3/9/2011
J. Hobby

Waterman Peak Site Exam
N530RL, S/N 0602FF

Attendees:

John Hobby, MDHI
Ken Fenning, FAA
Randy Steffers, FAA

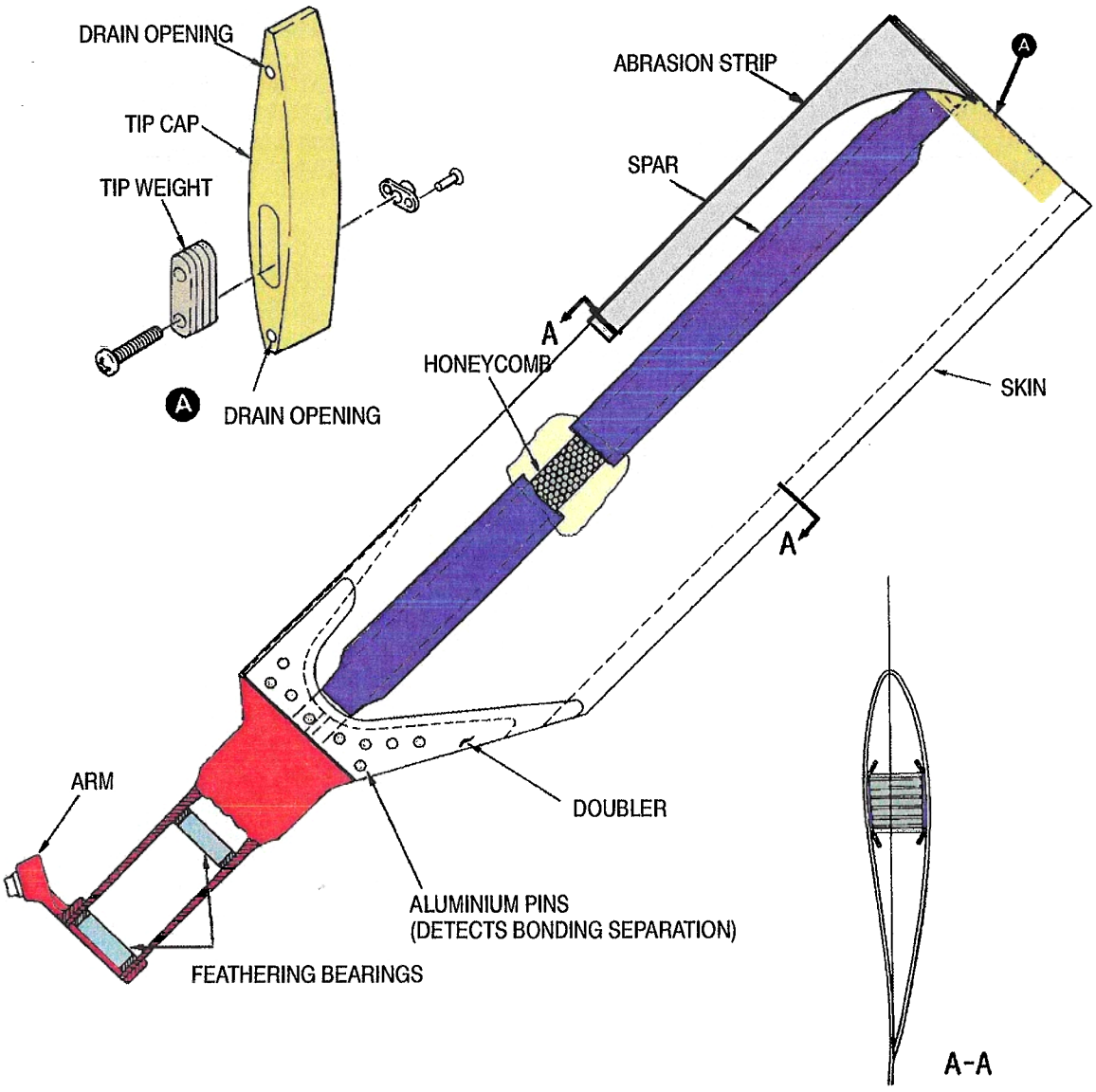
On Tuesday 3/8/2011 an accident site examination was performed by the above attendees. The purpose of the accident site exam was to look for any indications of a tail rotor strike in the landing area on the pinnacle. The right rear passengers witness statement indicated there may have been a tail rotor blade strike upon landing on the pinnacle. The right rear passenger had reported that the accident helicopter landed and a "bump" was felt. The passenger did not know what the "bump" was, but now thinks it was the tail rotor. After the bump, the passenger reported the pilot "absolutely" did not have control of the helicopter [1].

