

NATIONAL TRANSPORTATION SAFETY BOARD • PILOT/OPERATOR AIRCRAFT ACCIDENT/INCIDENT REPORT Use this form (Form 6120.1) to report civil and public aircraft accidents and incidents**BASIC INFORMATION****Accident/Incident Location**Nearest City/Place: Front Royal State: VAZIP: 22630 Country: USALatitude: 38-55-03.0440N Longitude: 078-15-12.1440W

(Enter in decimal degrees or degrees:minutes:seconds)

Accident/Incident Date/TimeDate: 10/06/2024 Local Time: 14:50
mm/dd/yyyy HH:MMTime Zone: ESTCollision with Other Aircraft: ☐ Midair ☐ On-ground ☒ None**AIRCRAFT INFORMATION**Registration Number: N314KSManufacturer: Alexander SchleicherModel: ASK-21Serial Number: 21752Year of Manufacture: 2,002Amateur-Built: ☐ Yes ☒ No If Yes: ☐ Original Design ☐ Kit/PlansMake: ASK-21

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

Maximum Gross Weight: 1,320 lbs.Weight at Time of Accident/Incident: 955 lbs.Number of Seats: 2 Flight Crew Seats: 2Cabin Crew Seats: 0 Passenger Seats: 1Number of Engines: 0**Category of Aircraft**
(Select one)

- ☐
- 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

Special

- ☐
- Restricted
-
- ☐
- Limited
-
- ☐
- Provisional
-
- ☐
- Special Flight
-
- ☐
- Experimental
-
- ☐
- Special Light-Sport
-
- ☐
- Experimental Light-Sport

- ☐
- Certificate of Authorization or Waiver (COA)
-
- ☐
- None
- ☐
- Unknown

Landing Gear

(Check all that apply)

- ☐
- Retractable
- ☐
- High Skid
-
- ☐
- Tricycle
- ☐
- Skid
-
- ☒
- Tailwheel
- ☐
- Ski/Wheel
-
- ☐
- Emergency Float
- ☐
- Hull
-
- ☐
- Float
- ☐
- Ski
-
- ☐
- Amphibian
-
- ☐
- 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	Engine 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								
Eng. 2								
Eng. 3								
Eng. 4								

Last Inspection Type

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

Date of Last Inspection: 07/12/2024
mm/dd/yyyyAirframe Total Time: 5,291.7 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: _____

Additional Equipment

- ☒
- ADS-B
-
- ☐
- Airframe Parachute
-
- ☐
- Angle of Attack Indicator
-
- ☐
- Autopilot
-
- ☐
- Autopilot/FMS, Model: _____
-
- ☐
- Coupled Flight Director
-
- ☐
- Data Recorder
-
- ☐
- Device Stall Warning System
-
- ☐
- Electronic Flight Bag or Handheld Device
-
- ☐
- Electronic Multifunction Display
-
- ☐
- Electronic Primary Flight Display
-
- ☐
- Flight Management System

- ☐
- Handheld GPS
-
- ☐
- Heads Up Display
-
- ☐
- Night Vision Goggles
-
- ☐
- Onboard Weather
-
- ☐
- Primary Flight Display
-
- ☐
- SAS, Number of Axes: _____ Model: _____
-
- ☐
- Satellite Tracking Device
-
- ☐
- Stall Warning System
-
- ☐
- Video Recording Device
-
- ☐
- Wire Strike Detection
-
- ☐
- Wire Strike Protection
-
- ☐
- Other, Specify: _____

ELT Installed: ☐ Yes ☒ No If Yes:

