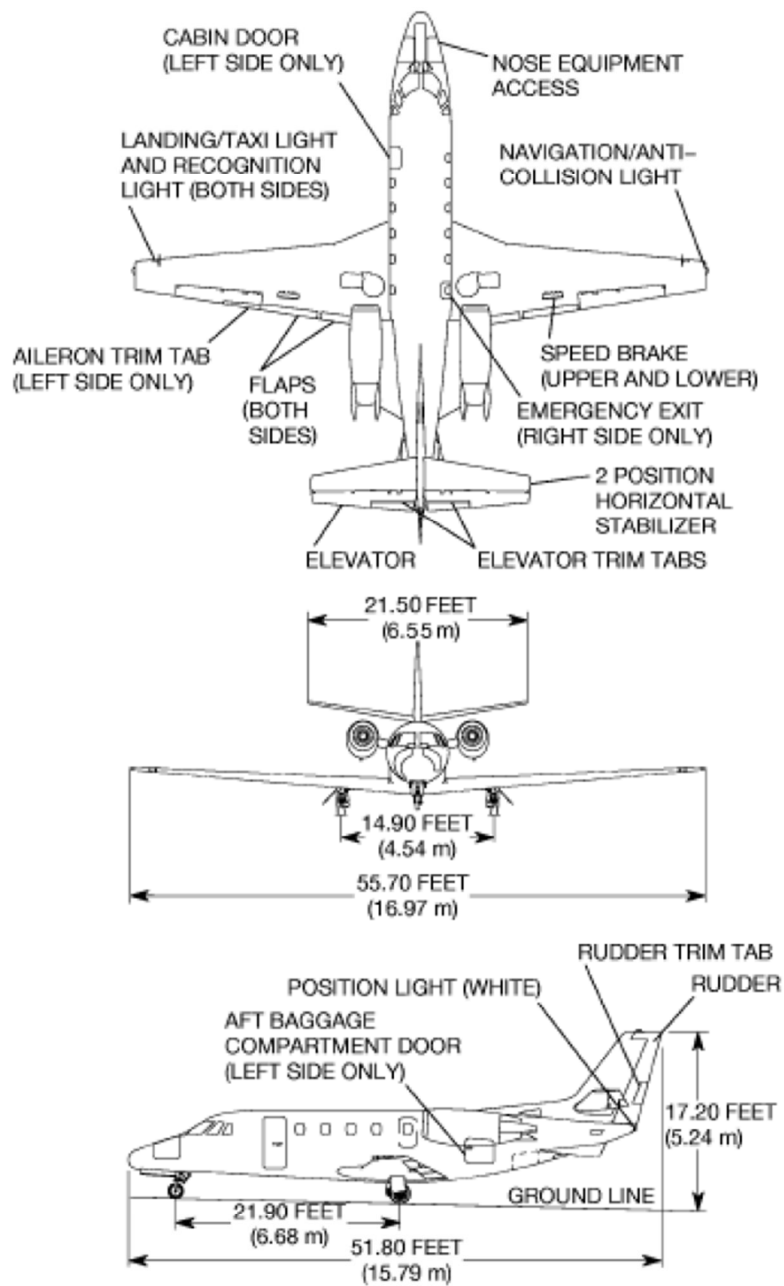


ATTACHMENT 1: CESSNA 560XL THREE-VIEW DRAWING

AIRPLANE THREE VIEW

A35109



A3510T1002

Figure 1-2*

Figure A1.1: Cessna 560XL three-view drawing.

ATTACHMENT 2: ROBERTSON FIELD AIRPORT (4B8)

