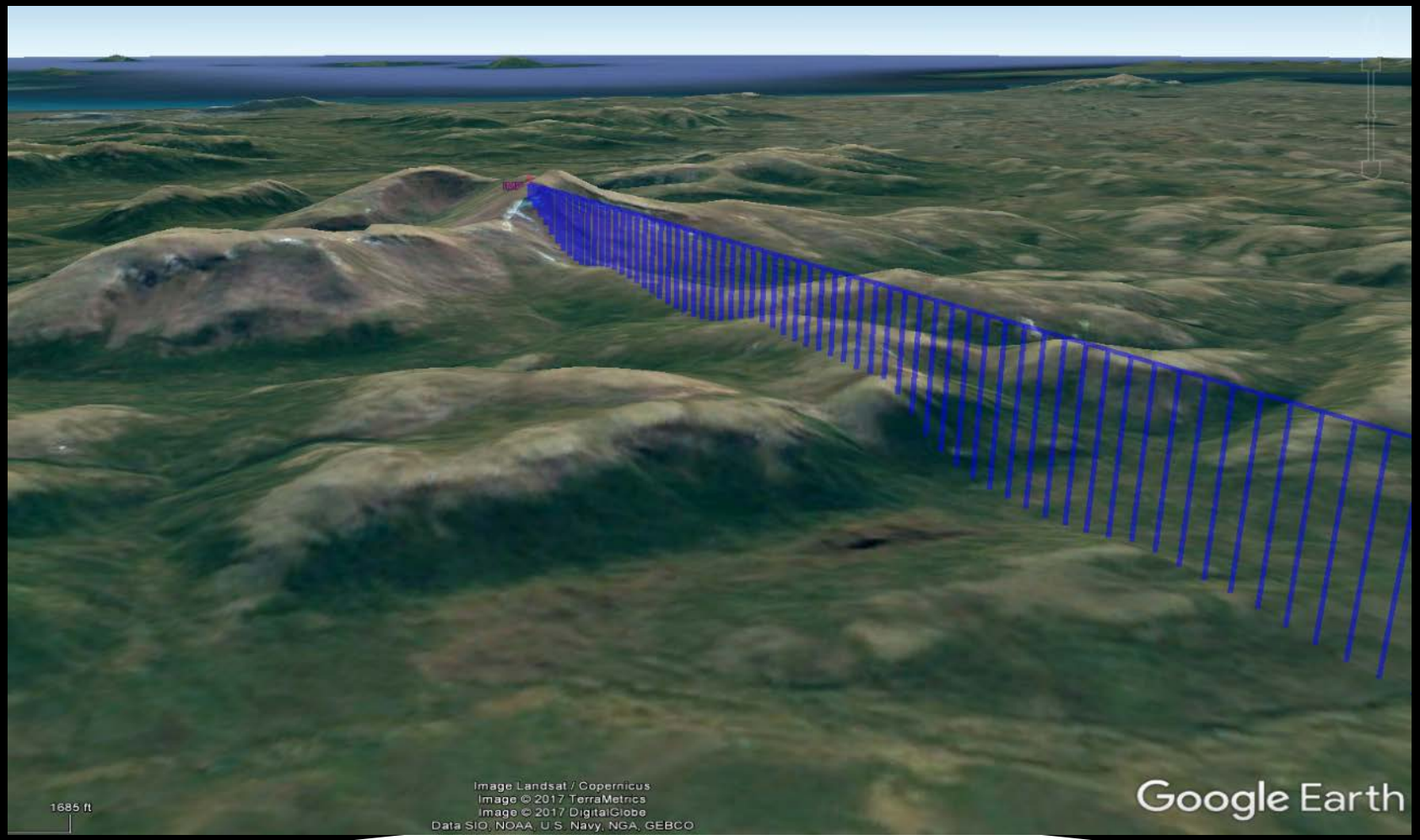


Cessna Grand Caravan accident Togiak, Alaska

August 17, 2017

Honeywell

EGPWS configuration

Honeywell

- Honeywell KGP-560 EGPWS installed on FAA Form 337
  - Listed as a follow on to previous STC SA00886WI-D with following deviations noted
    - No use of terrain display
    - No radar altimeter connection
    - Configured for Class B operation
- EGPWS damaged such that flight history data could not be retrieved

