

NATIONAL TRANSPORTATION SAFETY BOARD
PILOT/OPERATOR AIRCRAFT ACCIDENT/INCIDENT REPORT
 This form to be used for reporting civil and public aircraft accidents and incidents

BASIC INFORMATION

Accident/Incident Location

Nearest City/Place: Phoenix Deer Valley Airport State: AZ
 ZIP: 85027 Country: USA
 Latitude: 33.6925 Longitude: -112.0306 ADSB
 (Enter in decimal degrees or degrees:minutes:seconds)

Accident/Incident Date/Time

Date: 05/13/2020 Local Time: 8:42 AM
 mm/dd/yyyy Time Zone: MST

Collision with Other Aircraft: ☐ Midair ☐ On-ground ☒ None

AIRCRAFT INFORMATION

Registration Number: N201HH
 Manufacturer: Mooney
 Model: M20J (201)
 Serial Number: 24-0053
 Year of Manufacture: 1977
 Amateur-Built: ☐ Yes ☒ No If Yes: ☐ Kit/Plans ☐ Original Design Make: _____

☒ IFR-Equipped and Certified
☐ Commercial Space Flight
☐ Unmanned Aircraft

Maximum Gross Weight: 2740 lbs
 Weight at Time of Accident/Incident: 2600 lbs
 Number of Seats: 4 Flight Crew Seats: 2
 Cabin Crew Seats: X Passenger Seats: 2
 Number of Engines: 1

Category of Aircraft

- ☒ Airplane
☐ Balloon
☐ Blimp/Dirigible
☐ Glider
☐ Gyroplane
☐ Helicopter
☐ Powered Lift
☐ Rocket
☐ Ultralight
☐ Unknown

Type of Airworthiness Certificate
 (Check all that apply)

- Standard**
☒ Normal
☐ Aerobatic
☐ Balloon
☐ Commuter
☐ Transport
☐ Utility
☐ Certificate of Authorization or Waiver (COA)
☐ None
- Special**
☐ Restricted
☐ Limited
☐ Provisional
☐ Special Flight
☐ Experimental
☐ Special Light-Sport
☐ Experimental Light-Sport
☐ Unknown

Landing Gear

- (Check all that apply)
☒ Retractable
☒ Tricycle ☐ Tailwheel
☐ Amphibian ☐ High Skid
☐ Emergency Float ☐ Skid
☐ Float ☐ Ski
☐ Hull ☐ Ski/Wheel
☐ Other Launch/Recovery System
☐ None ☐ Unknown

Engine Type (Select one)

- ☒ Reciprocating ☐ Liquid Rocket
☐ Turbo Shaft ☐ Solid Rocket
☐ Turbo Prop ☐ Hybrid Rocket
☐ Turbo Jet ☐ None
☐ Turbo Fan ☐ Unknown
☐ Electric

Fuel System Type (Reciprocating)

- ☐ Carburetor ☒ Fuel-Injected

Engine	Engine Manufacturer	Engine Model/Series	Manufacturer's Serial Number	Date of Mfg. mm/dd/yyyy	Rated Power ☒ Horsepower or ☐ lbs of Thrust	Total Time (hours)	Time Since: Inspection (hours)	Overhaul (hours)
Eng. 1	<u>Lycoming</u>	<u>IO-360-A3B6</u>	<u>RL-7873-51E</u>	<u>07/11/2014</u>	<u>200</u>	<u>170</u>	<u>27</u>	<u>170</u>
Eng. 2								
Eng. 3								
Eng. 4								

Last Inspection Type

- ☐ 100-Hour ☐ Continuous Airworthiness
☐ AAIP ☐ Conditional Inspection
☒ Annual ☐ Unknown

Date Last Inspection: 05/29/2019
 mm/dd/yyyy

Airframe Total Time: 4761 hrs
 hours measured at (Select one)
☒ Last Inspection ☐ Time of Accident/Incident

Type of Maintenance Program (Select one)

- ☒ Annual
☐ Conditional (Amateur-built only)
☐ Manufacturer's Inspection Program
☐ Other Approved Inspection Program (AAIP)
☐ Continuous Airworthiness
☐ Other, specify: _____

Description of Fire Extinguishing System

- ☐ None
☐ Specify: _____

Propeller 1

- ☐ Fixed Pitch
☒ Controllable Pitch
☐ Ground Adjustable

Manufacturer: McCaughey
 Model: B2D34C214-B

Propeller 2

- ☐ Fixed Pitch
☐ Controllable Pitch
☐ Ground Adjustable

Manufacturer: _____
 Model: _____

ELT Installed: ☒ Yes ☐ No

If Yes:
 ELT Manufacturer: Dorne & Margolis
 Model or Part No.: UKN
 TSO No.: ☒ C91 (121.5 MHz) ☐ C91a (121.5 MHz)
☐ C126 (406 MHz)

