



*Department of the Interior*



# DOI Aviation Mishap Review FY 09

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*John Mills*



# Ground Rules



The National Transportation Safety Board

NTSB 831.13 Flow and dissemination of accident or incident information.

(b) ... Parties to the investigation may relay to their respective organizations information necessary for purposes of prevention or remedial action.

... However, no (release of) information... without prior consultation and approval of the NTSB.

**This information is provided  
for accident prevention purposes only**



# Anchorage, AK

October 2, 2008



Piper  
PA-18

Mission

Proficiency  
Training

Damage

Substantial

Injuries

None

Procurement

Fleet

NTSB ID

ANC09LA002





## ***NTSB Probable Cause Anchorage, AK, October 2, 2008***



The National Transportation Safety Board

The National Transportation Safety Board determined that the probable cause of this accident was ...

### Probable Cause

"The pilot's excessive application of the brakes during the landing roll, which resulted in the airplane nosing over."

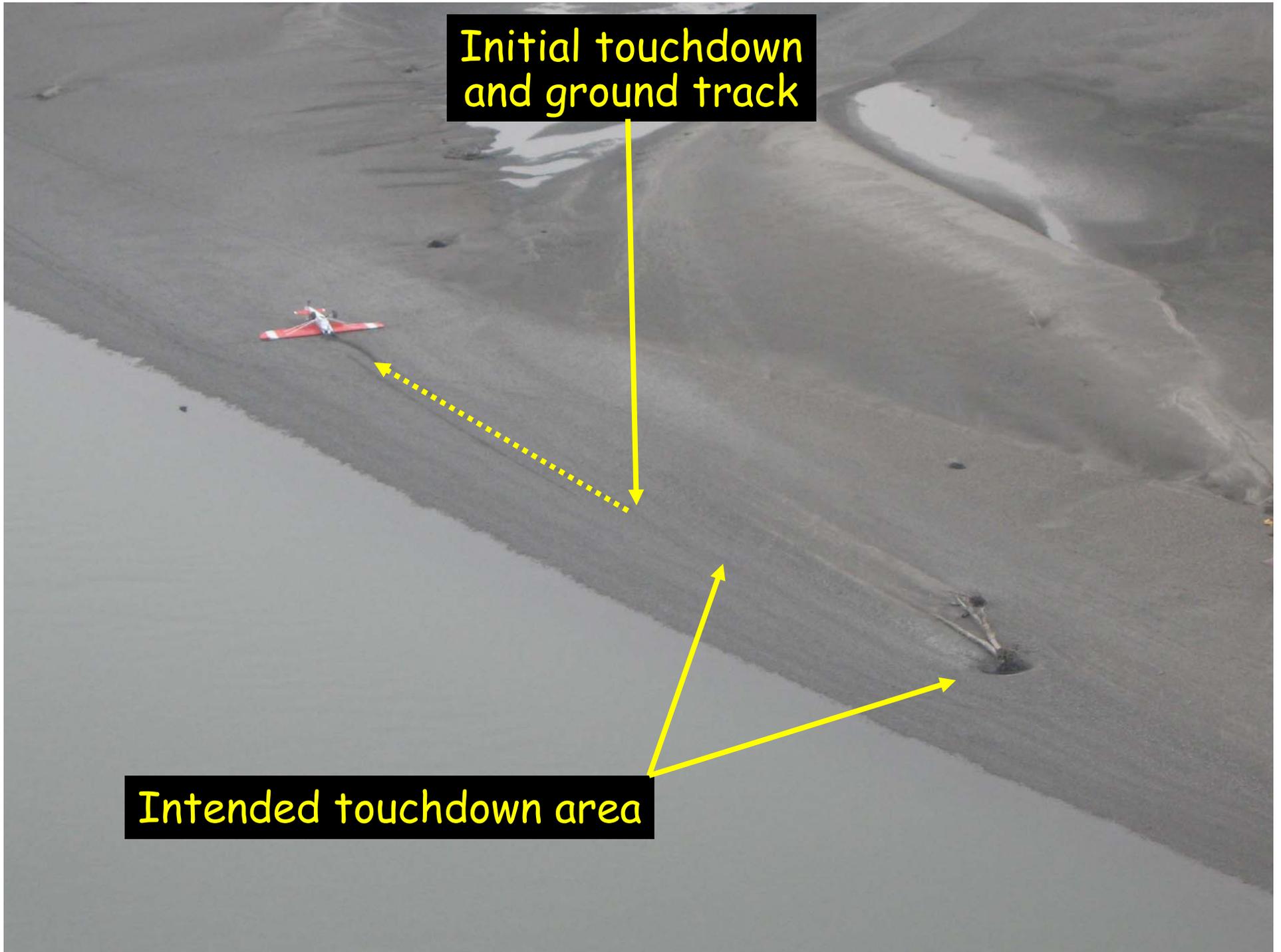


Landing Area



Initial touchdown  
and ground track

Intended touchdown area

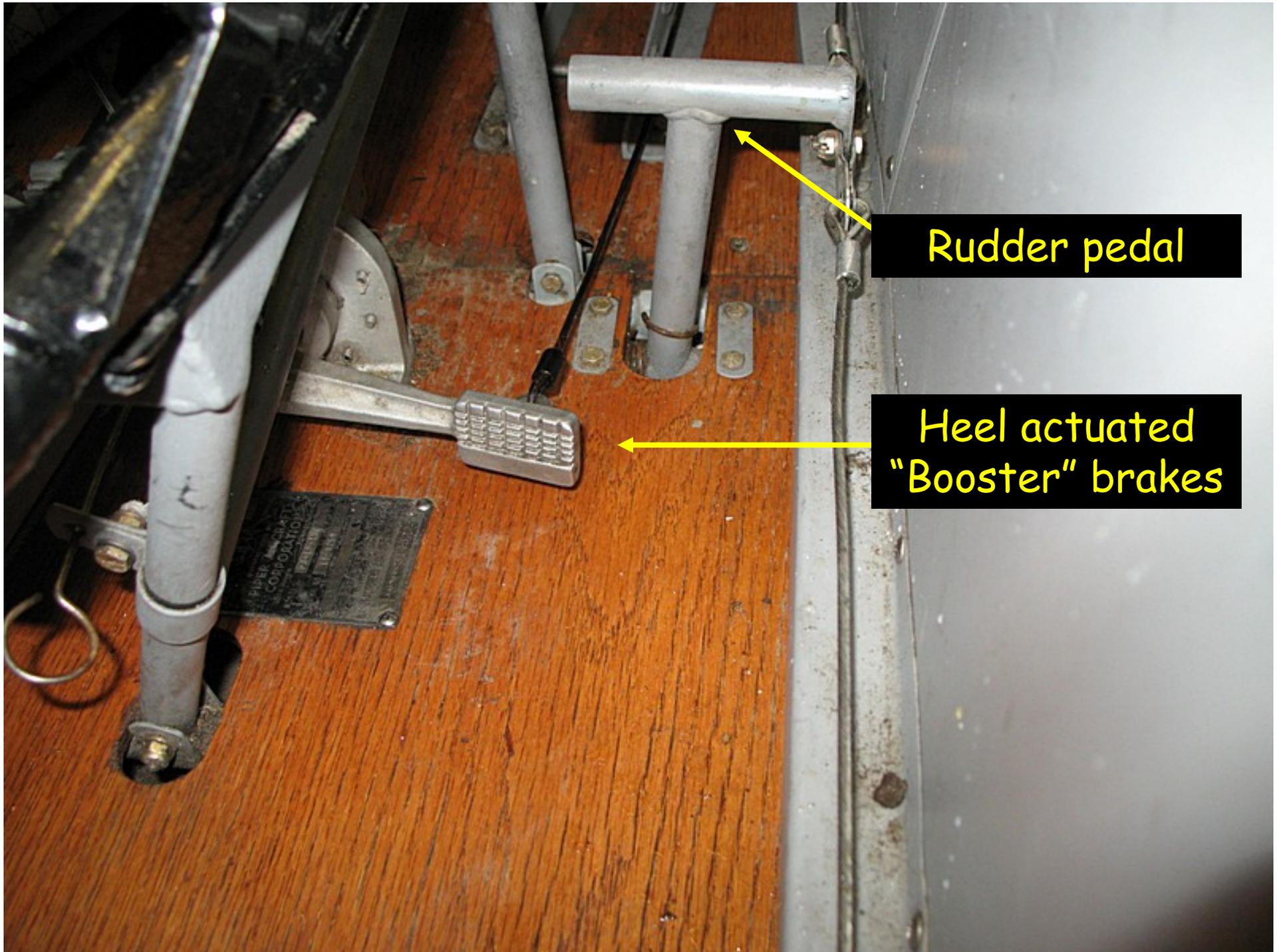


