NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

June 24, 2016

NTSB ON SITE EXAMINATION NOTES

WPR16FA130

This document contains 19 embedded photos.

A. ACCIDENT

Location:	Wikieup, AZ
Date:	June 23, 2016
Aircraft:	Robinson R66, Registration Number: N117TW, Serial #: 0042
NTSB IIC:	Howard Plagens

B. EXAMINATION PARTICIPANTS:

Howard Plagens
Senior Air Safety Investigator
National Transportation Safety Board
Federal Way, WA

Mark Pritchett
Aviation Safety Inspector
Federal Aviation Administration
Scottsdale FSDO
Scottsdale, AZ

Darren Henley
Aviation Safety Inspector
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Thom Webster
Air Safety Investigator
Robinson Helicopters, Inc.
Torrance, CA

Christopher Kennedy
Aviation Safety Inspector
Federal Aviation Administration
Scottsdale FSDO
Scottsdale, AZ

C. SUMMARY

Examination of the wreckage occurred on June 24, 2016.

D. DETAILS OF THE INVESTIGATION

1.0 Overall Site Examination

The helicopter came to rest in hilly desert terrain. The debris field was about 750 yards long and 150 yards wide. One of the first pieces identified was the outboard 5 feet of a main rotor blade afterbody that had separated from the leading edge spar. The left side of the helicopter was more fragmented than the right, and left side cabin pieces and instruments were distributed throughout the early part of the debris field. The tail boom was about midway into the debris field. The left side/nose cabin was in the same approximate part of the debris field with a straight separation line across one side. The cabin came to rest inverted about 600 yards into the debris field, and was destroyed by a postcrash fire. The engine remained attached to the cabin. The remaining

piece of main rotor blade was about the same distance into the debris field, but 85 yards left of the debris path centerline. The transmission, mast, and second main rotor blade separated as a unit, and were about 100 yards past the cabin area in the direction of the centerline of the debris field.