Was ELT still mounted in aircraft? ☒ Yes ☐ No
 Was ELT still connected to antenna? ☒ Yes ☐ No
 Did ELT Activate? ☒ Yes ☐ No

If activated:
 Did ELT Aid in Locating Aircraft: ☐ Yes ☒ No

If not activated:
 Indicate Reason: ☐ Impact Damage
☐ Fire Damage
☐ Battery Expired/Damaged
☐ Unknown

Additional Equipment (Check all that apply)

- ☒ ADS-B
☐ Airframe Parachute
☐ Angle of Attack Indicator
☒ Autopilot
☒ Data Recorder
☐ Electronic Flight Bag or Handheld Device
☒ Electronic Multifunction Display
☐ Electronic Primary Flight Display
☒ Handheld GPS
☐ Heads Up Display
☒ Onboard Weather
☐ Satellite Tracking Device
☒ Stall Warning System
☐ Video Recording Device
☐ Other, Specify: _____

OWNER/OPERATOR INFORMATION**Registered Aircraft Owner**Name: George William SchandelCity: PhoenixState: AZZIP: 85016Fractional Ownership Aircraft: ☐ Yes ☒ NoCountry: USA**Operator of Aircraft**☒ Same As Registered Owner☐ Same Address as Registered Owner

Name: _____

City: _____

Doing Business As: _____

State: _____ ZIP: _____

Air Carrier/Operator Designator (4 Character Code): _____

Country: _____

Operating Certificates Held

(Check all that apply)

- ☒ None
☐ Flag Carrier Operating Certificate (FAR 121)
☐ Supplemental
☐ Air Cargo
☐ Foreign Air Carriers (FAR 129)
☐ Rotorcraft External Load (FAR 133)
☐ Commuter Air Carrier (FAR 135)
☐ On-Demand Air Taxi (FAR 135)
☐ Commercial Air Tour (FAR 136)
☐ Agricultural Aircraft (FAR 137)
☐ Pilot School (FAR 141)
☐ Certificate of Authorization or Waiver (COA)
☐ Commercial Space Transportation
Experimental Permit
☐ Commercial Space Transportation License
☐ Other Operator of Large Aircraft

Regulation Flight Conducted Under

- ☒ FAR 91 ☐ FAR 129 ☐ FAR 415
☐ FAR 103 ☐ FAR 133 ☐ FAR 431
☐ FAR 121 ☐ FAR 135 ☐ FAR 435
☐ FAR 125 ☐ FAR 137 ☐ FAR 437

☐ FAR 91 Special Flight
☐ Non-US, Commercial
☐ Non-US, Non-commercial

☐ Public Aircraft (Select one)
☐ Armed Forces
☐ Federal
☐ State
☐ Local
☐ Unknown

Revenue Operation for FAR 121, 125, 129, 135

(Select one for each group)

- ☐ Scheduled or Commuter ☐ Domestic
☐ Non-Scheduled or Air Taxi ☐ International

☐ Passenger
☐ Cargo
☐ Mail Contract Only

Purpose of Flight for FAR 91, 103, 133, 137

(Select one)

- ☐ Aerial Application ☐ Firefighting ☐ Unknown
☐ Aerial Observation ☒ Flight Test
☐ Air Drop ☐ Glider Tow
☐ Air Race/Show ☐ Instructional
☐ Banner Tow ☐ Other Work Use
☐ Business ☐ Personal
☐ Executive/Corporate ☐ Positioning
☐ External Load ☐ Skydiving
☐ Ferry

Revenue Sightseeing Flight☐ Yes ☐ No**Air Medical Flight**☐ Yes ☐ No**AIRPORT INFORMATION** (Fill in if accident/incident occurred on approach, landing, takeoff, departure, or within 3 miles of an airport)Airport Name: Phoenix Deer Valley AirportAirport Identifier: DVTProximity to Airport: ☒ Off Airport/Airstrip ☐ On Airport/Airstrip ☐ N/ADistance From Airport Center: 1 smDirection From Airport: East, Approx 90 degrees trueAirport Elevation: 1478 ft. msl**Runway Information**Runway ID: NA (L/R/C) Length: _____ ft Width: _____ ft**Runway/Landing Surface** (Check all that apply)