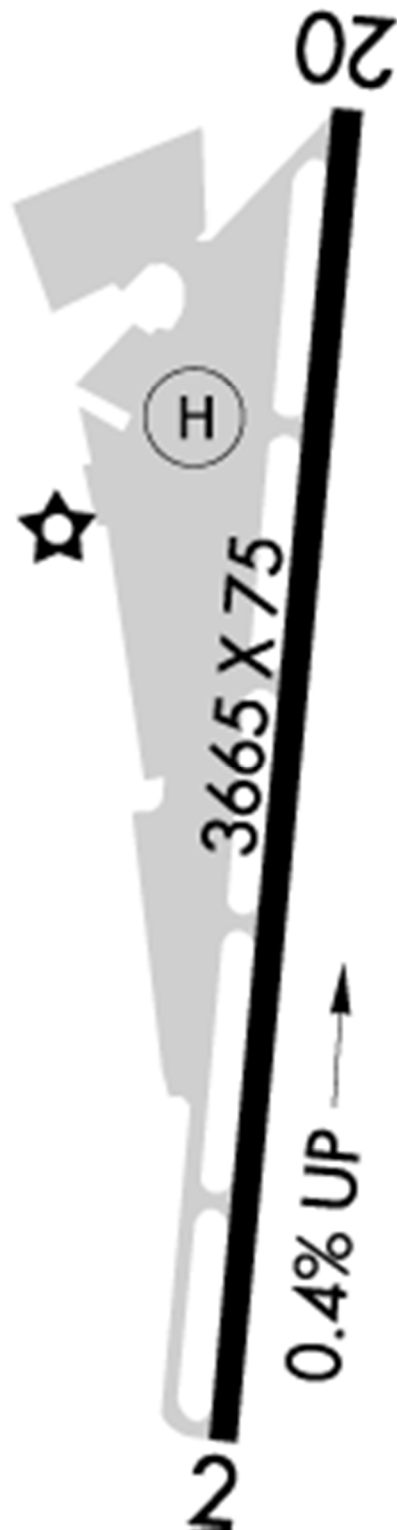


Figure A2.1: Robertson Field Airport (4B8) diagram. N560AR departed on runway 2.



Figure A2.2: Robertson Field Airport (4B8) image (Google Earth). Due north is toward the top of the page.

ATTACHMENT 9: WEIGHT AND BALANCE DATA (N560AR)

C&L AVIATION SERVICES, LLC					
AIRCRAFT WEIGHING					
CLA-16					
AC Reg:	N560AR		Model:	Cessna	DATE: 29SEP2017
			S/N:	560XLS	
PREPARED BY			CERTIFICATE NUMBER		
MF224			CRS # J2SR196J		
WEIGHING POINTS	SCALE READING (corrected)	TARE (lb)	NET WEIGHT (lbs)	STATION ARM (inches)	MOMENT (lb-in)
LEFT MAIN	6083.0	0.0	6083.0		
RIGHT MAIN	5851.0	0.0	5851.0		
SUB TOTAL			11934.0	348.5	4158999.0
NOSE	684.0	0	684.0	85.5	58482.0
TOTAL (AS WEIGHED)			12618.0	334.24	4217481.0
UNUSABLE/ DRAINABLE FUEL (IF NOT PRESENT WHEN WEIGHED)			31.6	333.46	10524.0
CORRECTED EMPTY WEIGHT			12649.6	334.24	4228005.0
AIRCRAFT STATUS at Weighing:					
All standard fluids serviced to full			Weighed in CLAS MX facility Bangor, Me		
Aircraft defueled and sumped			Aircraft weighed following exterior refinishing		
Scale: GEC Aircraft Scales					
s/n: LP1521					
LP1525					
LP1514					
Last Cal: 6-Mar-17					

Figure A3.1: Subset of N560AR aircraft empty weight record.