**Ground scars from main landing gear**



# Prop Strikes and Prop Scar





Rudder pedal

Heel actuated  
"Booster" brakes



*Questions ?*



*Austin, NV*  
*August 20, 2009*



**Air Tractor**  
**AT-802A**

**Mission**

**Fire Suppression**

**Damage**

**Destroyed**

**Injuries**

**1 Fatal**

**Procurement**

**Variable Term**

**NTSB ID**

**WPR09GA407**





## ***NTSB Probable Cause Austin, NV, August 20, 2009***



The National Transportation Safety Board

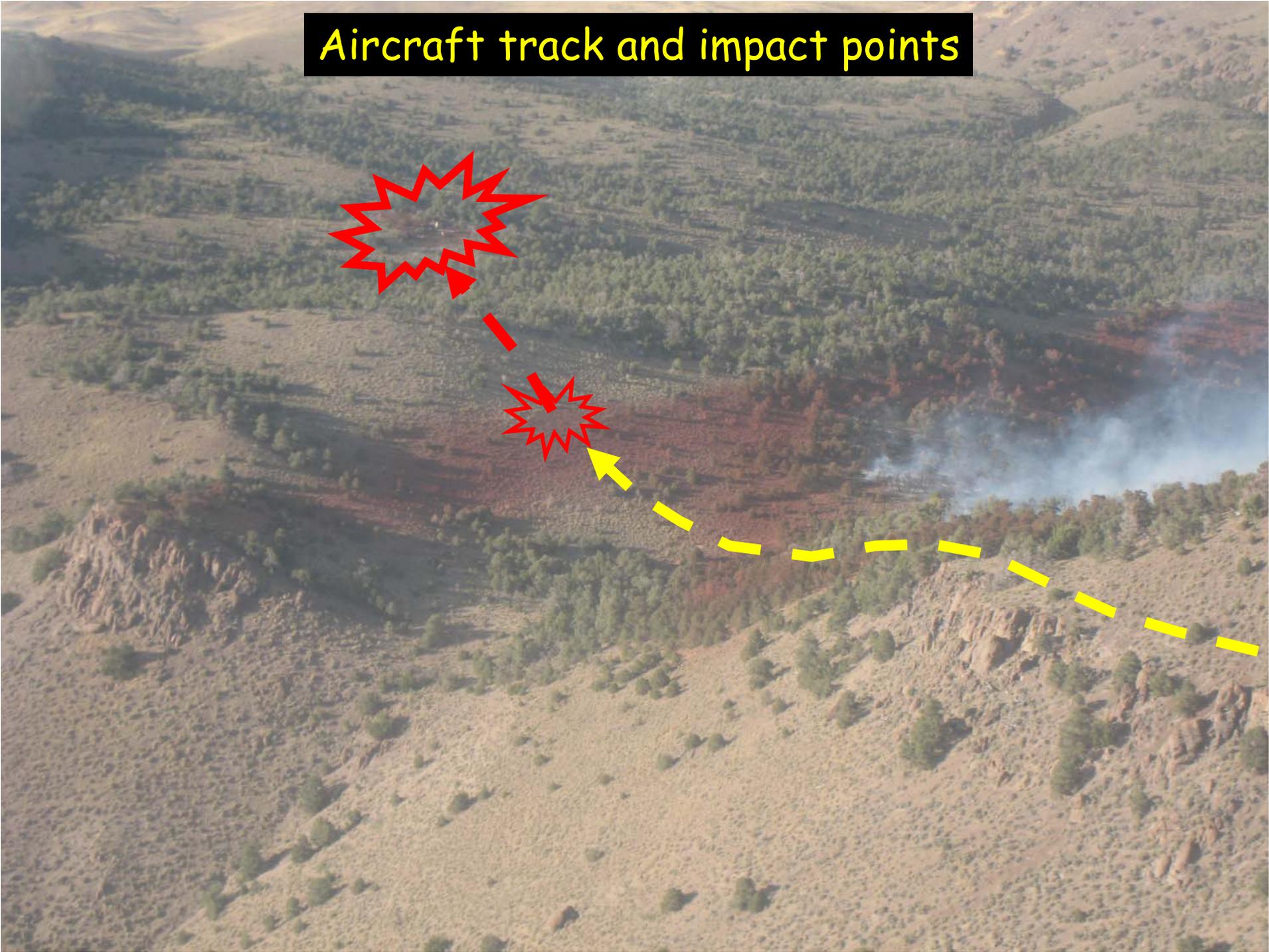
The National Transportation Safety Board determined that the probable cause of this accident was ...