ELT Manufacturer: _____

Model or Part No.: _____

TSO No.: ☐ C91 (121.5 MHz) ☐ C91a (121.5 MHz)
☐ C126 (406 MHz)Was ELT still mounted in aircraft? ☐ Yes ☐ NoWas ELT still connected to antenna? ☐ Yes ☐ NoDid ELT activate? ☐ Yes ☐ NoIf activated: Did ELT aid in locating aircraft? ☐ Yes ☐ NoIf not activated: Indicate Reason: ☐ Impact Damage☐ Fire Damage ☐ Battery Expired/Damaged ☐ Unknown**Propeller 1** ☐ Fixed Pitch
☐ Controllable Pitch
☐ Ground Adjustable

Manufacturer: _____

Model: _____

Propeller 2 ☐ Fixed Pitch
☐ Controllable Pitch
☐ Ground Adjustable

Manufacturer: _____

Model: _____

OWNER/OPERATOR INFORMATION**Registered Aircraft Owner**Name: Skyline Soaring Club Inc.**Fractional Ownership Aircraft:**☐ Yes☒ NoCity: Front RoyalState: VAZIP: 22630 Country: USA**Operator of Aircraft**☒ *The Operator is also the Registered Owner*☒ *Same address as Registered Owner*

Name: _____

Doing Business As: _____

City: _____ State: _____

Air Carrier/Operator Designator (4-character code): _____

ZIP: _____ 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 450
- ☐ 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
- ☐ 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 ☐ Unknown

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: Front Royal-Warren County AirportDistance From Airport Center: 0.30 sm.Airport Identifier: KFRR

Direction From Airport: _____ degrees true

Proximity to Airport: ☐ Off Airport/Airstrip ☒ On Airport/Airstrip ☐ N/AAirport Elevation: 704.00 ft. MSL**Runway Information**Runway ID: 28 Length: 3,008 ft. Width: 75 ft.**Runway/Landing Surface** *(Check all that apply)*

- ☒ Asphalt ☐ Grass/Turf ☐ Ice ☐ Snow
- ☐ Concrete ☐ Gravel ☐ Macadam ☐ Water
- ☐ Dirt ☐ Helideck ☐ Metal/Wood ☐ Unknown
- ☐ Elevated Heliport ☐ Helistop ☐ Off-site landing area

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 ☐ 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 ☐ Unknown
- ☐ VOR/DME ☐ Localizer Only ☐ Visual
- ☐ TACAN ☐ LOC-back course ☐ Contact
- ☐ RNAV ☐ Circling

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**"Flight Crewmember 1" Responsibilities at the Time of Accident/Incident**

☐ Captain ☐ First Officer ☒ Pilot ☐ Co-Pilot ☐ Student Pilot ☐ Flight Instructor ☐ Check Pilot ☐ Flight Engineer ☐ Other Flight Crew

"Flight Crewmember 1" was pilot flying ☒ Yes ☐ No

"Flight Crewmember 1" Identification

First Name: Mark

City of Residence: Arlington

Middle Initial: S

State: VA ZIP: 22213

Last Name: Moran

Country: USA

Age at time of Accident/Incident: 60

Date of Birth: (mm/dd/yyyy)

Certificate Number:

Degree of Injury

☐ None ☐ Serious
☐ Unknown ☐ Fatal
☒ Minor

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

Supplemental Restraint, specify:

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 ☐ Sport
☐ Student ☐ 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

Glider pilots do not need to carry a medical certificate [61.3(c)(2)(iii)]

Medical Certificate Special Limitations**Personal Flight Equipment** (Check all that apply)

☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ Personal locator beacon(s) (PLB) ☐ Fire resistant gloves
☐ Helmet visor ☐ Night vision goggles ☐ Personal flotation ☒ Other: iPhone 12 running Naviter's Navigator app

Date of Last Flight Review or Equivalent, Including FAR 121/135 Checks:

05/28/2023
mm/dd/yyyy

Flight Review Aircraft

Make: Alexander Schleicher Glider

Model: ASK-21

Airplane Rating(s)
(Check all that apply)

☐ 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 Multiengine ☐ Helicopter
☐ Gyroplane ☐ Glider
☐ Powered lift ☐ Sport