Both tail rotor blades were substantially damaged at the tip ends with 3 to 6 inches of the blades tips missing and rough abrasive scoring in the cord wise direction on the tail rotor blades. Two pieces of tail rotor blades skin were recovered by the Pinal County Sheriff's department during a secondary parts search after the helicopter wreckage was removed. The two tail rotor blades pieces found were reportedly located in the same canyon as the wreckage. During the wreckage exam at the recovery yard, the tailboom was found to have a torsion twist at approximately station 257 and damage to the stingers left side. This tail boom twist is consistent with an impact to the lower vertical while the helicopter is in a right hand rotation.

The accident site exam found pieces from the tail rotor blades on the pinnacle landing area in one general debris field. The pieces found were identified and numbered and the relative locations are shown on the attached map. The ground is rocky providing little evidence of ground scarring as verified by the limited rock scarring where known main rotor blade strikes occurred. A location on the ground or rocks where a tail rotor strike occurred was not determined. Pieces from the tail rotor blades are hi-lighted in yellow. A blue colored adhesive is used in the tail rotor blade bonded skin joints and red colored adhesive is used in the main rotor blade bonded skin joints (except for the tip weight). The red paint pieces are consistent with the paint stripes on the tail rotor blades. Since both the main and tail rotor utilize honeycomb, no determination of origin was made to these pieces. The parts recovered were retained by the FAA, Ken Fenning.