### Probable Cause

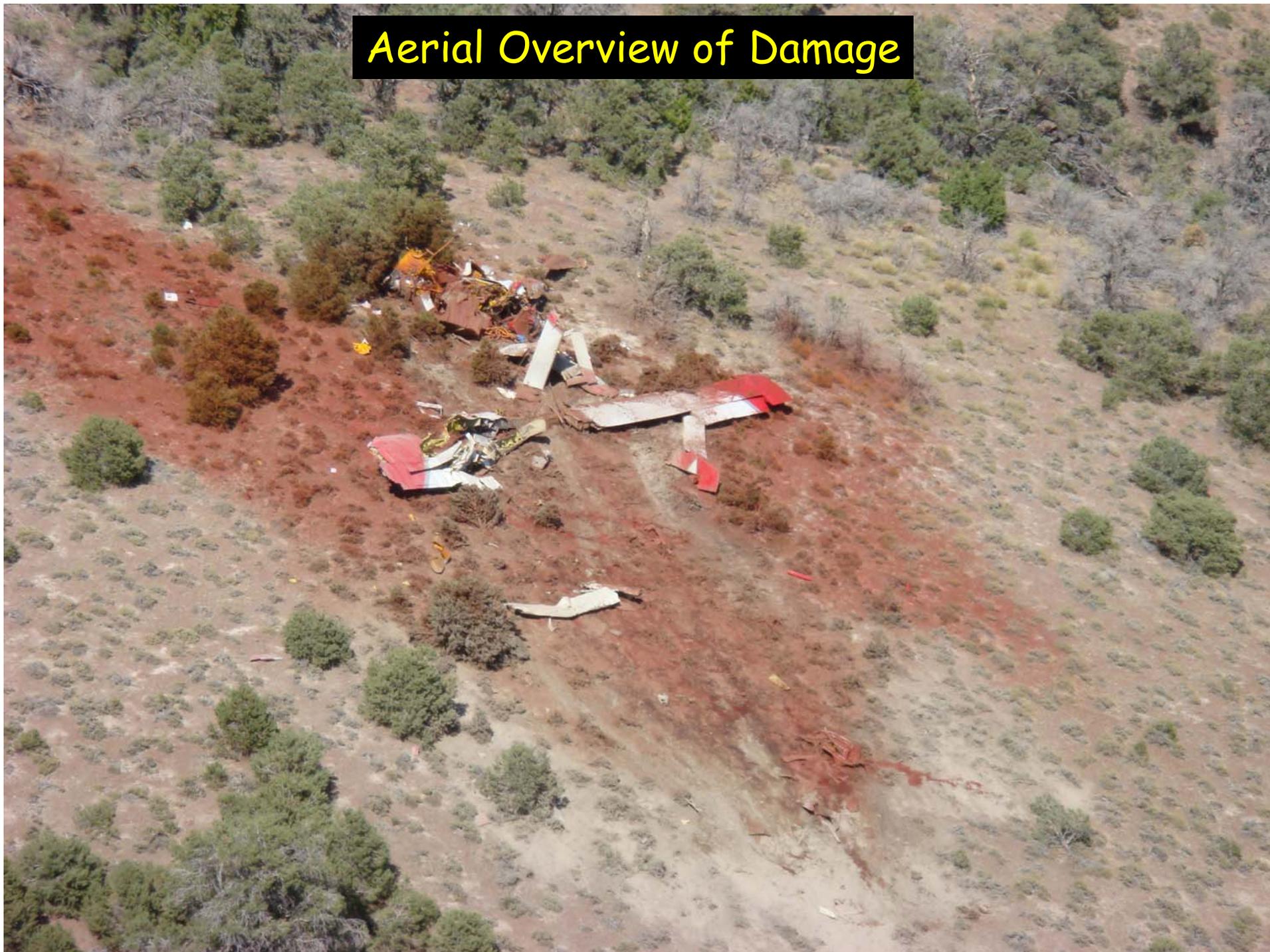
"The pilot's failure to maintain a stabilized approach prior to the retardant drop and his subsequent failure to release the retardant load, resulting in a stall/mush and collision with terrain."