- ☐ Asphalt ☐ Grass/Turf ☐ Macadam ☐ Water
☐ Concrete ☐ Gravel ☐ Metal/Wood
☐ Dirt ☐ Ice ☐ Snow ☐ Unknown

Condition of Runway/Landing Surface (Check all that apply)

- ☐ Dry ☐ Snow-Compacted ☐ Water-Calm
☐ Holes ☐ Snow-Crusted ☐ Water-Choppy
☐ Ice Covered ☐ Snow-Dry ☐ Water-Glassy
☐ Rough ☐ Snow-Wet ☐ Wet
☐ Rubber Deposits ☐ Soft
☐ Slush-Covered ☐ Vegetation ☐ Unknown

Approach/Departure Segment (Select one)

- ☐ Taxi ☐ VFR Departure ☐ On Instrument Approach ☐ Downwind ☐ Low Approach
☐ Takeoff ☐ IFR Departure Procedure/Clearance ☐ Landing ☐ Base ☐ Go Around
☐ Initial Climb ☐ Final ☐ Aborted Landing (after touchdown)
☐ Crosswind ☐ Unknown

IFR Approach (Check all that apply)

- ☐ None
☐ ADF/NDB ☐ PAR ☐ MLS ☐ Practice
☐ SDF ☐ Sidestep ☐ LDA ☐ GPS
☐ VOR/TVOR ☐ ILS ☐ ASR
☐ VOR/DME ☐ Localizer Only ☐ Visual
☐ TACAN ☐ LOC-back course ☐ Contact
☐ RNAV ☐ Circling
☐ Unknown

VFR Approach (Check all that apply)

- ☐ None
☐ Traffic Pattern ☐ Stop and Go
☒ Straight-In ☐ Touch and Go
☐ Valley/Terrain Following ☐ Simulated Forced Landing
☐ Go Around ☐ Forced Landing
☐ Full Stop ☐ Precautionary Landing
☐ Unknown

"FLIGHT CREWMEMBER 1" INFORMATION																																																																																																				
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"Flight Crewmember 1" was pilot flying ☒ Yes ☐ No																																																																																																				
"Flight Crewmember 1" Identification First Name: <u>George</u> Middle Initial: <u>W</u> Last Name: <u>Schandel</u> City of Residence: _____ State: _____ ZIP: _____ Country: _____ Age at time of Accident/Incident: <u>76</u> Date of Birth: [REDACTED] mm/dd/yyyy Certificate Number: [REDACTED] CFC																																																																																																				
Degree of Injury ☒ None ☐ Fatal ☐ Minor ☐ Unknown ☐ Serious			Seat Occupied ☒ Left ☐ Front ☐ Unknown ☐ Right ☐ Rear ☐ Center ☐ Single			Restraint Type Available ☐ None ☐ Lap only ☒ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap only ☒ 3-point ☐ 4-point ☐ 5-point ☐ Unknown			Inflatable Restraints ☒ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown																																																																																											
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Medical Certificate Limitations None - Basic Medical 12/05/2017																																																																																																				
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Date of Last Flight Review or Equivalent, Including FAR 121/135 Checks: <u>02/06/2019</u> mm/dd/yyyy				Flight Review Aircraft Make: <u>Mooney</u> Model: <u>M20J (201)</u>																																																																																																
Airplane Rating(s) (Check all that apply) ☐ None ☒ Single-Engine Land ☐ Single-Engine Sea ☒ Multiengine Land ☐ Multiengine Sea			Other Aircraft Rating(s) (Check all that apply) ☒ None ☐ Airship ☐ Balloon ☐ Glider ☐ Gyroplane ☐ Helicopter ☐ Powered Lift			Instrument Rating(s) (Check all that apply) ☐ None ☒ Airplane ☐ Helicopter ☐ Powered Lift			Instructor Rating(s) (Check all that apply) ☐ None ☒ Airplane Single-Engine ☐ Airplane Multi-Engine ☐ Gyroplane ☐ Powered Lift ☐ Instrument Airplane ☐ Instrument Helicopter ☐ Helicopter ☐ Glider ☐ Sport																																																																																											
Type Ratings						Student Endorsements (Include dates)																																																																																														
<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2" style="text-align: left; padding: 2px;">Flight Time (Enter appropriate number of hours in each box)</th> <th rowspan="2" style="padding: 2px;">All Aircraft</th> <th rowspan="2" style="padding: 2px;">This Make & Model</th> <th rowspan="2" style="padding: 2px;">Airplane Single Engine</th> <th rowspan="2" style="padding: 2px;">Airplane Multiengine</th> <th rowspan="2" style="padding: 2px;">Night</th> <th colspan="2" style="padding: 2px;">Instrument</th> <th rowspan="2" style="padding: 2px;">Rotorcraft</th> <th rowspan="2" style="padding: 2px;">Glider</th> <th rowspan="2" style="padding: 2px;">Lighter Than Air</th> </tr> <tr> <th style="padding: 2px;">Actual</th> <th style="padding: 2px;">Simulated</th> </tr> </thead> <tbody> <tr> <td style="text-align: left; padding: 2px;">Total Time</td> <td>3,242</td> <td>3,000</td> <td>3,205</td> <td>37</td> <td>33</td> <td>111</td> <td>164</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td style="text-align: left; padding: 2px;">Pilot in Command (PIC)</td> <td>3,116</td> <td>3,000</td> <td>3,000</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left; padding: 2px;">Time as Instructor</td> <td>748</td> <td>700</td> <td>748</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left; padding: 2px;">This Make/Model</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left; padding: 2px;">Last 90 Days</td> <td>8</td> <td>8</td> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left; padding: 2px;">Last 30 Days</td> <td>2</td> <td>2</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: left; padding: 2px;">Last 24 Hours</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											Flight Time (Enter appropriate number of hours in each box)	All Aircraft	This Make & Model	Airplane Single Engine	Airplane Multiengine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Actual	Simulated	Total Time	3,242	3,000	3,205	37	33	111	164	1			Pilot in Command (PIC)	3,116	3,000	3,000								Time as Instructor	748	700	748								This Make/Model											Last 90 Days	8	8	8								Last 30 Days	2	2	2								Last 24 Hours										
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"FLIGHT CREWMEMBER 2" INFORMATION**"Flight Crewmember 2" Responsibilities at the Time of Accident/Incident**