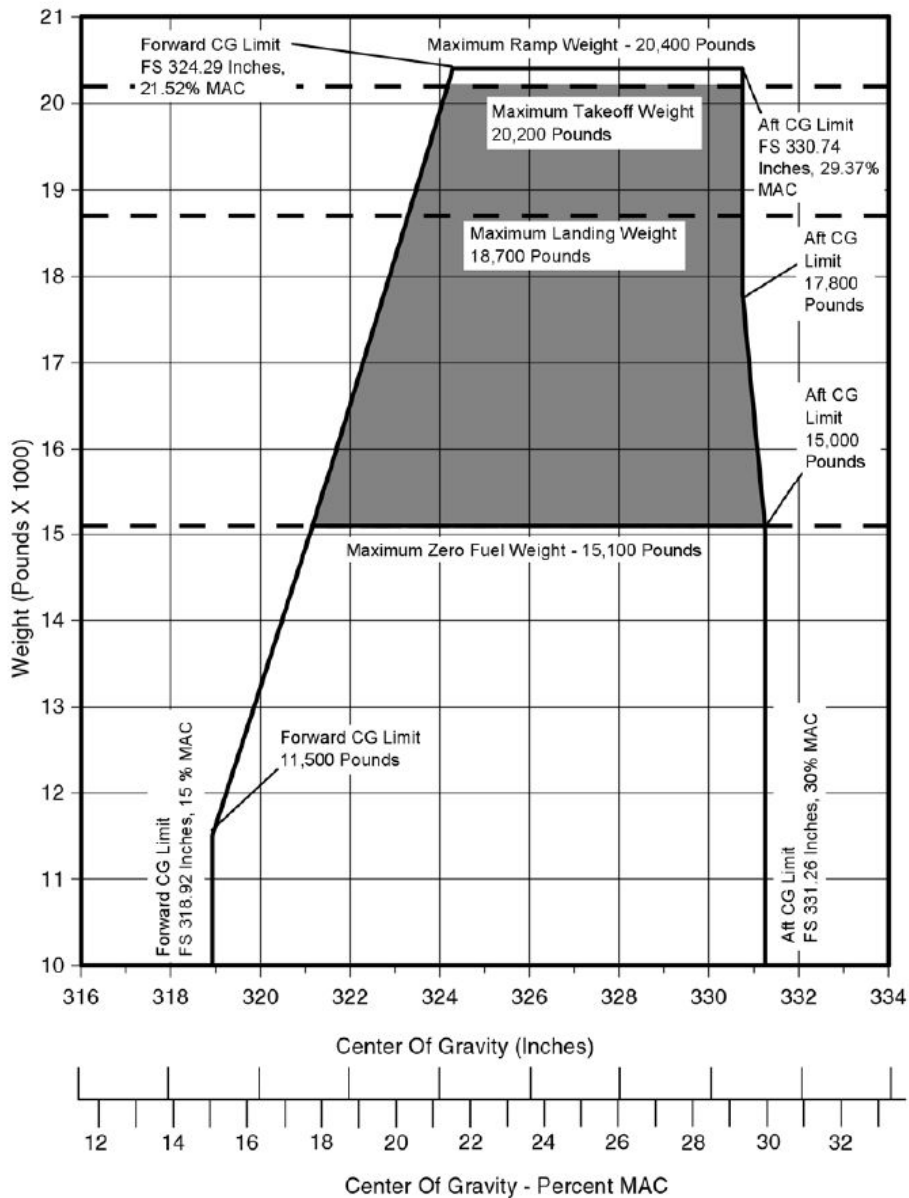
PASSENGER LIST

NAME (last)	LEG(S)					WEIGHT		Luggage Weight/size	
	1	2	3	4	5	1	2	1	2
	X	X					140		25
	X	X					190		25
	Pilot's Luggage:								40
	TOTAL WEIGHT:						330		90

Figure A3.2: Subset of N560AR loading records, documenting weights of passengers, passenger luggage, and crew luggage.

A72870

CENTER-OF-GRAVITY LIMITS ENVELOPE GRAPH



FORM NUMBER 2306, 30 May 2008

Figure 2-110-1

2-110-2

U.S.

Configuration AA

FAA APPROVED
56XFMB-02

Figure A3.3: Cessna 560XL weight and balance envelope.

*C.G. Range
(Landing Gear Extended) S/N 560-5001 thru 560-5500

Forward Limits: Linear variation from 324.18 in. aft of datum (21.39% MAC) at 20,200 lb. to 318.92 in. aft of datum (15.00 % MAC) at 11,500 lb.

Aft Limits: 331.26 in. aft of datum (30.0% MAC) from 15,000 lb. thru 11,500 lb.
Linear variation from 330.74 in. aft of datum (29.37% MAC) at 17,800 lb. to 331.26 in. aft of datum (30.0% MAC) at 15,000 lb.
330.74 in. aft of datum (29.37% MAC) from 17,800 lb. thru 20,200 lb.
*See NOTE 32.