# Aircraft track and impact points



# Aerial Overview of Damage

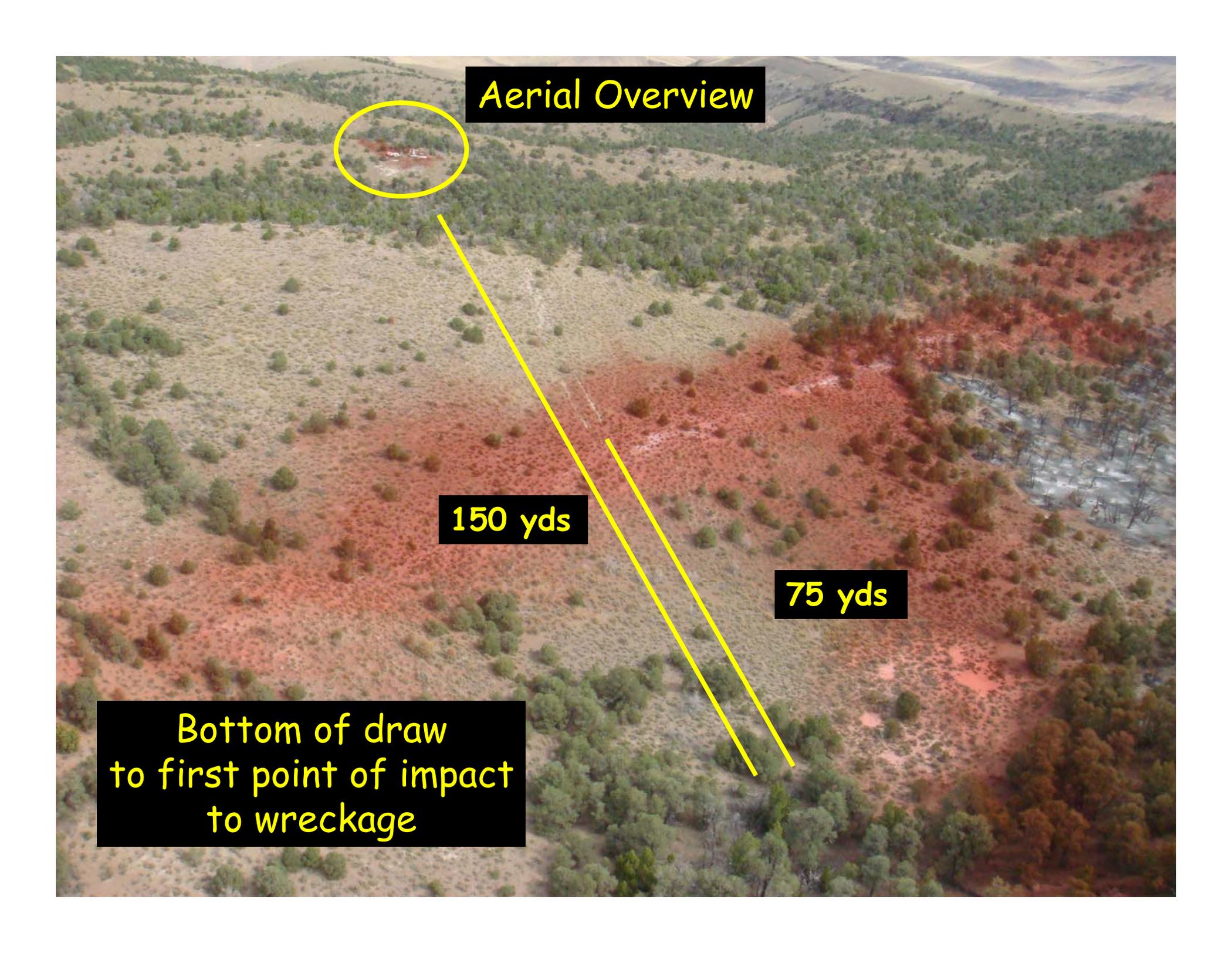


# Wreckage path



Cockpit





**Aerial Overview**

**150 yds**

**75 yds**

**Bottom of draw  
to first point of impact  
to wreckage**

# Air Tanker Performance & Risk

## EXTRA CREDIT QUIZ !!

Which aircraft has the worst performance characteristics in fire suppression :

- a. B-747
- b. P2V-7
- c. AT-802
- d. P-3



## AT-802F

Drop speed – 125-130 mph (109-113 kts)

Stall Speed<sup>1</sup> – approx. 98 mph (85 kts)

Release Altitude – 60 ft AGL (min)

Max Rate of Climb – 850 ft / min

$$125 / 98 = 1.27$$

820 gal. of retardant

<sup>1</sup>Estimated Stall speed based on configuration

## P2V-7

Drop Speed – 140 mph (122 kts)

Stall Speed<sup>2</sup> – approx. 90 mph (78 kts)

Release Altitude – 150 ft AGL (min)

Max Rate of Climb – 1760 ft / min

$$140 / 90 = 1.55$$

2400 gal. of retardant

<sup>2</sup>Estimated Stall speed based on configuration





## P-3

Drop Speed – 130 kts (150 mph)

Stall Speed<sup>3</sup> – approx. 85 kts (98 mph)

Release Altitude – 150 ft AGL (min)

Max Rate of Climb - 1840 ft / min (at 139,000 lbs)

$$130 / 85 = 1.53$$

3000 gal. of retardant (2550 by contract)

<sup>3</sup>Estimated Stall speed based on configuration

## B747-200

Drop Speed – 140 kts (161 mph)

Stall Speed\* – approx. 108kts (125 mph)

Release Altitude – 400 ft AGL

Max Rate of Climb – 3800 ft / min

$$140 / 108 = 1.30$$

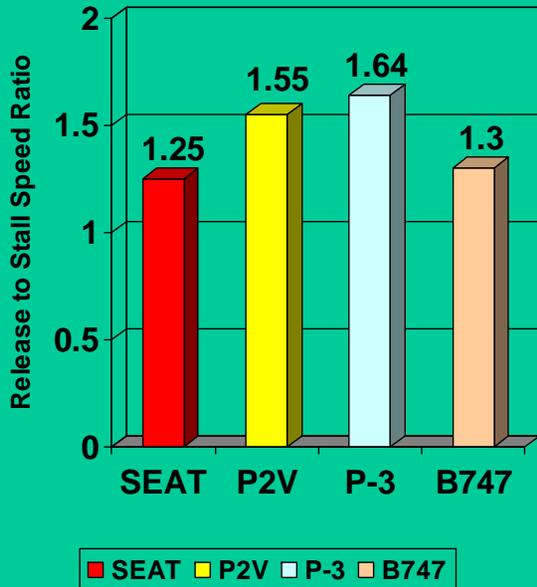
20,500 gal. of retardant

\*Estimated Stall speed based on configuration



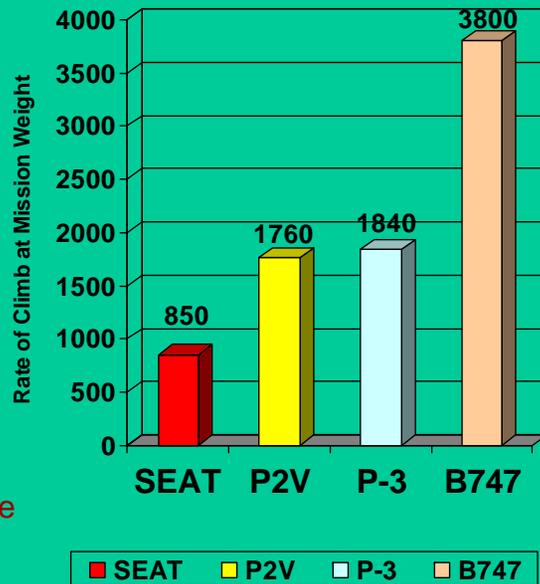
# Tanker Maneuverability Margin Comparisons