☐ Pilot ☐ Co-Pilot ☐ Student Pilot ☐ Flight Instructor ☐ Check Pilot ☐ Flight Engineer ☐ Other Flight Crew

"Flight Crewmember 2" was pilot flying ☐ Yes ☐ No

"Flight Crewmember 2" Identification

First Name: _____

City of Residence: _____

Middle Initial: _____

State: _____ ZIP: _____

Last Name: _____

Country: _____

Age at time of Accident/Incident: _____ Date of Birth: _____ mm/dd/yyyy

Certificate Number: _____

Degree of Injury

☐ None ☐ Fatal
☐ Minor ☐ Unknown
☐ Serious

Seat Occupied

☐ Left ☐ Front ☐ Unknown
☐ Right ☐ Rear
☐ Center ☐ Single

Restraint Type**Available**

☐ None
☐ Lap only
☐ 3-point
☐ 4-point
☐ 5-point
☐ Unknown

Used

☐ None
☐ Lap only
☐ 3-point
☐ 4-point
☐ 5-point
☐ Unknown

Inflatable Restraints

☐ Not Installed
☐ Installed
☐ Not Deployed
☐ Deployed
☐ Unknown

Pilot Certificate(s) (Check all that apply)

☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military
☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign
☐ Student ☐ Sport ☐ Flight Engineer

Principal Occupation

☐ Pilot
☐ Other
☐ Unknown

Medical Certificate

☐ None ☐ Class 3
☐ Class 1 ☐ Driver's License (Sport Pilot only)
☐ Class 2 ☐ Unknown

Medical Certificate Validity

☐ Without limitations/waivers ☐ Unknown
☐ With limitations/waivers ☐ N/A
☐ Special Issuance

Date of Last Medical

mm/dd/yyyy

Medical Certificate Limitations**Medical Certificate Special Issuance****Date of Last Flight Review
or Equivalent, Including
FAR 121/135 Checks:**

mm/dd/yyyy

Flight Review Aircraft

Make: _____

Model: _____

Airplane Rating(s)

(Check all that apply)

☐ None
☐ Single-Engine Land
☐ Single-Engine Sea
☐ Multiengine Land
☐ Multiengine Sea

Other Aircraft Rating(s)

(Check all that apply)

☐ None
☐ Airship
☐ Balloon
☐ Glider
☐ Gyroplane
☐ Helicopter
☐ Powered Lift

Instrument Rating(s)

(Check all that apply)

☐ None
☐ Airplane
☐ Helicopter
☐ Powered Lift

Instructor Rating(s)

(Check all that apply)

☐ None ☐ Instrument Airplane
☐ Airplane Single-Engine ☐ Instrument Helicopter
☐ Airplane Multi-Engine ☐ Helicopter
☐ Gyroplane ☐ Glider
☐ Powered Lift ☐ Sport