C.G. Range
(Landing Gear Extended) S/N 560-5501 thru 560-6000

Forward Limits: Linear variation from 324.29 in. aft of datum (21.52% MAC) at 20,400 lb. to 318.92 in. aft of datum (15.00 % MAC) at 11,500 lb.

Aft Limits: 331.26 in. aft of datum (30.0% MAC) from 15,000 lb. thru 11,500 lb.
Linear variation from 331.26 in. aft of datum (30.00% MAC) at 15,000 lb. to 330.74 in. aft of datum (29.37% MAC) at 17,800 lb.
330.74 in. aft of datum (29.37% MAC) from 17,800 lb. thru 20,400 lb.

Rev. 73

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A22CE

VII. Model 560XL (cont'd)

C.G. Range
(Landing Gear Extended) S/N 560-6001 and on

Forward Limits: Linear variation from 324.29 in. aft of datum (21.52% MAC) at 20,400 lb. to 318.92 in. aft of datum (15.00 % MAC) at 11,500 lb.

Aft Limits: 331.26 in. aft of datum (30.0% MAC) from 15,000 lb. thru 11,500 lb.
Linear variation from 331.26 in. aft of datum (30.00% MAC) at 15,000 lb. to 330.74 in. aft of datum (29.37% MAC) at 17,800 lb.
330.74 in. aft of datum (29.37% MAC) from 17,800 lb. thru 20,400 lb.

Figure A3.4: Cessna 560XL weight and balance envelope documented by FAA Type Certificate Data Sheet.

