

ANC17LA051 EGPWS Data Report

Background

Accident Date: September 2, 2017

Aircraft: AW139

EGPWS Configuration

EGPWS Model: MKXXII
EGPWS PN: 965-1595-030
EGPWS SN: 09153
Hardware Mod: 3
Application SW: 030.11
Terrain Database: 483NAM (North America). Latest TDB available at the time of the accident was 487NAM.

Category Settings:

Aircraft Type: 147 (AW139)
Air Data Type: 254 (Digital ARINC 429 Air Data via dual IOC bus)
Position Input Type: 253 (Dual IOC GPS, ARINC 429 high speed, 743A)
Callouts Option: 8 (Minimums Minimums)
Audio Menu: 128 (Basic helicopter menu)
Terrain Display Type: 251 (Honeywell Primus Epic with binary peaks elevations)
Options 1 Type: 29 (Peaks, Obstacles, Bank Angle enabled, MSL GPS Altitude Reference)
Radio Altitude Type: 253 (Digital ARINC 429 Rad Alt via dual IOC buses with DH Discrete)
Navigation Input Type: 248 (Digital ARINC 429 Glideslope, Localizer, Vertical Deviation, Lateral Deviation, and Mode Control via dual IOC buses)
Attitude Input Type: 253 (Digital ARINC 429 Pitch, Roll, Pitch Rate and Roll Rate, Vertical Speed and Altitude via dual IOC buses)
Magnetic Heading Type: 255 (Digital ARINC 429 Magnetic Heading via dual IOC buses)
Windshear Input: 0 (No windshear)
IO Discrete Type: 130 (Helicopter IO discrete definitions Lamp Format 2, Audio On discrete)
Volume Select: 0 (Nominal)
Autorotation Threshold Type: 15 (7.5% Torque)
Engine Torque Type: 18 (Digital ARINC 429)
Options 2 Type: 97 (Helicopter normal popup range 5 NM, low altitude popup range 2.5 NM, Autorotation Callout Option 2, low altitude no VFOM selected)
Options 3 Type: 81 (5 minute audio inhibit, inhibit includes Too Low Gear, Inhibit Altitude Callouts 50 feet and below Over Runway)
Options 4 Type: 0 (Low level operations over land)

27-JUN-2018

Recorded Data

The relevant flight leg is 700 (relative flight leg number 2). No faults or INOP events were recorded on flight leg 700. No landing record was created for leg 700. Faults and INOPs recorded on leg 701 (relative flight leg number 1) were created during power up in the lab.

Times listed below are EGPWS operating time in hours:minutes:seconds format.

Takeoff Record:

FLIGHT LEG 700: (379:52:43)
Lat/Long: 34.25655 / -118.33242
Geometric Alt: 1520.00 True Hdg: 99.84
GPS Alt: 1540.00 VFOM: 28.00
Pos. Uncert: 0.0034 Pos. Source: GPS1
Airport: KBUR

EGPWS warnings (from ANC17LA0.TXT):

FLIGHT LEG 2:
M6 Bankangle Bankangle (379:54:53)
TSA Tail Too Low (379:55:36)
M4C TooLowTerrain (379:56: 9)
M3 Don'tSink (Pause) Don'tSink (379:56:16)
TAD CautionTerrain (Pause) CautionTerrain (379:56:16)
TAD Warning! Terrain (379:56:18)
M4C TooLowTerrain (379:56:43)

Takeoff Record (power up in lab):

FLIGHT LEG 701: (381:09:35)
Lat/Long: 0.00000 / 0.00000
Geometric Alt: 0.00 True Hdg: -4.22
GPS Alt: 0.00 VFOM: 0.00
Pos. Uncert: 0.0000 Pos. Source: DR
Airport: XXXX

Warning data shown above was captured via RS-232 connection to the unit when the unit was powered up in the Honeywell lab. The warning history data file (WARN.DAT) was retrieved from the unit via flight history download card. The data was not successfully decoded during the initial download activities but was later decoded by Honeywell engineering. The decoded warning history uses relative flight leg numbering (accident flight is flight leg 2) and contains the EGPWS signal history data from 20 seconds prior to and 10 seconds after each of the alerts shown above.