Type Ratings**Student Endorsements** (Include dates)**Flight Time** (Enter appropriate
number of hours in each box)

All
Aircraft

This Make
& Model

Airplane
Single
Engine

Airplane
Multiengine

Night

Instrument

Actual

Simulated

Rotorcraft

Glider

Lighter
Than Air

Total Time

Pilot in Command (PIC)

Time as Instructor

This Make/Model

Last 90 Days

Last 30 Days

Last 24 Hours

ADDITIONAL FLIGHT CREWMEMBERS (Exclusive of cabin crew, complete the following information)

Crew Name and Address	Seat Occupied	Injury
First Name: _____ City of Residence: _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____	☐ Left ☐ Front ☐ Center ☐ Rear ☐ Right ☐ Single ☐ Unknown	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown
Pilot Certificate(s) (Check all that apply) ☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military ☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign ☐ Student ☐ Sport ☐ Flight Engineer	Restraint Type: Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	Inflatable Restraints ☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown
Type Rating/Endorsement for Accident/Incident Aircraft? ☐ Yes ☐ No	Total Flight Time at the Time of this Accident/Incident: _____ hrs	

Crew Name and Address	Seat Occupied	Injury
First Name: _____ City of Residence: _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____	☐ Left ☐ Front ☐ Center ☐ Rear ☐ Right ☐ Single ☐ Unknown	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown
Pilot Certificate(s) (Check all that apply) ☐ None ☐ Flight Instructor ☐ Commercial ☐ US Military ☐ Private ☐ Recreational ☐ Airline Transport ☐ Foreign ☐ Student ☐ Sport ☐ Flight Engineer	Restraint Type: Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	Inflatable Restraints ☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown
Type Rating/Endorsement for Accident/Incident Aircraft? ☐ Yes ☐ No	Total Flight Time at the Time of this Accident/Incident: _____ hrs	

PASSENGER(S) / OTHER PERSONNEL (Include cabin crew; continue on separate sheet if necessary)

Name and Address	Seat	Injury	Restraint Type	Inflatable Restraints	Age
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other	☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If Under 5, ☐ Child Restraint ☐ Lap-Held ☐ Unknown
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other	☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If Under 5, ☐ Child Restraint ☐ Lap-Held ☐ Unknown
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other	☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If Under 5, ☐ Child Restraint ☐ Lap-Held ☐ Unknown
First Name: _____ City : _____ Middle Initial: _____ State: _____ ZIP: _____ Last Name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other	☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If Under 5, ☐ Child Restraint ☐ Lap-Held ☐ Unknown