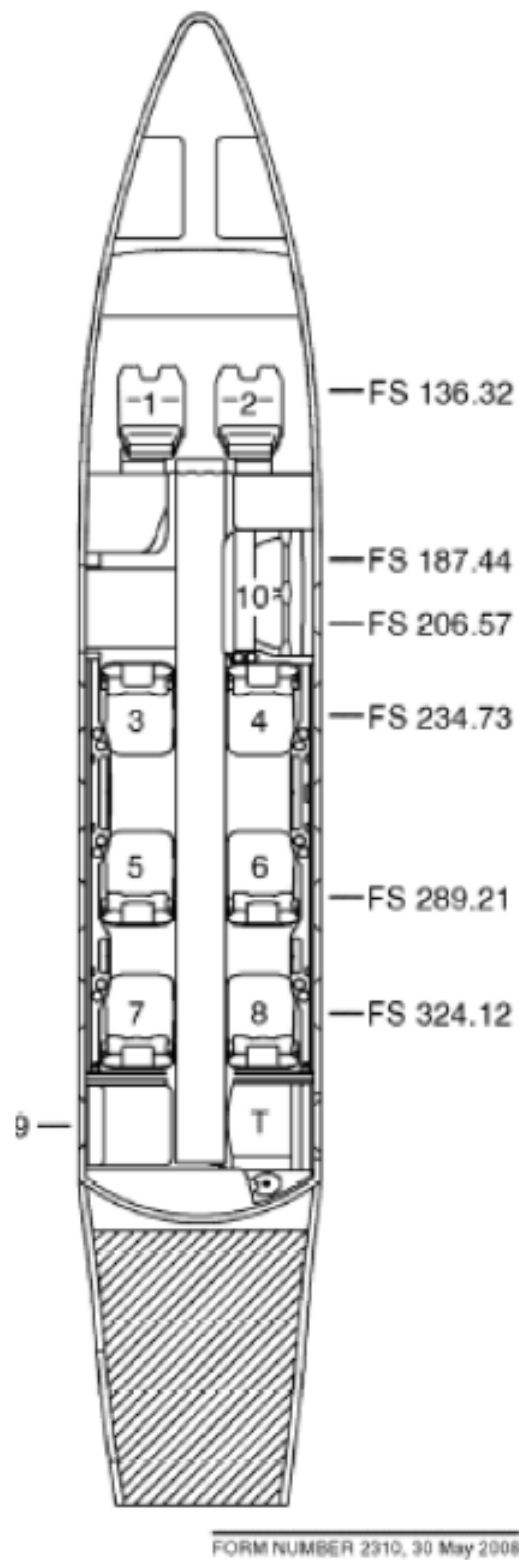
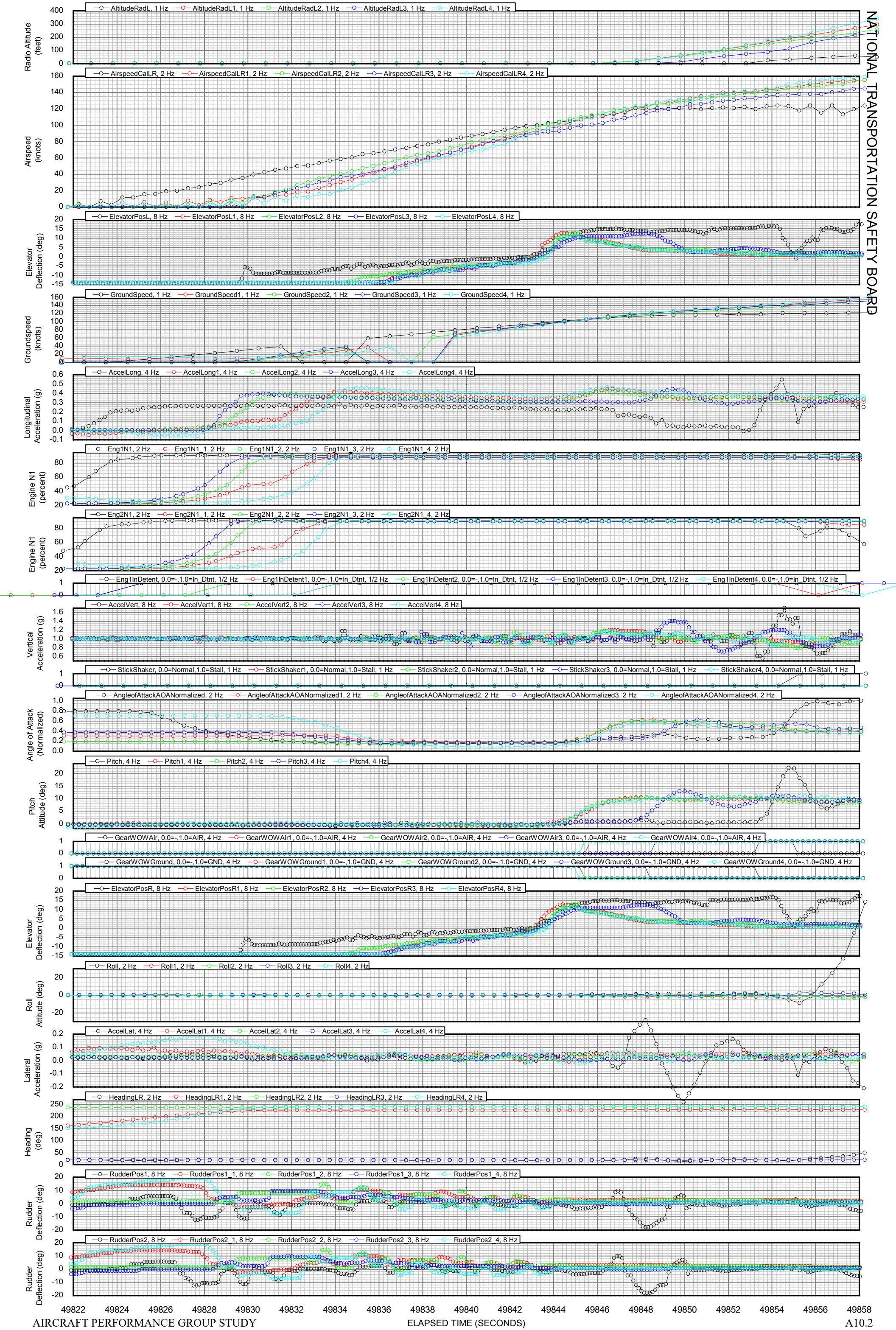