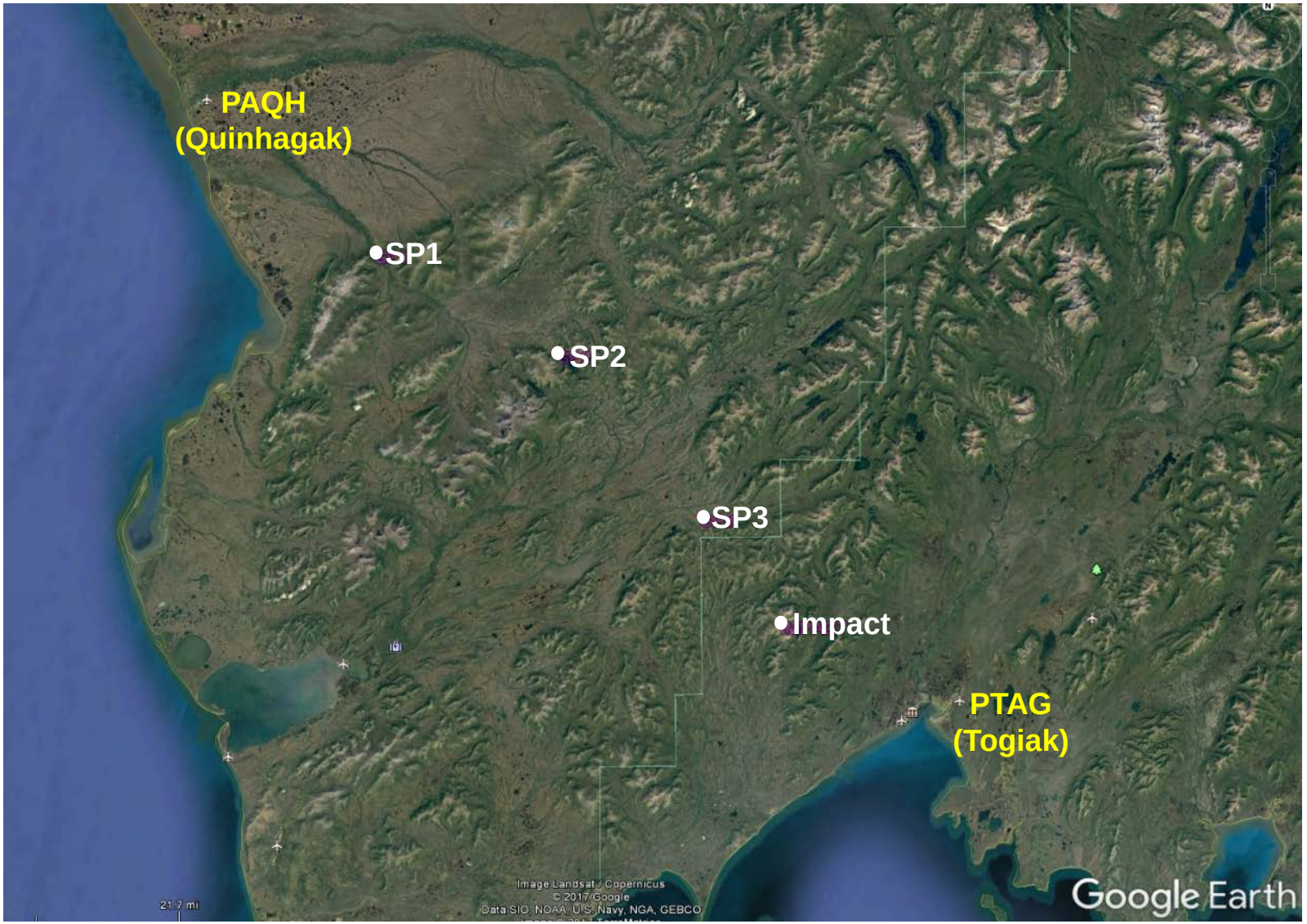
EGPWS analysis

Honeywell

- An estimated flight path profile was assembled using the provided Spidertracks data as well as the impact location
  - Configured to TAWS Class B
- Two simulations were used
  - First has approximately the last 3 NM of flight to impact
  - Second uses the Spidertracks recorded flight data starting at the first data point at 676 feet MSL