FLIGHT ITINERARY INFORMATION				
Last Departure Point Airport ID: <u>DVT</u> City: <u>Phoenix</u> State: <u>AZ</u> Country: <u>USA</u>		Time of Departure Time: <u>8:23 AM</u> Time Zone: <u>MST</u>		Destination Airport ID: <u>DVT</u> City: <u>Phoenix</u> State: <u>AZ</u> Country: <u>USA</u>
				Type Flight Plan Filed ☒ None ☐ VFR/IFR ☐ Company VFR ☐ IFR ☐ Military VFR ☐ Unknown ☐ VFR Activated? ☐ Yes ☐ No ☐ Unknown
Type of ATC Clearance/Service (Check all that apply) ☐ None ☐ Special VFR ☐ Special IFR ☐ VFR Flight Following ☐ Cruise ☒ VFR ☐ IFR ☐ VFR On Top ☐ Traffic Advisory ☐ Unknown / NA				
Airspace where the accident/incident occurred (Check all that apply) ☐ Class A ☐ Class G ☐ Military Operations Area (MOA) ☐ Special ☐ Class B ☐ Demo Area ☐ Airport Advisory Area ☐ Air Traffic Control Area ☐ Class C ☐ Warning Area ☐ Jet Training Area ☐ Unknown ☒ Class D ☐ Prohibited Area ☐ TRSA ☐ Class E ☐ Restricted Area ☐ FAR 93				Altitude of In-Flight Occurrence: _____ ft msl
WEATHER INFORMATION AT THE ACCIDENT/INCIDENT SITE				
Source of Pilot Weather Information (Check all that apply) ☐ National Weather Service ☐ Company ☒ Flight Service Station ☐ Military ☐ TV/Radio ☐ Internet ☒ Automated Report ☐ None ☐ Commercial Weather Service (DUATS) ☐ Unknown ☐ On-Board Weather			Weather Observation Facility Facility ID: <u>DVT</u> Observation Time: <u>8:00 ATIS</u> Time Zone: <u>MST</u> Distance from Accident Site: <u>1</u> nm Direction from Accident Site: <u>270 approx</u> degrees true	
Basic Conditions ☒ VMC ☐ IMC ☐ Unknown		Light Condition ☐ Dawn ☐ Dusk ☐ Dark Night ☐ Unknown ☐ Day ☐ Night ☐ Bright Night		
Sky/Lowest Cloud Condition ☒ Clear ☐ Thin Broken ☐ Few ☐ Thin Overcast ☐ Partial Obscuration ☐ Unknown ☐ Scattered Lowest Cloud Condition Height _____ ft agl		Ceiling ☒ None (Clear) ☐ Obscured ☐ Broken ☐ Indefinite ☐ Overcast ☐ Unknown Ceiling Height _____ ft agl		Temperature: <u>21</u> (C) or <u>70</u> (F) Dew Point: <u>06</u> (C) or _____ (F) Altimeter Setting: <u>29.90</u> in. Hg or _____ MB
Wind Direction ☒ Variable -or- Direction: _____ degrees true	Wind Speed ☐ Calm ☐ Light and Variable -or- Speed: <u>3</u> kts	Wind Gusts ☒ Not Gusting -or- Speed: _____ kts	Visibility <u>10</u> miles RVR: _____ feet RVV: _____ miles Density Altitude: _____ ft	
Intensity of Precipitation ☐ Light ☐ Moderate ☐ Heavy ☐ N/A ☐ Unknown	Type of Precipitation (Check all that apply) ☒ None ☐ Drizzle ☐ Freezing Rain ☐ Rain ☐ Ice Pellets ☐ Snow Shower ☐ Snow ☐ Snow Pellets ☐ Ice Pellets Shower ☐ Hail ☐ Snow Grains ☐ Freezing Drizzle ☐ Rain Showers ☐ Ice Crystals		Restriction to Visibility (Check all that apply) ☒ None ☐ Fog ☐ Blowing Dust ☐ Ground Fog ☐ Blowing Sand ☐ Haze ☐ Blowing Snow ☐ Ice Fog ☐ Blowing Spray ☐ Smoke ☐ Dust ☐ Unknown	
Icing Forecast Amount ☒ None ☐ Trace ☐ Light ☐ Moderate ☐ Severe ☐ Unknown Type ☐ N/A ☐ Rime ☐ Clear ☐ Mixed ☐ Unknown		Icing Actual Amount ☒ None ☐ Trace ☐ Light ☐ Moderate ☐ Severe ☐ Unknown Type ☐ N/A ☐ Rime ☐ Clear ☐ Mixed ☐ Unknown		Turbulence Type (Check all that apply) ☒ None ☐ Clear Air ☐ Terrain-Induced ☐ Convective Turbulence Severity ☐ Light ☐ Moderate ☐ Severe ☐ Extreme
NOTAMs (D and FDC), AIRMETs, SIGMETs, PIREPs in effect at the time of the accident/incident: <u>AIRMET Moderate Turbulence Below 18,000 Feet</u>				

DAMAGE TO AIRCRAFT AND OTHER PROPERTY**Aircraft Damage**

- ☐ None ☐ Substantial
☐ Minor ☒ Destroyed
 ☐ Unknown

Aircraft Fire

- ☒ None ☐ Both Ground and In-Flight
☐ In-Flight ☐ Fire at Unknown Time
☐ On-Ground ☐ Unknown

Aircraft Explosion

- ☒ None ☐ Both Ground and In-Flight
☐ In-Flight ☐ Explosion at Unknown Time
☐ On-Ground ☐ Unknown

Description of Damage to Aircraft and Other Property *(Use additional sheet if necessary)*

Aircraft was damaged beyond total repair as a result of the catastrophic total engine failure.

No discernable damage occurred to the unimproved raw desert. There was no fire and the aircraft salvage crew drained the approximately 60 gallons of 100LL fuel so there was no real environmental damage except some visible scrapes and tracks left by the aircraft impact on landing.

NARRATIVE HISTORY OF FLIGHT *(Please type or print in ink)*

Describe what occurred in chronological order, including circumstances leading to and nature of accident/incident. Describe terrain and include wreckage distribution sketch if pertinent. Attach extra sheets if needed. State departure time and location, services obtained, and intended destination. Provide as much detail as possible.

See the attachments to page 9 for the NARATIVE HISTORY OF FLIGHT...

RECOMMENDATION (How could this accident/incident have been prevented?)

