/N	4N-0124015

SureFly Ignition Module examination report

Ignition module model:	SIM4P
Ignition module serial number	4P-2424010
Position on engine	Left
Total Time	Unknown
Time since rebuild	Unknown
Build Date	06/11/2024
In service date	Unknown
Aircraft Make Model	PA-28-161
Aircraft Serial number	28-8016147
Aircraft registration	N81250
File number	24-001

Name	Signature	Date
Jason Hutchison		10/15/2024

SureFly Ignition Module examination report			
File Number	24-001	Ignition Module S/N	4P-2424010

General Information			
Date:	09/10/2024	NTSB Accident #	ERA24FA300
Facility:	SureFly	Accident date	07/10/2024
Address:	350 Howard Clemmons Rd. Granbury, TX 76048	Accident location	Palm Beach Gardens, FL.
		NTSB Investigator	Daniel Boggs
Inspection Witnesses			
Name	Daniel Boggs	Name	Jordan Normark
Address	FL	Address	Granbury, TX
Organization	NTSB	Organization	SureFly
Phone	[redacted]	[redacted]	[redacted]
Name	Gwen Hutchison	Name	Jason Hutchison
Address	Granbury, TX	Address	Granbury, TX
Organization	SureFly	Organization	SureFly
Phone	[redacted]	[redacted]	[redacted]
Name		Name	
Address		Address	
Organization		Organization	
Phone		Phone	

Report Summary
The SureFly Ignition Module (SIM) was rendered inoperative due to being submerged in water. The control circuit board and electronic coil pack exhibited damage consistent with being submerged in water. There were no pre-accident abnormalities observed during the examination. A new control circuit board and new electronic coil pack were installed into the Ignition Module and the system produced sparks when tested.

Disposition of ignition module
The Ignition module was shipped to facility designated by NTSB

Examination Report:

External:

The SIM was received with the ignition harness cap, power lead, p-lead wire, and drive gear installed. All fasteners were secure. The power terminal exhibited corrosion consistent with being submerged in water. The external body did not exhibit any impact damage. The input shaft required light hand pressure to initially rotate. Once freed the shaft turned freely. This is expected ball bearing corrosion from being submerged in water.

Test:

The SIM was installed on the test bench and was set to turn 2700RPM. Power was applied SIM. The SIM did not produce sparks as expected. The SIM indicator light was blinking irregularly which is an indicator of control circuit board damage.

Internal:

The top control circuit board exhibited damage/corrosion consistent with being underwater. No pre-accident damage was noted.

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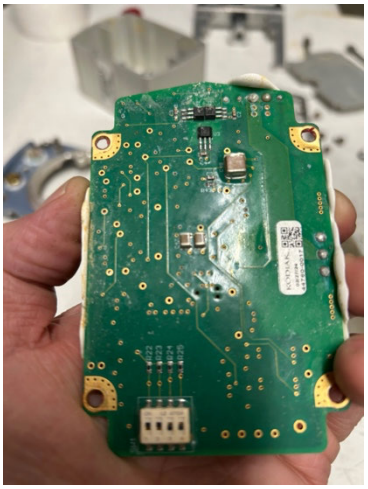
File Number	24-001	Ignition Module S/N	4P-2424010

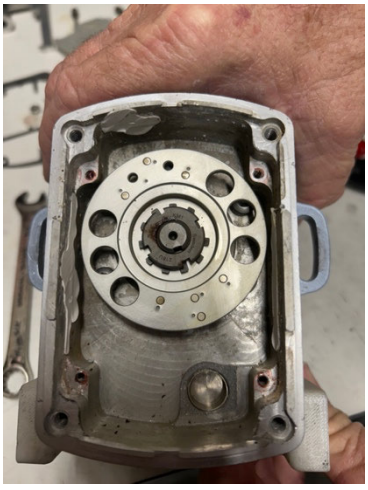
Coil Pack:
The ignition harness and power connection contacts were clean. The exterior of the coil pack had scale and debris consistent with being under water.

Main board also had damage/corrosion consistent with being under water. No pre-accident damage was noted.

Timing wheel had damage/corrosion consistent with being under water. No pre-accident damage wase noted.

General:
No mechanical defects were noted. All electrical connections were intact.



SureFly Ignition Module examination report			
File Number	24-001	Ignition Module S/N	4P-2424010

Conclusion:
The SIM did not exhibit any pre-accident damage or abnormalities. The damage to the electrical components (control board and coil pack) were consistent with being underwater with power applied to the unit. A new board and coil pack were installed in the unit. The unit was tested with the new components, the unit produced sparks.

SureFly Ignition Module examination report			
File Number	24-001	Ignition Module S/N	4P-2424010