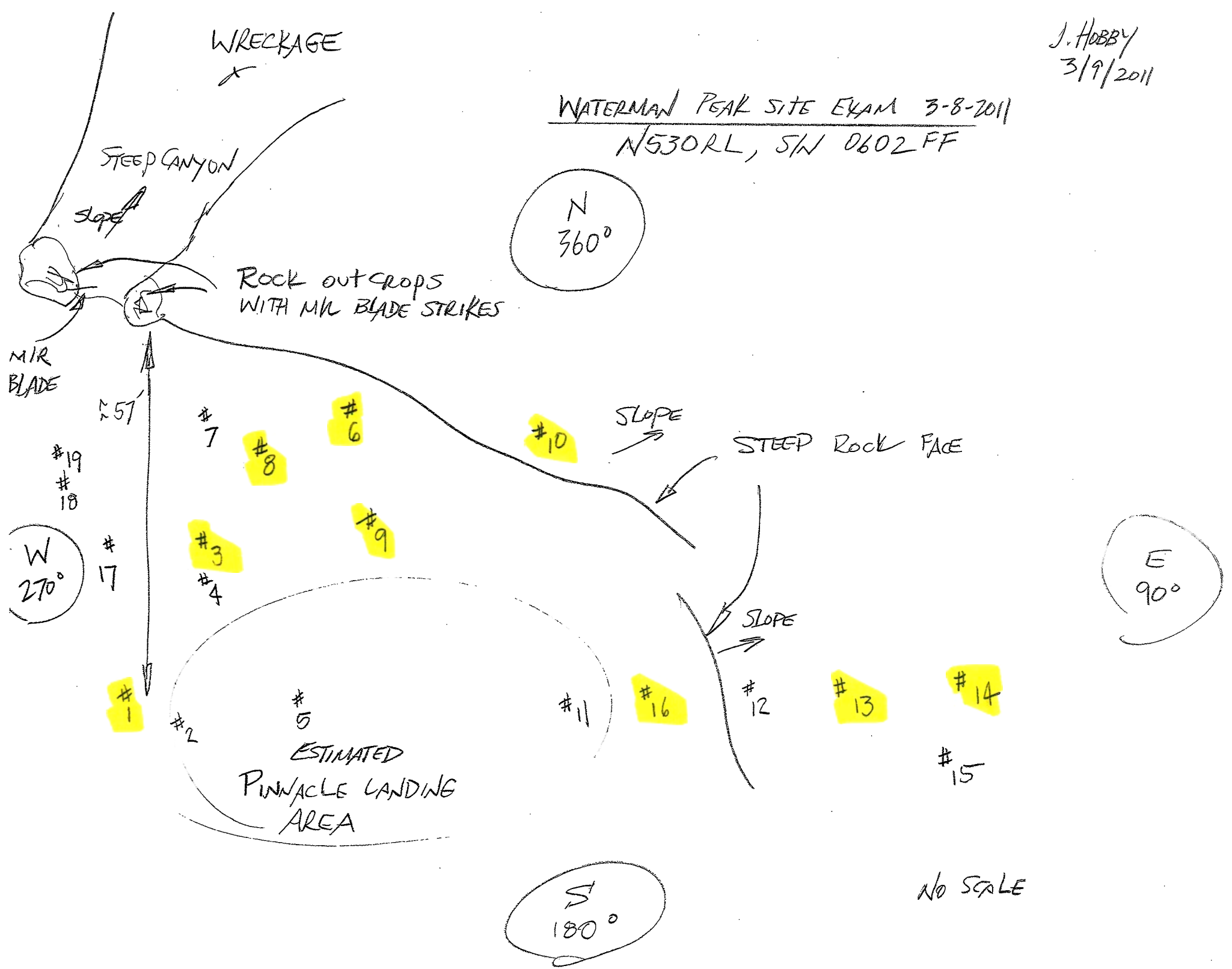
Item Number	Description
#1	T/R blade skin with some red paint and blue adhesive. Located approx. 57 feet south of rock out cropping where helicopter main rotor blades made contact
#2	Piece of honeycomb, approx. 6 feet east of Item #1
#3	Piece of red paint, approx. 28 feet to the north east of Item #1
#4	Piece of main rotor blade tip with yellow paint, approx. 25 feet to the north east of Item #1
#5	Piece of aluminum with red adhesive
#6	Piece of red paint – not recovered
#7	Piece of aluminum with red adhesive.
#8	Piece of tail rotor blade skin with red paint
#9	Piece of red paint
#10	Piece of tail rotor blade skin with red paint and blue adhesive from abrasion strip bond
#11	Piece of blue paint
#12	Piece of Plexiglas
#13	Tip end section of tail rotor spar with honeycomb imprint in blue adhesive
#14	Piece of tail rotor tip cap trailing edge and tail rotor blades skin with red paint
#15	Piece of main rotor blade tip weight fractured through threaded area
#16	Piece of tail rotor tip skin with red paint, blue adhesive and rivet for the dog leg abrasion strip
#17	Piece of main rotor blade skin with yellow paint
#18	Piece of abrasion strip
#19	Piece of aluminum and piece of main rotor blade plastic tip with yellow paint

[1] Based on IIC's right rear witness synopsis document



103-088

Figure 4-2. Tail Rotor Blade


WRECKAGE
J. HOBBY
3/9/2011
WATERMAN PEAK SITE EXAM 3-8-2011
N530RL, S/N 0602FF
STEEP CANYON
SLOPE
N
360°
ROCK OUTCROPS
WITH MR BLADE STRIKES
MR
BLADE
57'
#7
#6
#8
#10
SLOPE
STEEP ROCK FACE
#19
#18
#9
#3
#4
W
270°
#17
E
90°
SLOPE
#1
#2
#5
#11
#16
#12
#13
#14
#15
ESTIMATED
PINNACLE LANDING
AREA
S
180°
NO SCALE