Type Ratings and Applicable Logbook Endorsements

Aero-tow [61.31(j)]

Student Endorsements (Include dates)

Flight Time (Enter hours for each box)	All Aircraft	This Make & Model	Airplane Single Engine	Airplane Multiengine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Multi-engine Rotorcraft	Tail-wheel
						Actual	Simulated					
Total Time	101	80							100			
Pilot in Command (PIC)	33	11							33			
Time as Instructor												
This Make/Model												
Last 90 Days	5	2							5			
Last 30 Days	2	2							2			
Last 24 Hours	0	0							0			

"FLIGHT CREWMEMBER 2" INFORMATION**"Flight Crewmember 2" Responsibilities at the Time of Accident/Incident**

☐ Captain ☐ First Officer ☐ 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 ☐ Serious
☐ Unknown ☐ Fatal
☐ Minor

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 ☐ Sport
☐ Student ☐ Flight Engineer

Supplemental Restraint, specify: _____

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 Limitations****Personal Flight Equipment** (Check all that apply)

☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ Personal Locator Beacon(s) (PLB) ☐ Fire resistant gloves
☐ Helmet visor ☐ Night vision goggles ☐ Personal flotation ☐ Other: _____

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)

☐ 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 Multiengine ☐ Helicopter
☐ Gyroplane ☐ Glider
☐ Powered lift ☐ Sport

Type Ratings and Applicable Logbook Endorsements**Student Endorsements** (Include dates)

Flight Time (Enter hours for each box)	All Aircraft	This Make & Model	Airplane Single Engine	Airplane Multiengine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Multi-engine Rotorcraft	Tail-wheel
						Actual	Simulated					
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.)

Additional Crewmember Information		Seat Occupied	Injury
First Name: _____	City of Residence: _____	☐ Left ☐ Rear ☐ Center ☐ Single ☐ Right ☐ Unknown ☐ Front	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown
Middle Initial: _____	State: _____ Zip: _____		
Last Name: _____	Country: _____		
Personal Flight Equipment (Check all that apply) ☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ Personal locator beacon(s) (PLB) ☐ Fire resistant gloves ☐ Helmet visor ☐ Night vision goggles ☐ Personal flotation ☐ Other: _____			
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.	Supplemental Restraint, specify: _____	

Additional Crewmember Information		Seat Occupied	Injury
First Name: _____	City of Residence: _____	☐ Left ☐ Rear ☐ Center ☐ Single ☐ Right ☐ Unknown ☐ Front	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown
Middle Initial: _____	State: _____ Zip: _____		
Last Name: _____	Country: _____		
Personal Flight Equipment (Check all that apply) ☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ Personal Locator Beacon(s) (PLB) ☐ Fire resistant gloves ☐ Helmet visor ☐ Night vision goggles ☐ Personal flotation ☐ Other: _____			
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.	Supplemental Restraint, specify: _____	

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

Number of Passengers _____	Seat	Injury	Restraint Type	Inflatable Restraints	Age
Passenger Information First Name: _____ City: _____ Middle Initial: _____ State: _____ Zip: _____ Last name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other Personal Flight Equipment (Check all that apply) ☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ PLB ☐ Fire resistant gloves ☐ Night vision goggles ☐ Helmet visor ☐ Personal flotation ☐ 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 Supplemental Restraint, specify: _____	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If under 5 years, ☐ Child Restraint ☐ Lap-Held ☐ Unknown