Audio Inhibit and TAD Inhibit signals were true throughout the duration of the data recorded on the accident flight leg. The Tactical Select discrete (Low Altitude Mode Select) was not selected. The EGPWS Tail Strike alert at time 379:55:36 was triggered at a radio altitude of 18.5 feet and pitch angle 33

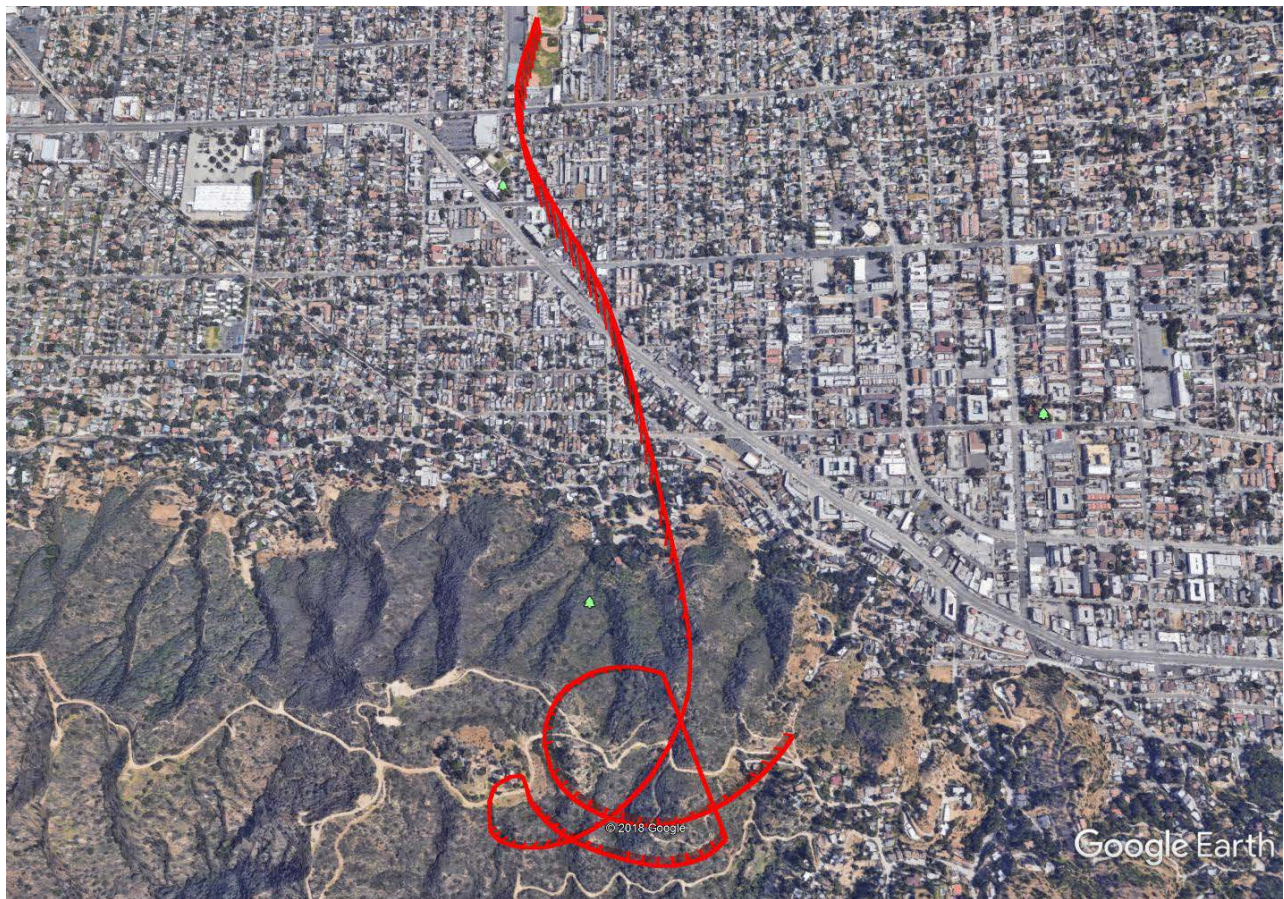
27-JUN-2018

degrees. Over the next several seconds, radio altitude reached the minimum recorded value of 5.8 feet and airspeed reached the minimum recorded value of 0 knots.

Summary

EGPWS Bank Angle, Tail Strike, Mode 4C, Mode 3, and Terrain Awareness alerts were recorded on flight leg 700 (relative flight leg 2). The EGPWS warning signal history data shows that EGPWS audio was inhibited.

The latitude, longitude, and GPS altitude from the warning history data were used to create the Google Earth profile shown below.



27-JUN-2018