Operator/Owner Safety Recommendation

The NTSB Teardowns and investigation of the engine failure and the loss of prop governor control must be completed to try to determine the precise cause of this accident.

However, I am firm in my belief that had I not been talked into removing a prop governor that had always given me 2700 RPM on almost 4000 takeoffs in this airplane in the past 38 years, there would have been no accident.

I guess my recommendation would simply be: "If it ain't broke, don't fix it!"

MECHANICAL MALFUNCTION/FAILURE (If more space is needed, continue on separate sheet)

Was there Mechanical Malfunction/Failure? ☒ Yes ☐ No

(If yes, list the name of the part, manufacturer, part no., serial no., and describe the failure.)

Lycoming IO-360-A3B6 Case failure at the #4 Cylinder lifter push rod.
170 hours since Zero Time Factory Reman

McCauley Governor PN C290D5B/T15 Zero Time since overhaul.

**Total Time/Cycles
On Part**

170 _____ Hours

_____ Cycles

**Time Since This Part
Inspected/Overhauled**

16 _____ Hours

FUEL & SERVICES INFORMATION**Fuel on Board at Last Takeoff**

(Convert from pounds, as necessary)

60 _____ Gallons

Fuel Type

☐ 80/87

☐ 115/145

☐ Jet B

☐ Other, specify _____

☒ 100 Low Lead

☐ Jet A

☐ JP8

☐ 100/130

☐ Jet A-1

☐ Automotive

Other Services, if Any, Prior to Departure**EVACUATION OF AIRCRAFT**

Was an emergency evacuation of the aircraft performed? ☒ Yes ☐ No

Method of Exit – Describe how the occupants exited and how many occupants evacuated each location

The mechanic sitting in the right seat had unlatched the cockpit door prior to landing and both occupants exited immediately from the single right side door.

OTHER AIRCRAFT – COLLISION (If air or ground collision occurred, complete this section for other aircraft)

Aircraft Registration Number

Manufacturer: _____

Model: _____

Damage to Other Aircraft

☐ Destroyed

☐ Minor

☐ Substantial

☐ None

Registered Owner of Other Aircraft

Name: _____

City: _____

State: _____ ZIP: _____

Country: _____

Pilot of Other Aircraft

Name: _____

City: _____

State: _____ ZIP: _____

Country: _____

ADDITIONAL INFORMATION (Please type or print in ink)

Use this space if additional space is needed for any answers.

See attached NARRATIVE OF FLIGHT Attached from Page 9

I HEREBY CERTIFY THAT THE ABOVE INFORMATION IS COMPLETE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Date of this Report

05/18/2020

mm/dd/yyyy

Name of Pilot/Operator: George William Schandel

Signature: _____

-- or --

☐ Check here to electronically sign this document

If a Person Other than Pilot/Operator is Filing Report

Name: _____

Title: _____

Signature: _____

-- or --

☐ Check here to electronically sign this document**FOR NTSB USE ONLY**NTSB Accident/Incident No.
WPR20LA144Reviewed by NTSB Regional Office
WPR - Federal Way, WAName of Investigator
S. SteinDate Report Received
May 18, 2020

Narrative History of Flight (Insert for Page 9 NTSB form 6120.1) P. 1

The circumstances that led to the loss of Mooney N201HH on May 13th began with its prior flight on April 14th when I noticed an oil leak from the propeller hub-to-blade seal on one of the two blades. The last prop overhaul was completed on April 16th 2002 when the airframe had 3815 hours total time. The prop was due for another overhaul now with 973 hours on it.

I went online to four prop shops in Arizona and California for quotes, but only received a response from two companies. I selected Santa Monica Propeller (SMP) as they promised a two week repair turnaround time. SMP quoted \$3200 plus parts, and the other local Phoenix bidder quoted \$5500 to \$6000, also with a two week turn. SMP agreed to drive from California to DVT to my hanger to pick up my prop when removed by my A&P, Bert Lewis... IA, who is also a pilot and owns two Twin Comanches...and recently retired from Alaska Airlines maintenance.

When SMP arrived to pick up the prop on April 22nd, their customer service rep, "Stacy" who accompanied the driver, asked: "Where is your prop governor?" She explained to me that they also needed the governor to properly sync the prop on the bench after completion of the overhaul. She did not give me any price quote for the governor, so I naively assumed that this was included in the prop overhaul price! So, I told her I would have Bert remove the governor and UPS it to her later that week. I later learned that propellers are removed and replaced for overhaul routinely without also sending the governors in for overhaul. So, I was hoodwinked into unknowingly padding Stacy's sales book. In retrospect, my decision to UPS it to Stacy not only resulted in an unexpected additional bill from SMP for \$1200...but I believe was primarily contributory to the loss of my airplane and could potentially have been responsible for the loss of life of both Bert and me as I will relate later.