SEAT operate closer to stall

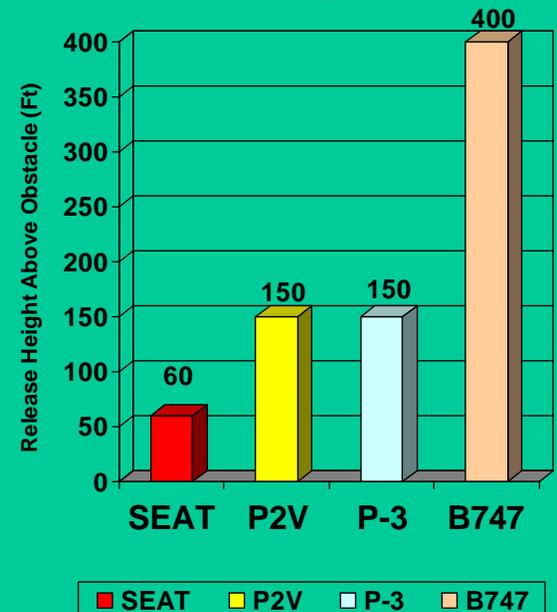


AT-802 operates 60% lower Height Above Terrain than the P2V-7.  
 AT-802 has a release to stall ratio 19% lower than the P2V-7

SEAT has the lowest mission rate of climb



SEAT release closest to the ground



*Questions ?*





# Bethel, AK

August 30 2009



Piper  
PA-18

Mission

Law Enforcement  
Support

Damage

Substantial

Injuries

None

Procurement

Fleet

NTSB ID

ANC09TA090





## ***NTSB Probable Cause Bethel, AK, August 30, 2009***



The National Transportation Safety Board

The National Transportation Safety Board determined that the probable cause of this accident was ...

### Probable Cause

"The pilot's excessive use of brakes while landing at an off-airport site."