First Name: _____ City: _____ Middle Initial: _____ State: _____ Zip: _____ Last name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other Personal Flight Equipment (Check all that apply) ☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ PLB ☐ Fire resistant gloves ☐ Night vision goggles ☐ Helmet visor ☐ Personal flotation ☐ Other: _____	☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Supplemental Restraint, specify: _____	Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If under 5 years, ☐ Child Restraint ☐ Lap-Held ☐ Unknown
First Name: _____ City: _____ Middle Initial: _____ State: _____ Zip: _____ Last name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other Personal Flight Equipment (Check all that apply) ☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ PLB ☐ Fire resistant gloves ☐ Night vision goggles ☐ Helmet visor ☐ Personal flotation ☐ Other: _____	☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Supplemental Restraint, specify: _____	Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If under 5 years, ☐ Child Restraint ☐ Lap-Held ☐ Unknown
First Name: _____ City: _____ Middle Initial: _____ State: _____ Zip: _____ Last name: _____ Country: _____ ☐ Crew ☐ Passenger ☐ Other Personal Flight Equipment (Check all that apply) ☐ Fire resistant flight suit ☐ Helmet ☐ Laser protective visor/glasses ☐ PLB ☐ Fire resistant gloves ☐ Night vision goggles ☐ Helmet visor ☐ Personal flotation ☐ Other: _____	☐ Left ☐ Center ☐ Right ☐ Unknown Row: _____	☐ None ☐ Minor ☐ Serious ☐ Fatal ☐ Unknown	Available ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown Supplemental Restraint, specify: _____	Used ☐ None ☐ Lap Only ☐ 3-point ☐ 4-point ☐ 5-point ☐ Unknown	☐ Not Installed ☐ Installed ☐ Not Deployed ☐ Deployed ☐ Unknown	☐ Under 5 years If under 5 years, ☐ Child Restraint ☐ Lap-Held ☐ Unknown

FLIGHT ITINERARY INFORMATION

Last Departure Point	Time of Departure	Flight Information	Destination	Type Flight Plan Filed
Airport ID: <u>KFRR</u> City: <u>Front Royal</u> State: <u>VA</u> Country: <u>USA</u>	Time: <u>14:50</u> HH:MM Time Zone: <u>EDT</u>	Flight Number: _____ Operating as Flight _____	Airport ID: <u>KFRR</u> City: <u>Front Royal</u> State: <u>VA</u> Country: <u>USA</u>	☒ None ☐ Company VFR ☐ Military VFR ☐ VFR ☐ VFR/IFR ☐ IFR ☐ Unknown Activated? ☐ Yes ☐ No ☐ Unknown

Type of ATC Clearance/Service <i>(Check all that apply)</i> ☐ Certificate of Authorization ☐ Special VFR ☐ Special IFR ☐ VFR Flight Following ☐ Cruise ☐ VFR ☐ IFR ☐ VFR On Top ☐ Traffic Advisory ☐ Unknown / NA ☒ None					
Airspace where the accident/incident occurred <i>(Check all that apply)</i> ☐ 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 ☐ FAR 93 ☒ Class E ☐ Restricted Area Altitude of In-Flight Occurrence: _____ ft. MSL					
WEATHER INFORMATION AT THE ACCIDENT/INCIDENT SITE					
Source of Pilot Weather Information <i>(Check all that apply)</i> ☒ National Weather Service ☐ Flight Service Station ☐ TV/Radio ☒ Automated Report ☐ Electronic Flight Bag-Application: ☐ On-Board Weather			Weather Observation Facility Facility ID: _____ Observation Time: _____ Time Zone: _____ Distance from Accident Site: _____ nm Direction from Accident Site: _____ degrees true		
Basic Conditions ☒ VMC ☐ IMC ☐ Unknown		Lowest Cloud Condition Height <u>n/a</u> ft. AGL		Light Condition ☐ Dawn ☐ Dusk ☐ Dark Night ☐ Unknown ☒ Day ☐ Night ☐ Bright Night	
Sky/Lowest Cloud Condition ☒ Clear ☐ Thin Broken ☐ Few ☐ Thin Overcast ☐ Partial ☐ Unknown ☐ Obscuration ☐ Scattered		Ceiling ☒ None (Clear) ☐ Broken ☐ Overcast ☐ Obscured ☐ Indefinite ☐ Unknown		Ceiling Height _____ ft. AGL	
Altimeter Setting: <u>30.01</u> (Hg), or _____ (mb)		Wind Direction ☐ Variable or ☒ Direction: <u>210.00</u> degrees true		Wind Speed ☐ Calm ☒ Light and Variable or Speed: <u>3.0</u> kts	
Wind Gusts ☐ Not Gusting or Speed: <u>3.0</u> kts		Visibility _____ miles RVR: _____ feet RVV: _____ miles Density Altitude: _____ ft.			
Type of Precipitation <i>(Check all that apply)</i> ☒ 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 <i>(Check all that apply)</i> ☒ 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		Intensity of Precipitation ☐ Light ☐ Moderate ☐ Heavy ☐ N/A ☐ Unknown		Icing Actual Amount ☒ None ☐ Trace ☐ Light ☐ Moderate ☐ Severe ☐ Unknown Type ☐ N/A ☐ Rime ☐ Clear ☐ Mixed ☐ Unknown	
Turbulence <i>(Check all that apply)</i> Type ☐ None ☐ Clean 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: I can provide a copy of the PDF of my weather briefing (from https://www.1800wxbrief.com/). When I got the briefing (at 0716 local/1116 UTC), there were AIRMETS for IFR and for Mountain Obscuration, but those had cleared up early in the morning before I flew. By the time that I flew the glider (1450 local), it was a clear sunny day.					