SMP returned the overhauled prop and governor back to my hanger on May 5th, and Bert worked to complete the reinstallations with me as a helper. We did an initial ground run up with satisfactory leak checks.

However, multiple ground run ups and prop governor adjustments failed to achieve the 2700 RPM take off spec for the engine. We did see up to 2600 RPMs briefly. And hoped we would see 2700 on a normal takeoff roll which Bert agreed to accompany me on a flight maintenance check set for the following week of 11 May.

P.2

On Tuesday, May 12th, Bert and I taxied out and were cleared for takeoff on RW 7 L just after 8:00 AM. However, we didn't even see the brief 2600 RPM that we saw on the prior ground check, and aborted the takeoff after seeing only about 2300 or 2400 RPM. We exited at turnoff A-8 and the Ground Controller asked us the reason for the abort. I responded that we had to go back to adjust the prop governor. We returned to my hanger for another un-cowling, more adjustment and ground checks, and scheduled another flight check for Wednesday morning that resulted in the accident.

Wednesday Bert and I took off on RW 25 R for our maintenance check at 8:23 AM according to the Time Data from Flightaware. We did see 2600 RPM briefly on the roll so we continued the takeoff and climbed out to the NE toward the Sky Ranch Airport with the full power RPMs stable at about 2580 as I recall. We continued our climb to about 6000 feet altitude and then reduced to a cruise power setting of 2500 RPM and full throttle MP of 25 inches. Our cruise power setting seemed stable for several minutes and we decided to return to DVT to continue to troubleshoot why we failed to achieve 2700 RPMs on takeoff. Then, all of a sudden, the engine went into an uncontrolled over speed that I saw briefly to 2850 RPM before I immediately reduced MP to about 15 inches to reduce the over speed while calling the DVT Tower to declare an Emergency. The DVT Tower time stamp on that call was 08:37 Local. We then headed straight for the airport. Bert in the right seat attempted reducing and advancing the cockpit prop control quadrant lever that initially was partially effective, but quickly had no further effect on engine RPM... The engine was erratic but still making thrust and we never thought that we were not going to make the runway... Just a surging engine RPM issue that we were controlling with throttle management.

We descended in a fairly normal approach to RW 25 R staying high, and were at pattern altitude of 2500 feet over Cave Creek Road about two and a half miles from the Airport. Then suddenly, with less than 200 hours on a Zero Time Factory Reman engine, we experienced an immediate, catastrophic, total engine failure...I told the tower we had lost all engine thrust at the tower time stamp of 08:40. (We learned later that it was caused by a case crack at top the #4 cylinder valve lifter push rod!). It was then we knew we were not going to make the airport and kept the gear and flaps up to minimize drag. The focus was on continuing to fly the airplane to find the softest place in the desert to put the airplane in its landing configuration at its minimum stall airspeed. P.3

I was really lucky to have another pilot in the right seat helping me to find a place to land, and Bert immediately told me he would have the cockpit door unlatched and open for egress. We headed toward an area left of the foothills that looked like it had some barren ground with lesser desert vegetation. I lowered the landing gear just before we hit to help slow the airplane as much as possible. With both hands holding the elevator at max aft, and the stall warning sounding...we clipped some bushes and desert shrubs prior to the first of two hard bounces before finally scraping across a rough ridgeline that tore off the landing gear but helped to slow us some more before a really abrupt stop into a shallow gully...Fortunately our inertia reel shoulder harnesses worked and kept us from flopping forward into the instrument panel. I initially smelled fuel as I turned off the electrical, and the ELT whooping...so we rolled out of the cockpit worried about a possible fire. But we were both grateful for surviving the landing in such rugged and uneven desert terrain! The sudden stop caused the sunglasses on both Bert and me to fly off our ears...We later found both pairs in the foot tunnel next to the rudder pedals on each side...ADSB showed our "Arrival (KDVT) at 08:41:45...Probably less than two minutes from our report to the DVT tower of total catastrophic engine failure!

I called the tower on my cell phone and told them we were down safe, and they said they saw the dust cloud when we hit! Police, fire and EMTs got there hiking through the brush in 15 or 20 minutes with the fire truck parked about 500 yards back off of Seventh Street next to the fence.

We were very, very lucky...and thankful...