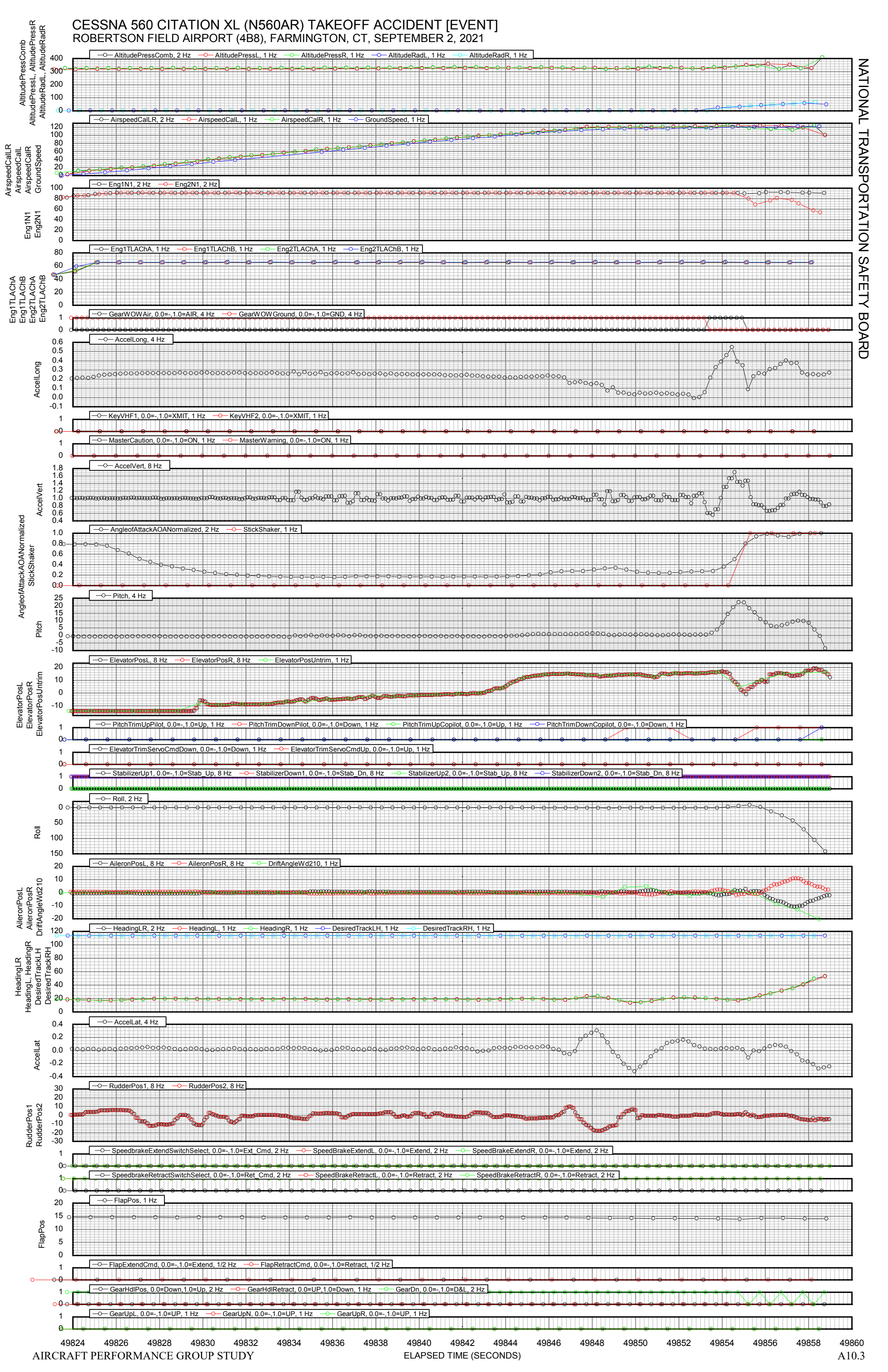
Figure A3.5: N560AR seating configuration.