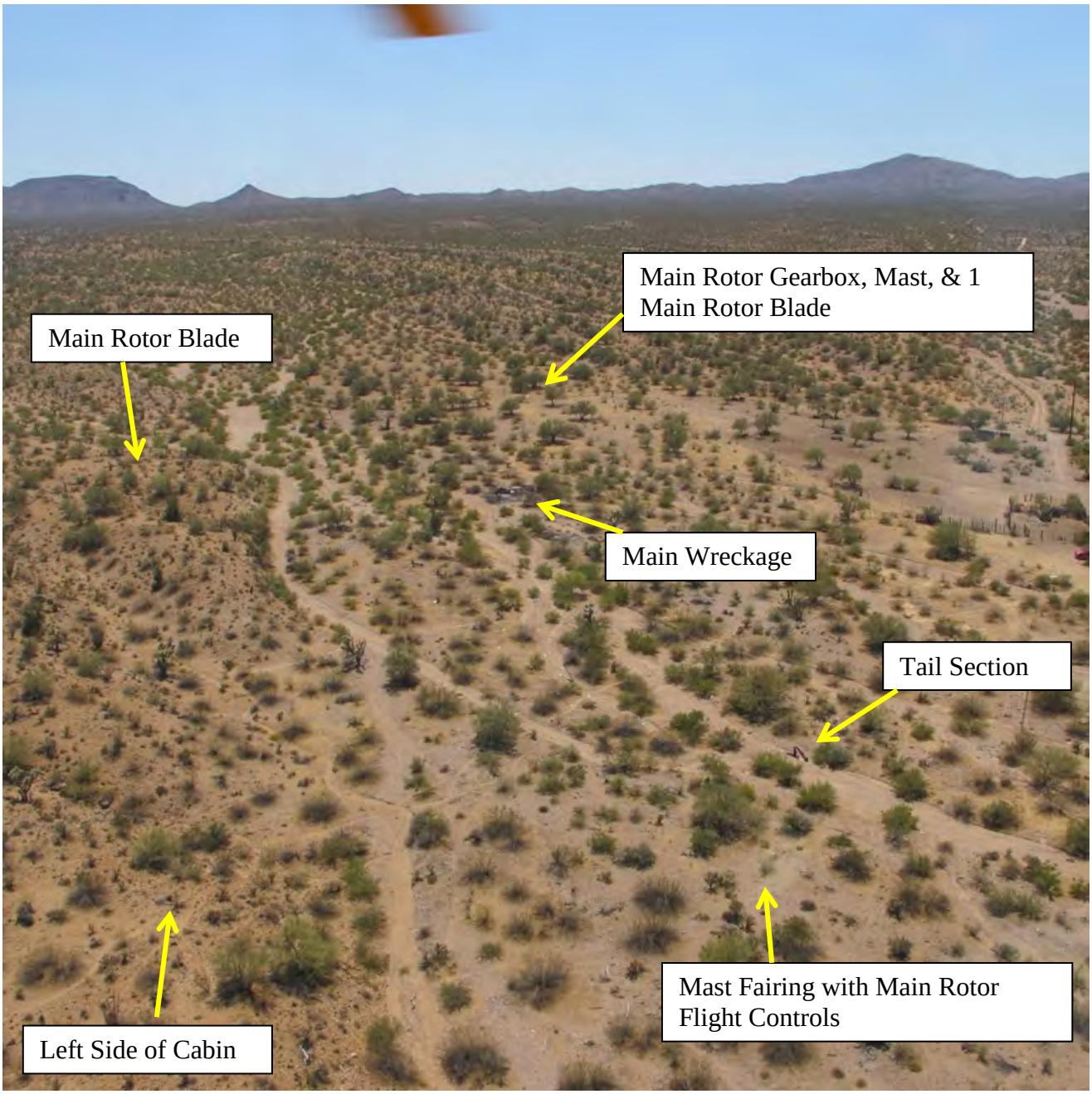

Photo 1 Robinson Aerial of Site Looking from Beginning of Debris Field

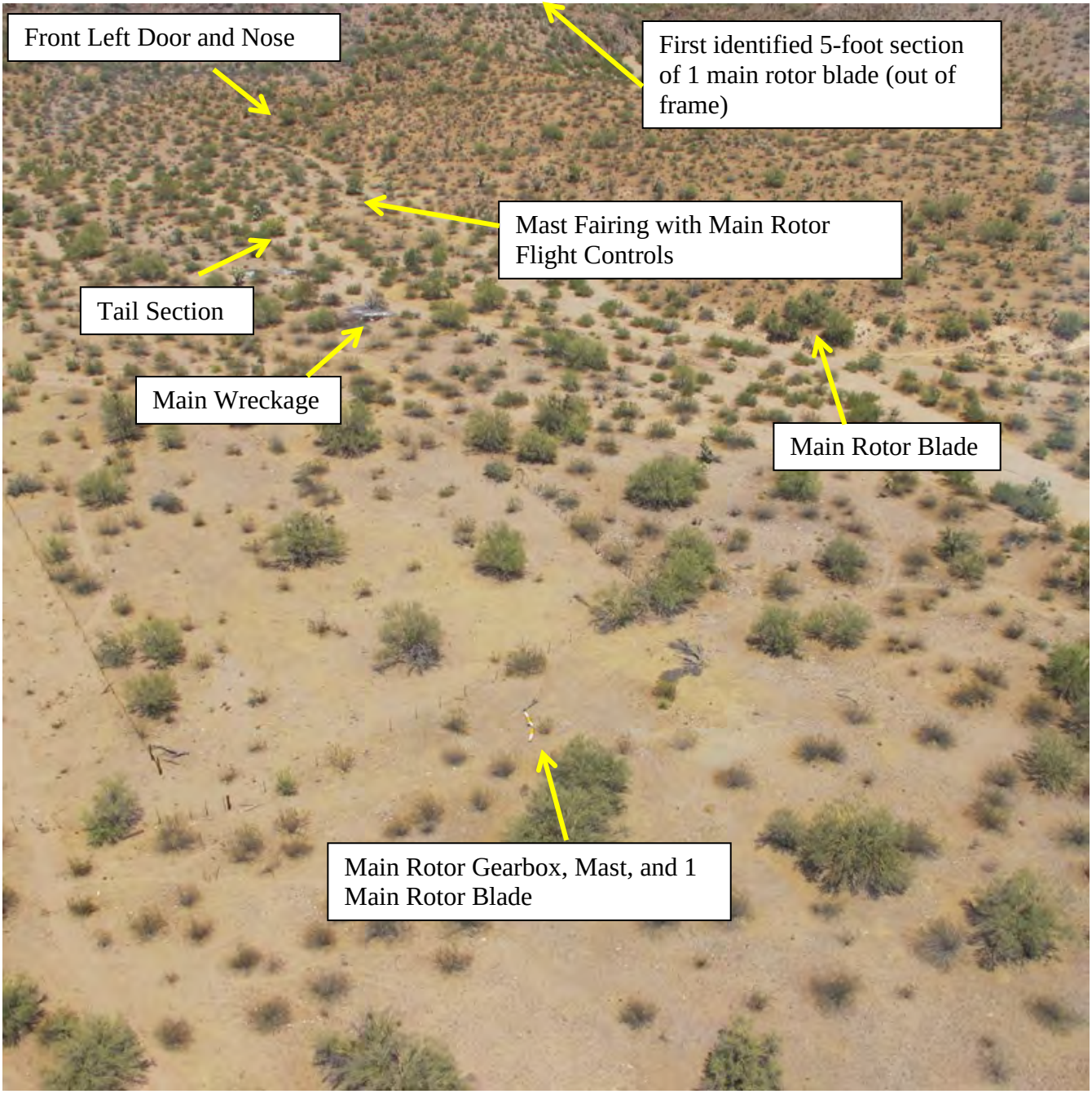

Photo 2 Robinson Aerial of Site Looking Back at Debris Field

Photo 3 FAA Photo Looking from First Identified Debris

Photo 4 FAA Photo First Identified Debris - Outboard Piece of Main Rotor Blade Afterbody