Spidertracks points accident flight

Honeywell



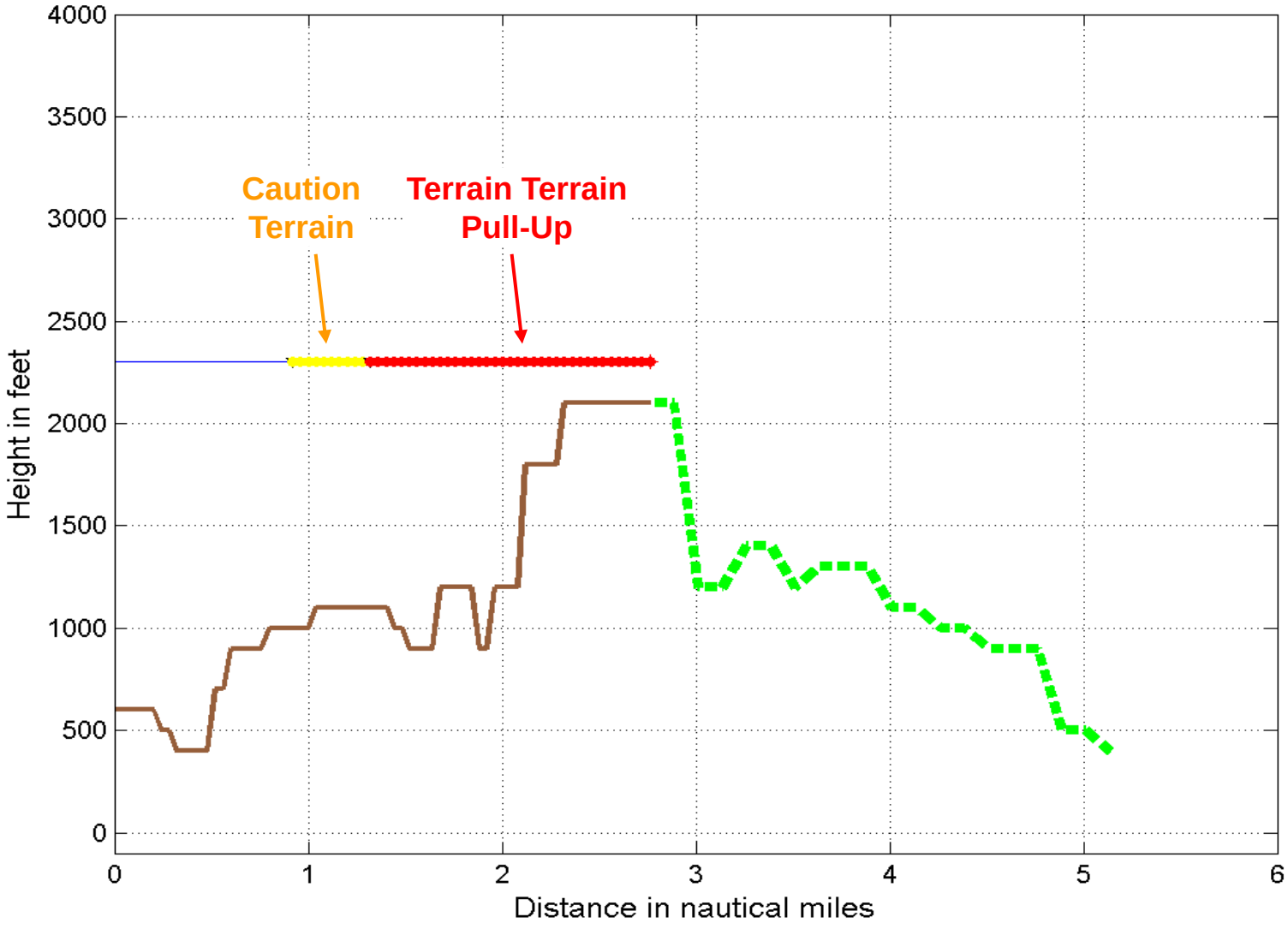
EGPWS simulation results

Honeywell

- EGPWS simulation provides the following results:
  - *The simulation uses an **estimated** aircraft flight path*
  - Caution Terrain – Caution Terrain 46 seconds to impact
  - Terrain Terrain Pullup 36 seconds to impact
  - Pullup Pullup continues until impact

EGPWS simulation results

Honeywell



EGPWS simulation results from first Spidertracks point

Honeywell

- Based on Spidertrack data, the aircraft appears to have flown at 1000 feet MSL for most of the flight
- Terrain clearance of between 500 and 700 feet for most of flight
- Continuous EGPWS Pull up warnings are given for most of the flight until the aircraft climbs to 2300 feet towards the end
- Class B requirements do not support these type operations