ATTACHMENT 10: FLIGHT DATA RECORDER (FDR) DATA

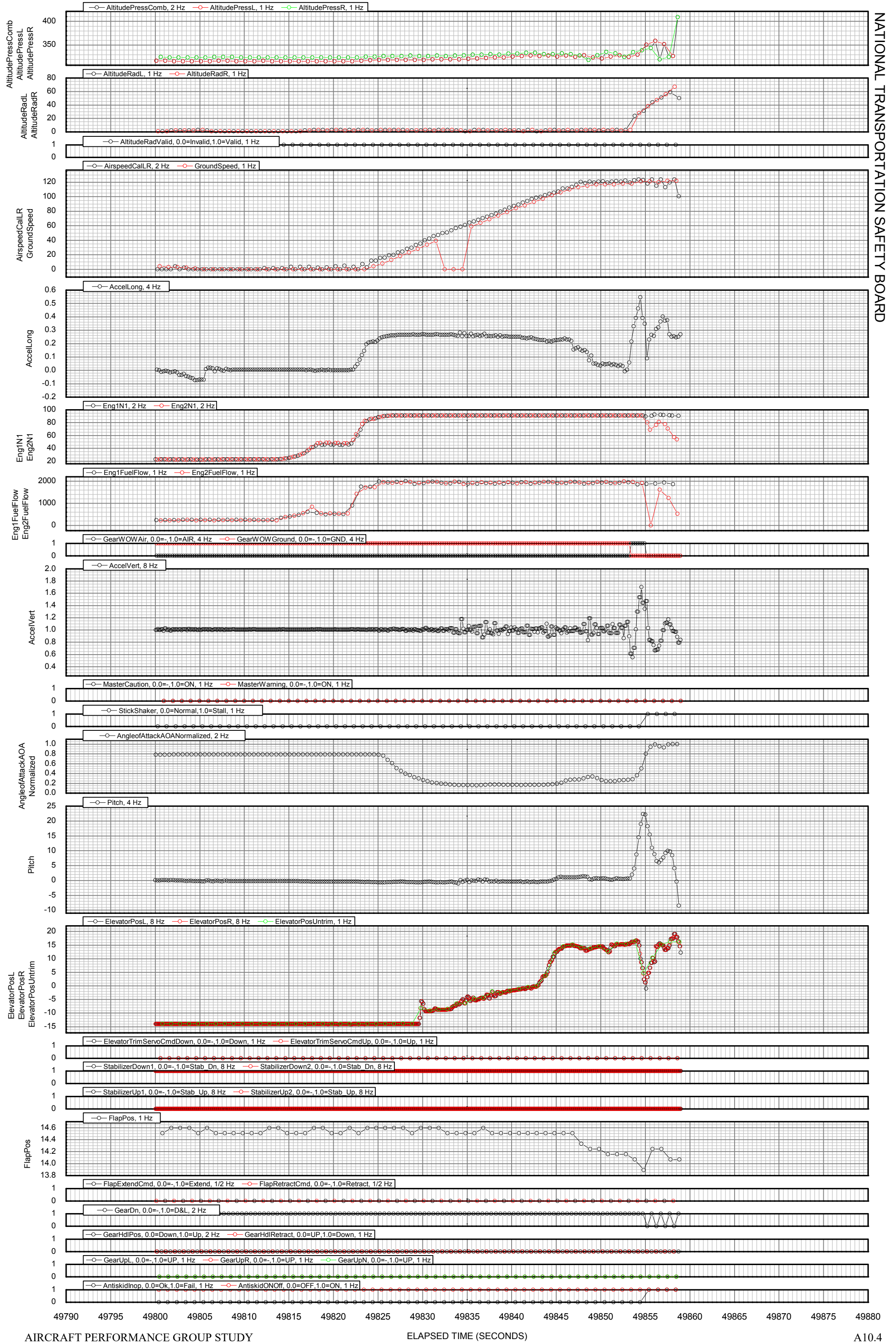
CESSNA 560 CITATION XL (N560AR) TAKEOFF ACCIDENT [COMPARISON OF ACCIDENT, T-1, T-2, T-3, T-4]
ROBERTSON FIELD AIRPORT (4B8), FARMINGTON, CT, SEPTEMBER 2, 2021