Photo 5 Robinson Photo Left Side of Cabin

Photo 6 FAA Photo of Tail Section

Photo 7 Robinson Photo of Mast Fairing with Main Rotor Flight Controls

One main rotor blade separated at the spindle. The blade spar was bowed forward in the direction of flight and slightly upward about mid span.

Photo 8 FAA Photo Separated Main Rotor Blade

Photo 9 Robinson Photo of Separated Main Rotor Blade Hub End

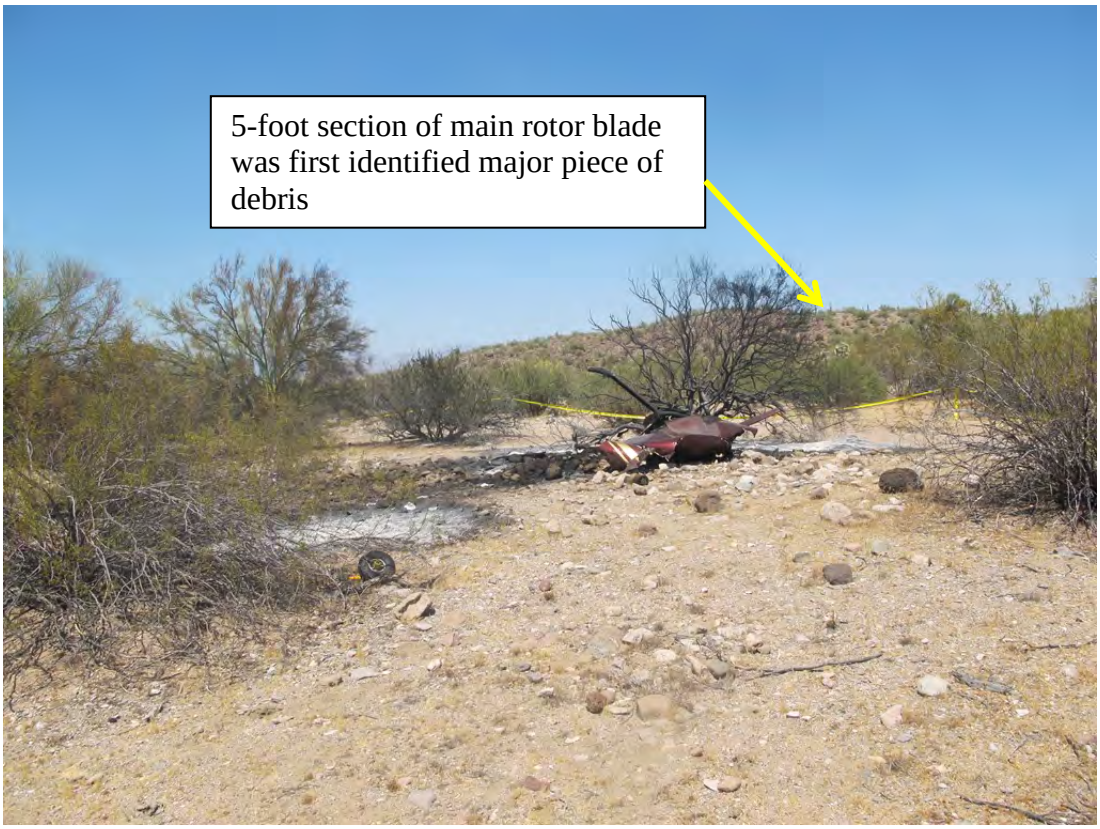

Photo 10 Main Wreckage Looking Back Opposite Direction of Flight

The furthest main piece of debris consisted of the main rotor gearbox, mast, and a main rotor blade. The main rotor blade was bent aft midspan. This piece was a feet past a ground scar that matched the shape of the piece. The main rotor driveshaft was bent approximately 15 degrees at the swashplate. The inboard section of the fractured spindle (w/droop tusk) was recovered near the hub.