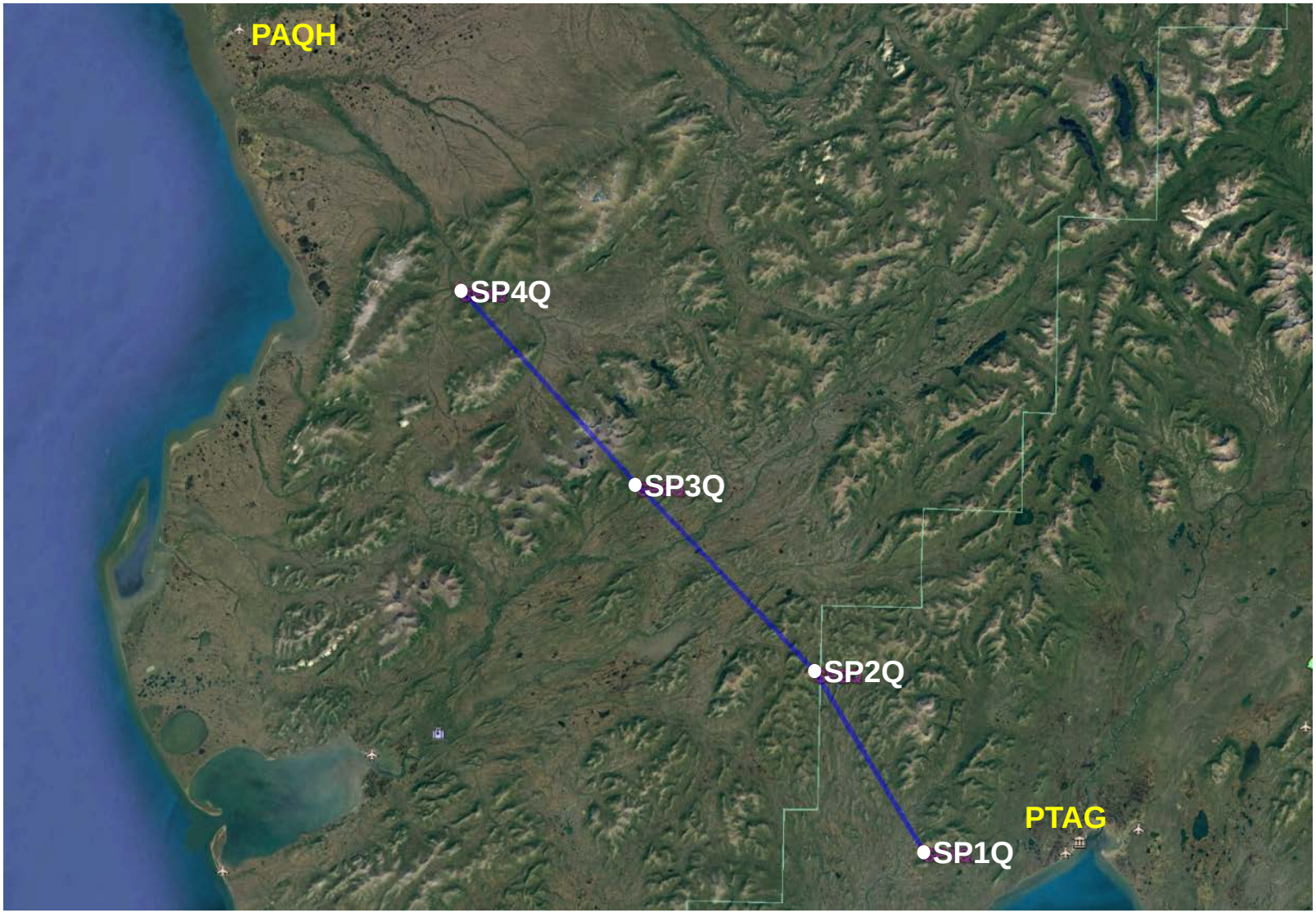
Prior flight leg from PATG to PAQH

Honeywell

- NTSB provided the recorded Spidertracks data for the prior flight leg from PATG to PAQH
  - 4 recorded positions, 30 minute flight
- This data was used to put together a flight simulation to see if EGPWS alerts would have been given
- No EGPWS alerts were given as aircraft was well above the terrain at around 4500 feet MSL

Simulated Flight Path PATG to PAQH

Honeywell



Summary

Honeywell

- Because of the low level VFR flight operations of between 500 and 700 feet above the ground the EGPWS would have given continuous Pull-up alerts
- Current regulations require Class B TAWS for the aircraft involved in this accident
- Class B requirements do not support these type operations

Thank You

TAWS Terrain Clearance Requirements

Honeywell

Class B TAWS	
Phase of Flight	**TAWS (RTC) Level Flight**
Enroute	700 feet
Terminal (Int. Segment)	350 feet
Approach	150 feet
Departure	100 feet

Class C TAWS	
Phase of Flight	**TAWS (RTC) Level Flight**
Cruise	250 Feet
Takeoff	100 Feet
Landing	150 Feet

Source: TSO-C151c