DAMAGE TO AIRCRAFT AND OTHER PROPERTY

Aircraft Damage		Aircraft Fire		Aircraft Explosion	
☐ None	☒ Substantial	☒ None	☐ Both Ground and In-Flight	☒ None	☐ Both Ground and In-Flight
☐ Minor	☐ Destroyed	☐ In-Flight	☐ Fire at Unknown Time	☐ In-Flight	☐ Fire at Unknown Time
	☐ Unknown	☐ On-Ground	☐ Unknown	☐ On-Ground	☐ Unknown

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

The ASK-21 has three tires: front, main, and tail. The tire on the tail wheel popped during the landing pilot-induced oscillation (PIO), but the other two tires did not pop. The fuselage (which I think is made of glass-reinforced plastic) had cracking and deformation on the lower fuselage, below the front cockpit, where the lead, center-of-gravity ballast "disks" were screwed to the glider cockpit floor.

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.

Before my flight at 1450 local, I prepared the rear cockpit of the ASK-21 (N341KS) for solo flight, since the rear cockpit would be empty (e.g., secured the seatbelt, made sure there were no loose items, locked the rear canopy, closed the rear window). I was sitting in the front cockpit and it had the necessary center-of-gravity ballast secured to the cockpit floor (10 lead "disks" - 5 on each side of the floor, secured with the ballast screw/bolt, which brings the minimum pilot weight to 126 lbs and I weigh 135 lbs).

The tow pilot was flying the Pawnee (N424BY). During my pre-launch coordination radio call with the tow pilot, I requested a "pattern tow," i.e., "1500 ft AGL NW of the airport on a long 45" since I wanted to focus on the landing. The takeoff from Runway 28 and the aerotow were both nominal. The tow plane took me to a location near a long 45 for a right pattern (which is standard for gliders at KFRR) and, after checking for traffic, I pulled the release knob at 2200 ft MSL. I made my radio call ("Front Royal Traffic, Glider 1KS, entering right 45, Runway 28, Front Royal, glider") and then I did my FUSTALL pre-landing checklist. I then turned onto my right downwind leg for Runway 28. Again, everything seemed to be nominal. When I got to a 45-degree look-back angle, I made my radio call for base and turned base. I thought that the glider height was about normal or a bit high, so I opened the airbrakes halfway. I made my radio call for final and turned final.

