



# Aviation Investigation Final Report

<b>Location:</b>	Pendleton, Oregon	<b>Accident Number:</b>	WPR24LA031
<b>Date &amp; Time:</b>	November 10, 2023, 13:00 Local	<b>Registration:</b>	N692PA
<b>Aircraft:</b>	AMAZON.COM SERVICES LLC MK27-2	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel exhaustion	<b>Injuries:</b>	N/A
<b>Flight Conducted Under:</b>	Part 91: General aviation - Flight test		

## Analysis

The operator of the unmanned aircraft system (UAS) reported that during a test flight, the UAS descended, delivered a package to the practice location, and began a vertical climb to return to the landing zone. During the vertical climb, the UAS registered a low voltage health alert and initiated an “urgent land maneuver.” During the maneuver, the UAS battery depleted to a point where it lost propulsive power, and impacted terrain, resulting in substantial damage to all 4 wings, and spar damage to the number 2, 3, and 4 wings.

Postaccident review of the circumstances surrounding the flight by the operator revealed that an insufficiently charged battery had been installed on the UAS.

The operator reported that there were no preaccident mechanical failures or malfunctions with the UAS that would have precluded normal operation.

## Probable Cause and Findings

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

The operator’s use of an insufficiently charged battery that resulted in a total loss of engine power and subsequent impact with terrain.

## Findings

### Personnel issues

Preflight inspection - Pilot

### Aircraft

Battery/charger - Inadequate inspection

## Factual Information

### History of Flight

Landing	Fuel exhaustion (Defining event)
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### Pilot Information

Certificate:	Private; Remote	Age:	42, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	None
Other Aircraft Rating(s):	None	Restraint Used:	None
Instrument Rating(s):	None	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	November 16, 2022
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	August 10, 2023
Flight Time:	(Estimated) 1506 hours (Total, all aircraft), 53 hours (Total, this make and model), 1506 hours (Pilot In Command, all aircraft)		

### Aircraft and Owner/Operator Information

Aircraft Make:	AMAZON.COM SERVICES LLC	Registration:	N692PA
Model/Series:	MK27-2	Aircraft Category:	Helicopter
Year of Manufacture:	2023	Amateur Built:	
Airworthiness Certificate:	Experimental (Special)	Serial Number:	17868SN000777
Landing Gear Type:	None	Seats:	0
Date/Type of Last Inspection:	November 10, 2023 Continuous airworthiness	Certified Max Gross Wt.:	87 lbs
Time Since Last Inspection:		Engines:	6
Airframe Total Time:	14.54 Hrs at time of accident	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	AMAZON.COM SERVICES LLC	Rated Power:	
Operator:	AMAZON.COM SERVICES LLC	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KPDT,1514 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	11:53 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	280°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.16 inches Hg	Temperature/Dew Point:	12°C / 2°C
Precipitation and Obscuration:			
Departure Point:	Pendleton, OR	Type of Flight Plan Filed:	None
Destination:	Pendleton, OR	Type of Clearance:	Unknown
Departure Time:		Type of Airspace:	Class D

## Airport Information

Airport:	EASTERN OREGON RGNL AT PENDLETON PDT	Runway Surface Type:	
Airport Elevation:	1494 ft msl	Runway Surface Condition:	Unknown
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

## Wreckage and Impact Information

Crew Injuries:	N/A	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	N/A	Latitude, Longitude:	45.695095,-118.84336(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Gutierrez, Eric
<b>Additional Participating Persons:</b>	Ian McGillivray; FAA; Portland, OR
<b>Original Publish Date:</b>	January 4, 2024
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=193376">https://data.nts.gov/Docket?ProjectID=193376</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).