260
#1


#7
260


#6


#8


260
#9

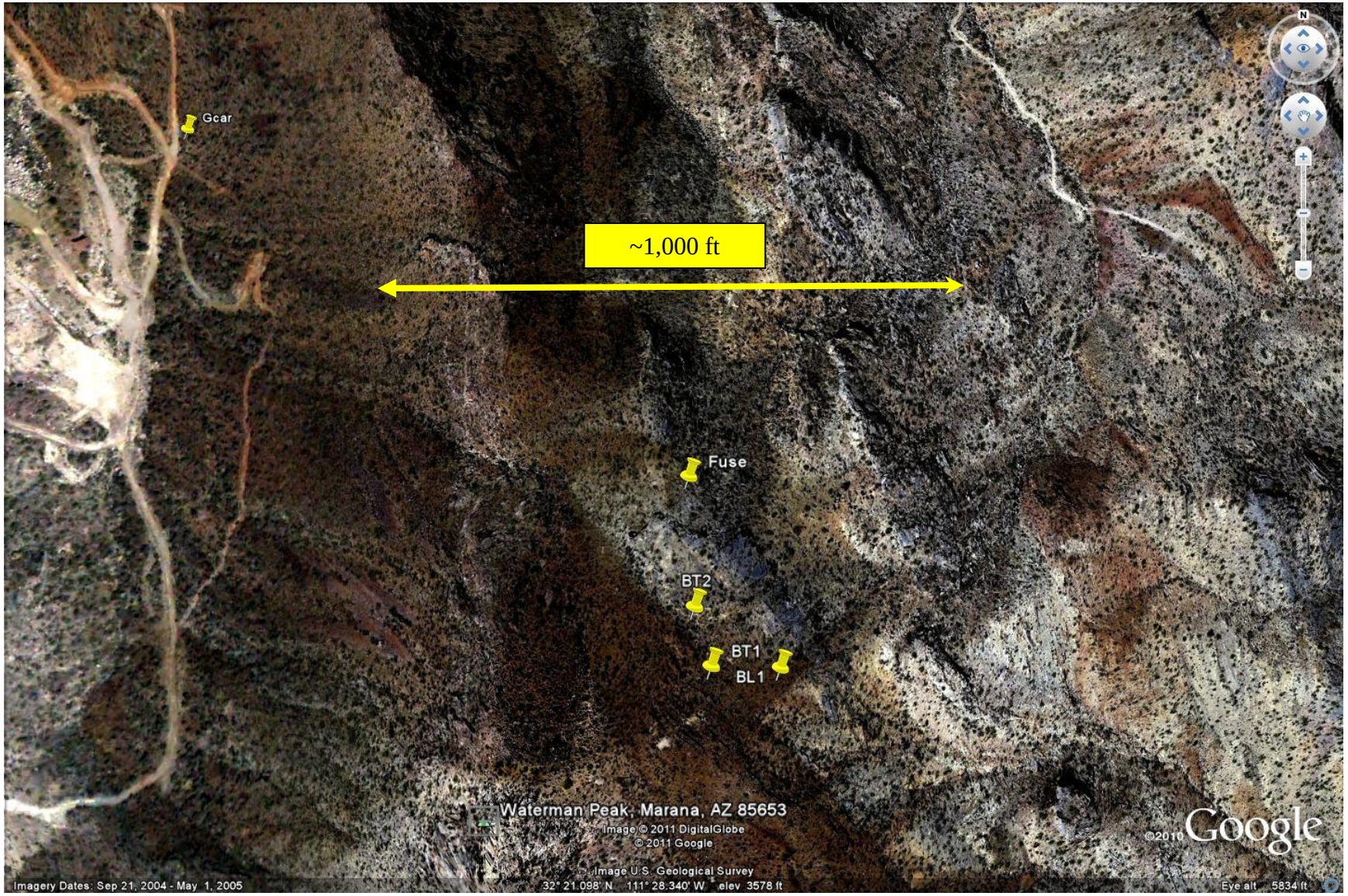

#10


#13
240

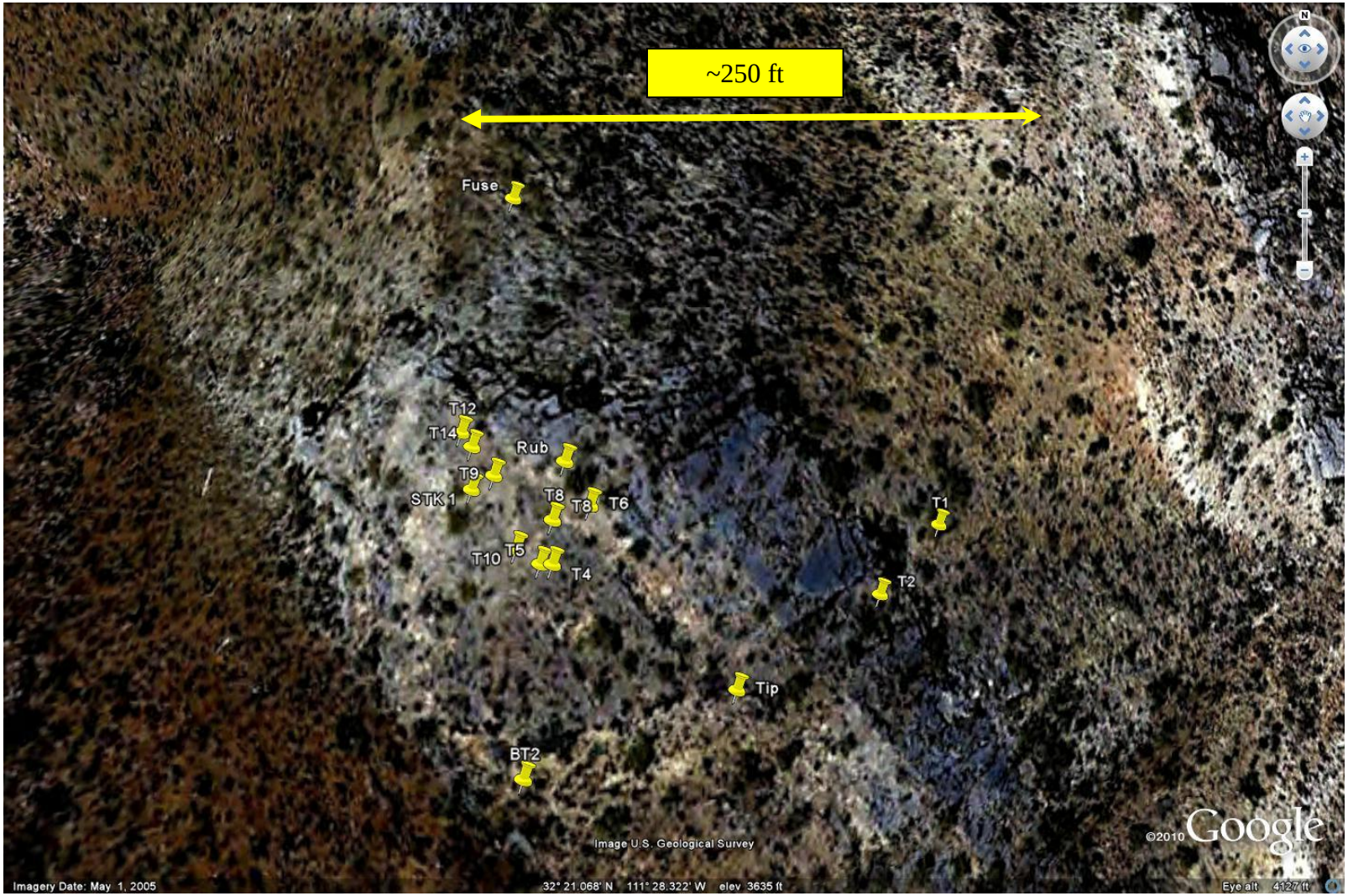

240


#16

WPR11GA115
From FAA



WPR11GA115
From FAA



We visited the crash site one last time. We found numerous tail rotor blade pieces that gave us a definitive plane that the tail rotor was on when it came apart. It was not a mechanical failure. We could not definitively locate what the tail rotor hit however, but it did hit something.
I've attached another google earth j peg to give you a rough idea of what we found. Ignore the pins labeled BT2, Ruc and STK 1. Those are not T/R parts. The pin labeled Tip is a piece of one of the T/R blade tips.