# Landing Area



**Pilot's eye view**

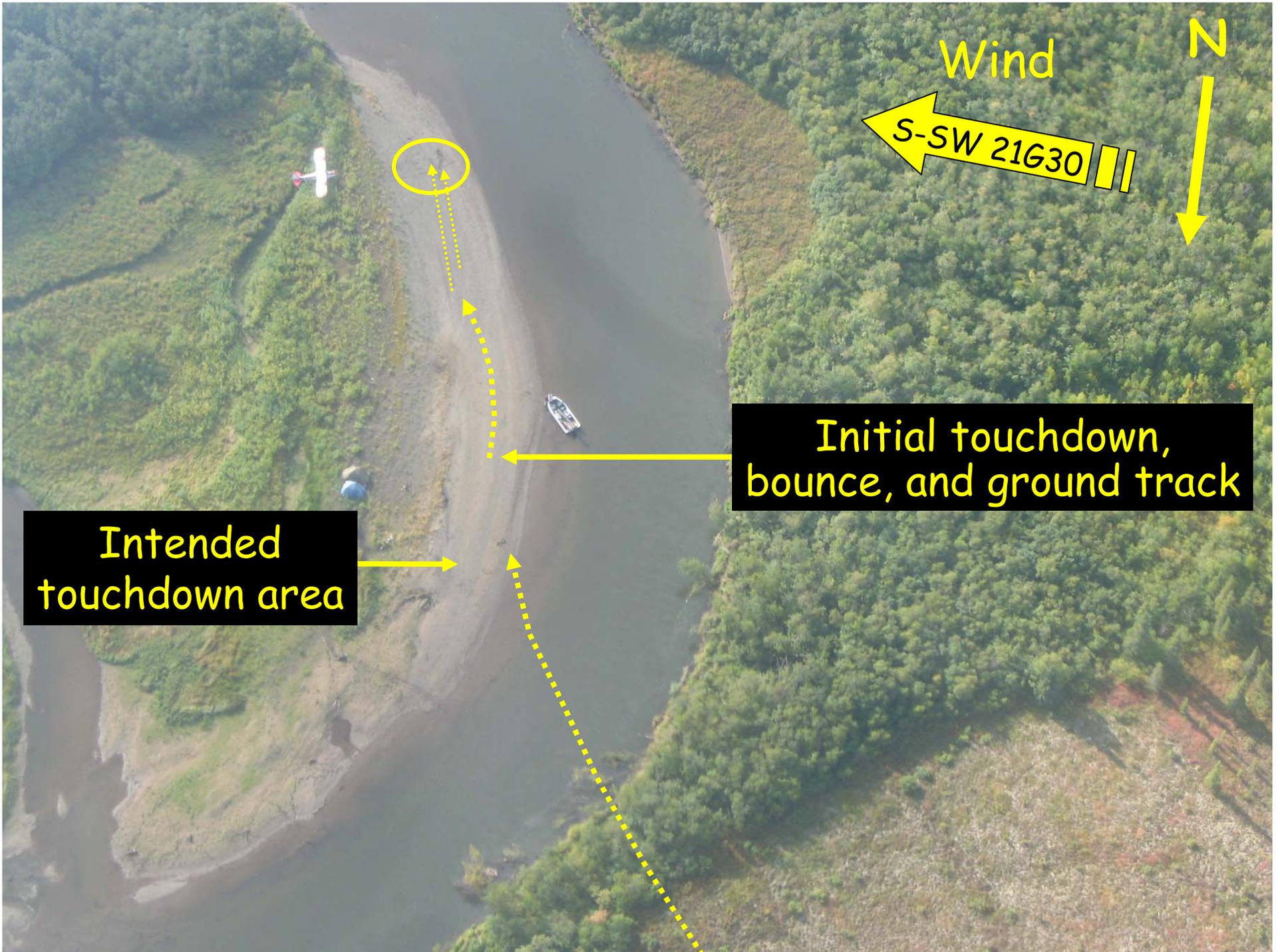


Pilot's eye view



Pilot's eye view





Wind

S-SW 21G30

N

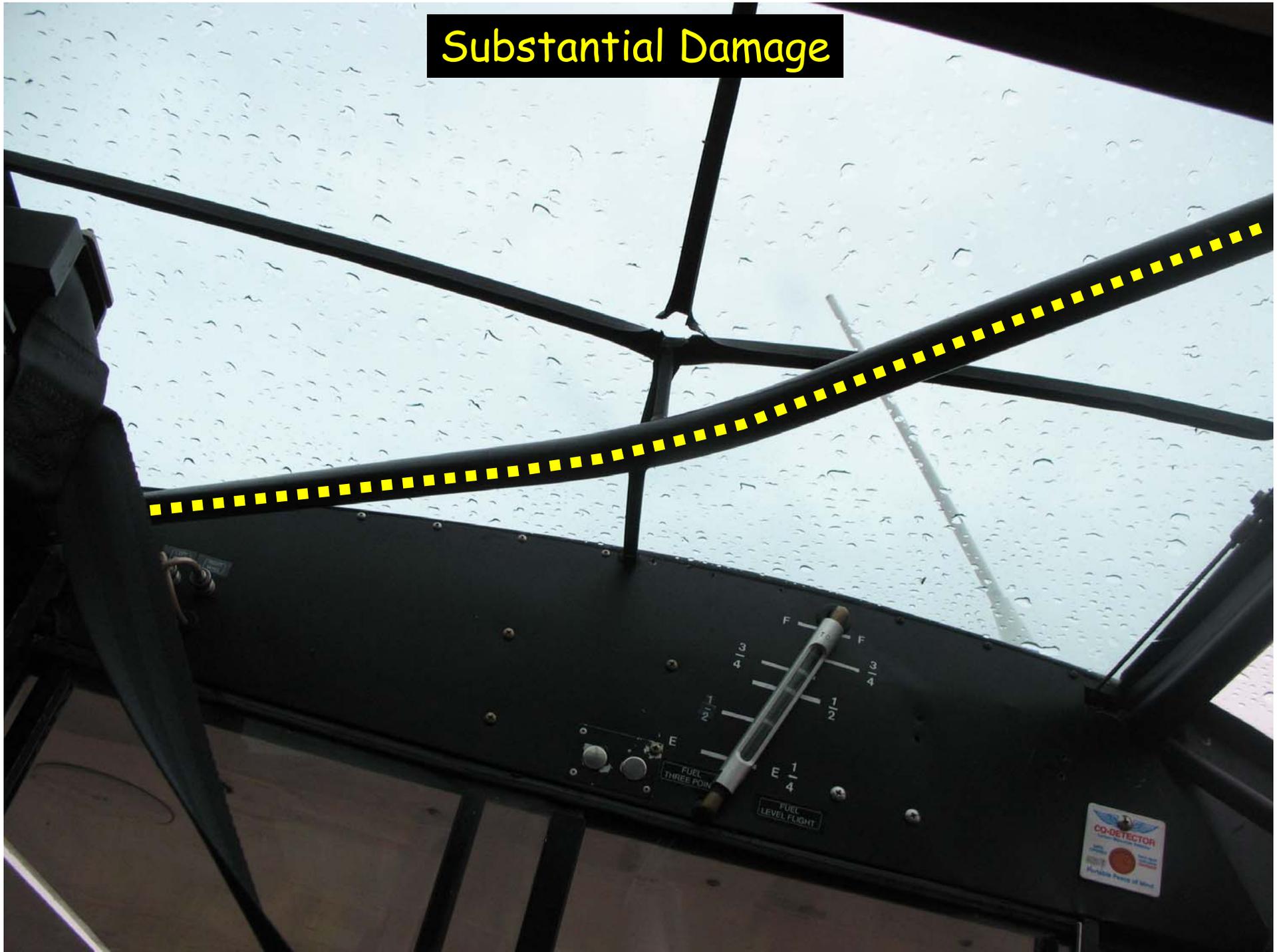
Initial touchdown, bounce, and ground track

Intended touchdown area



Aircraft was moved immediately following the accident. The aircraft initially came to rest on its nose, 90° to the right.