The final appeared quite normal to me, but as I got closer to the airport, it looked like I would need to close the airbrakes to stay on a glide path that would intercept my aim point (second stripe after the numbers). I kept the airbrakes mostly closed for the rest of the final approach because, given the weather conditions at that moment, that seemed like what was needed to get to my aim point. In fact, I did not make my aim point, but I landed, with the airbrakes mostly closed, just past the numbers ("28"). When I wanted to be in the holdoff phase, the glider touched down before I wanted (maybe due to a wind gust). Landing with the airbrakes mostly closed makes it harder to dissipate energy and puts you in a situation where a PIO is more likely to occur. In retrospect, I wonder if there was sink on final or a wind gradient.

For this flight/landing, the glider landed on the main gear (I believe) and it bounced (probably due to the shut or mostly shut airbrakes). Two weeks ago, when landing the ASK-21, the glider bounced once, but I kept the glider at the landing-pitch attitude, and I did NOT have a PIO. However, this time, although I tried to keep the glider at the landing pitch attitude, the glider got into a PIO. As noted below, I have been working with two different CFI-Gs at the club to improve my landings. One is not supposed to move the stick back and forth, because that will make a PIO worse, but, in this case, the bounce was such that I think the momentum resulted in my arms moving, which in turn, moved the stick in ways that I did not want. So, although I knew that I should not move the stick back and forth, I was not able to keep the glider in the landing-pitch attitude. I think I bounced three times, but things happen very quickly in a PIO, so I am not sure.

A few days later, I realized that I had a bruise on the lower part of my right elbow. Other than that, I had no injuries. In my email to the NTSB, I provided several pictures of the damage to the glider.

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

On 6/8/24, I was landing in a different glider (PW-5, which is single seat) after a 1-hour-47-minute flight and I had a landing PIO. This was my 298th glider flight, my 19th flight in the PW-5, and my first ever PIO. The PW-5 is arguably harder to land than the ASK-21. There was no damage to the glider, but I immediately sought and received instructor ground training on PIOs (6/8/24). After that, I continued to do PIC flights in both types of gliders (ASK-21 and PW-5). Unfortunately, on 9/14/24, I had a landing PIO in one of the two club ASK-21s (N341KS). This time, the rear tire of the ASK-21 popped. We put that glider away for repairs and, on the same day, I flew two instructional flights with a CFI-G in the other club ASK-21 and my landings were fine for those two flights. Because I had had two PIOs now (and none previously), I knew that I should continue to work with CFI-Gs to improve my landings. For example, on 9/21/24, I flew two instructional flights with a CFI-G then I did a third flight (solo PIC) to put my remedial training into use. My landings on all three of those flights were fine, but I was fast on final on one of the flights, so I knew that I wanted to continue to work on maintaining a consistent pattern speed (generally 55 knots, depending on winds).

On 7/14/24, after my first PIO in the PW-5 (on 6/8), I had noted to an instructor that I had planned to do two instructional flights that day in the ASK-21, but the CFI-G noted that if you are trying to improve your landing technique in a particular type of aircraft, such as the PW-5, it is generally better to stick with that aircraft, as opposed to switching aircraft types (e.g., from PW-5 to ASK-21). So, I decided on that day (7/14) to fly the PW-5 (which is single seat). My PW-5 flight lasted 1 hour and 18 minutes and I had a good landing on Runway 28 (normal R pattern). However, In retrospect, I wish after the first PIO (and certainly after the second PIO) that I had selected one CFI-G, flown only with that CFI-G, and not conducted any more solo PIC flights until that CFI-G had signed off that I was ready again for solo flights. I have

MECHANICAL MALFUNCTION/FAILURE (If more space is needed, continue on a 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.)