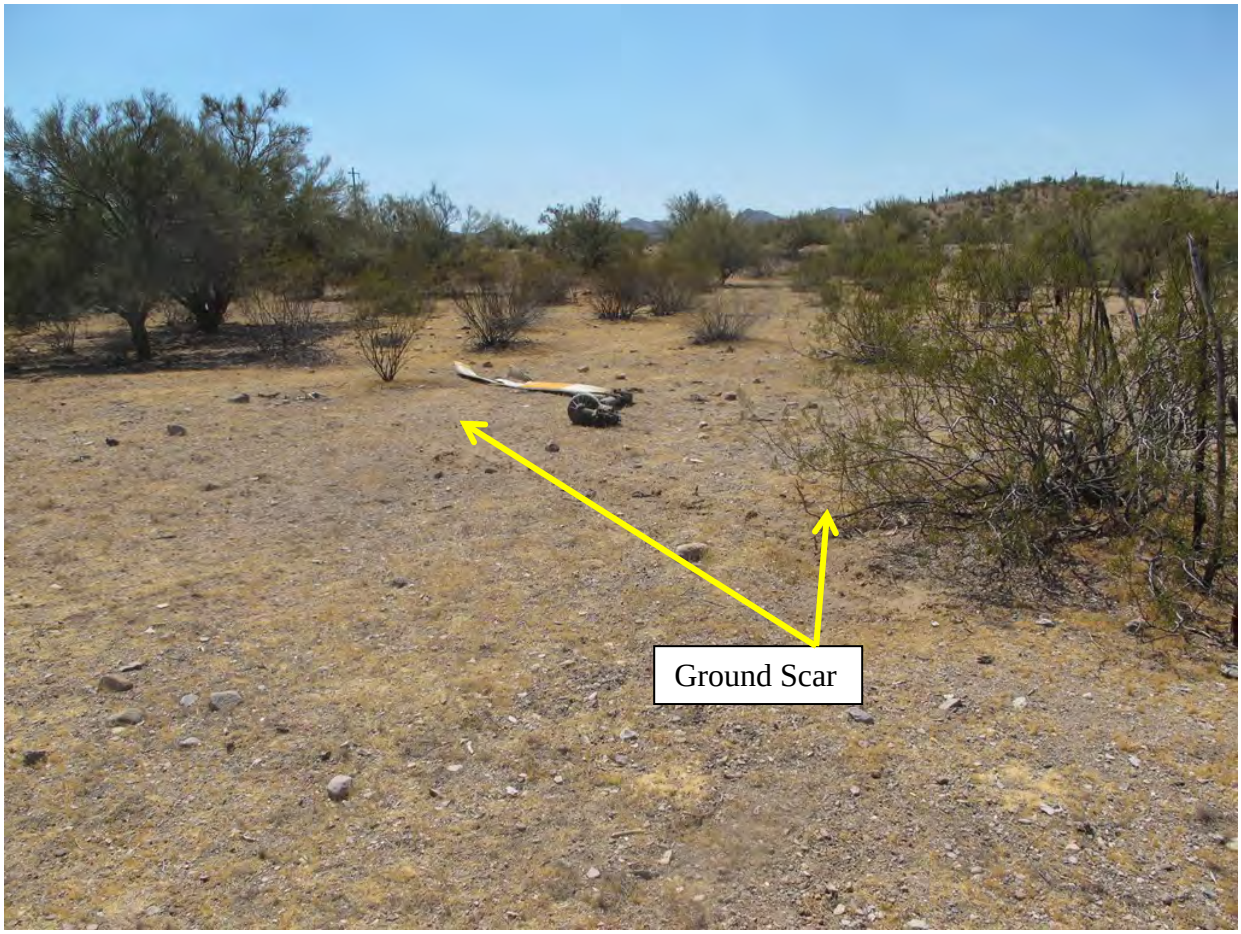

Photo 11 Main Rotor Gearbox, Mast, and Main Rotor Blade

Photo 12 Ground Scar

The main rotor driveshaft was bent approximately 15 degrees at the swashplate. The droop stop for the separated blade was damaged.

Photo 13 Bent Main Rotor Driveshaft

Photo 14 Main Rotor Gearbox, Mast, and Main Rotor Blade

Photo 15 Main Rotor Blade

2.0 Airframe On-Site Examination

The main wreckage consisted of the inverted cabin area and landing gear skids. The cabin area was consumed by fire. The landing gear aft cross tube was bent near the right elbow, and the tip was bent up.

Photo 16 View of Inverted Main Wreckage (Aft Looking Forward)

Photo 17 Front View of Inverted Main Wreckage

Photo 18 Landing Gear Cross Tube

The tail section was bent, and separated at the forward mount. There was no indication of contact from a main rotor blade.

No rotational damage was observed to the tail rotor blades.

Photo 19 Robinson Photo of Tail Rotor Blades

3.0 Engine On-Site Examination

The engine sustained some thermal damage. There was no catastrophic damage observed.