Substantial Damage





*Questions ?*





# Gulkana, AK

September 3, 2009



Aviat  
A-1B

Mission

Pilot Proficiency

Damage

Substantial

Injuries

None

Procurement

Fleet

NTSB ID

ANC09TA092





# ***NTSB Probable Cause Gulkana, AK, September 3, 2009***



**The National Transportation Safety Board**

**The National  
Transportation Safety  
Board determined that  
the probable cause has  
not yet been determined**

**Probable Cause**

**To be determined.**



Landing Area



Landing Area



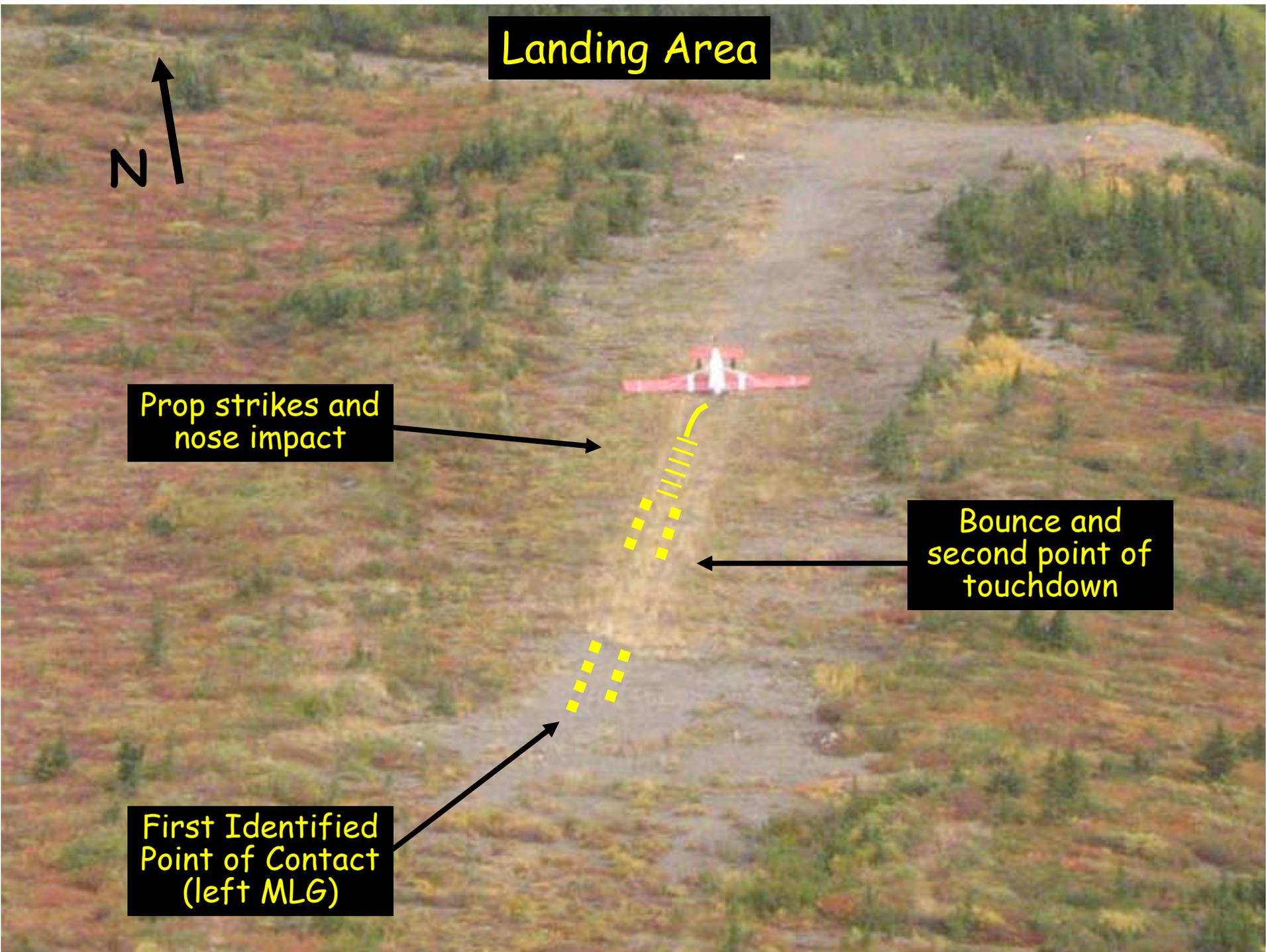
Prop strikes and nose impact



Bounce and second point of touchdown



First Identified Point of Contact (left MLG)









*Questions ?*