Total Time/ Cycles On Part

_____ Hours

_____ Cycles

Time Since This Part Inspected/Overhauled

_____ Hours

FUEL & SERVICES INFORMATION

Fuel on Board at Last Takeoff

(Convert from pounds, as necessary)

_____ Gallons

Fuel Type

☐ 100 Low Lead☐ Automotive☐ Jet A☐ Jet A-1☐ Unleaded AV☐ Other, specify _____

Other Services, if any, prior to departure:

EVACUATION OF AIRCRAFTWas an emergency evacuation of the aircraft performed? ☐ Yes ☒ No

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

After the landing PIO on 10/6/24, I exited the glider like I normally would (by unfastening my 5-point harness, opening the canopy, and getting out). Then, I pushed the glider off the runway onto the mid-field taxiway (like we normally do), and it was at that point that I realized that the rear tire had popped. I did not notice the fuselage damage until the glider was parked and I was removing the lead ballast.

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

Aircraft Registration Number

Manufacturer: _____

Damage to Other Aircraft:

☐ Destroyed☐ Minor☐ Substantial☐ None

Model: _____

Registered Owner of Other Aircraft

Pilot of Other Aircraft

Name: _____

Name: _____

City: _____

City: _____

State: _____ ZIP: _____

State: _____ ZIP: _____

Country: _____

Country: _____

ADDITIONAL INFORMATION (Additional space for answers to any question.)

On p. 1, for the field labeled "Weight at Time of Accident/Incident," this was how I calculated the value of 955 lbs: The ASK-21 empty weight is 792 lbs. Pilot (Mark Moran) weight was 135 lbs. The minimum pilot weight for the ASK-21 is 154 lbs. Pilots lighter than this must carry center-of-gravity ballast. I had 10 lead "disks" screwed into the front cockpit floor, which brings the minimum pilot weight to 126 lbs (according to p. 13 of the POH: Flight Manual, Schleicher ASK21 (Poppenhausen, Germany: Alexander Schleicher Segelflugzeugbau, 1983), <https://www.skylinesoaring.org/documents/flight-manuals>), which put me 9 lbs over ballast, or the equivalent of a 163-lbs pilot. So, the total weight would be 792 + 163 = 955 lbs.

On p. 1 of this form, I was unable to get "Date of the last annual inspection" and "Airframe total time." I hope to get that information by 10/20/24 from the glider logbook (N341KS). As of 7/22/22, the total airframe time was 4953.2 hours.

By signing this form, I am consenting to the public release of the information provided herein.

Date of this report:

10/15/2024

mm/dd/yyyy

Name of Pilot/Operator: Mark S. Moran

Signature: _____

-or- ☒ Check here to electronically sign this document

If a person other than Pilot/Operator is filing this report

Name: _____

Title: _____

Signature: _____

-or- ☐ Check here to electronically sign this document

FOR NTSB USE ONLY

NTSB Accident/Incident No.
ERA25LA009

Reviewed by NTSB AS Division
AS-ERA

Name of Investigator
L. Stratton

Date Report Received
10/15/2024

Lauren Stratton
Aviation Safety
Eastern Region

Date: 10/23/2024

Subject: ERA25LA009 6120.1
Operator/Owner Safety Recommendation Section

Contact: Mark Moran, Pilot

The following provides the complete text from the Pilot's 6120.1 Page 8 Operator/Owner Safety Recommendation Section that was cut off on the pdf view:

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On 7/14/24, after my first PIO in the PW-5 (on 6/8), I had noted to an instructor that I had planned to do two instructional flights that day in the ASK-21, but the CFI-G noted that if you are trying to improve your landing technique in a particular type of aircraft, such as the PW-5, it is generally better to stick with that aircraft, as opposed to

switching aircraft types (e.g., from PW-5 to ASK-21). So, I decided on that day (7/14) to fly the PW-5 (which is single seat). My PW-5 flight lasted 1 hour and 18 minutes and I had a good landing on Runway 28 (normal R pattern). However, In retrospect, I wish after the first PIO (and certainly after the second PIO) that I had selected one CFI-G, flown only with that CFI-G, and not conducted any more solo PIC flights until that CFI-G had signed off that I was ready again for solo flights. I have had a post-accident debrief with the club's safety officer and I mentioned this suggestion to him