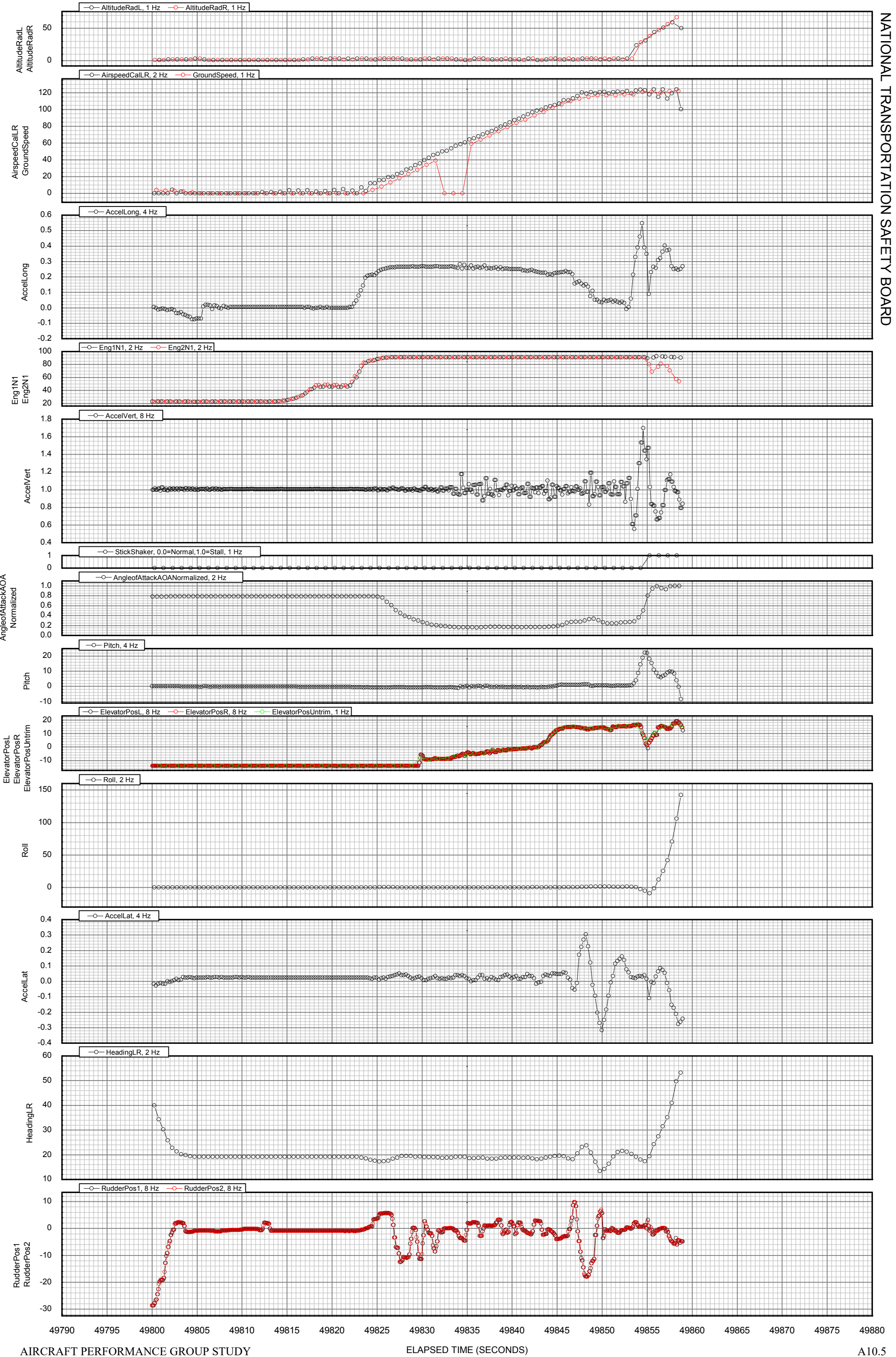
CESSNA 560 CITATION XL (N560AR) TAKEOFF ACCIDENT [EVENT]
ROBERTSON FIELD AIRPORT (4B8), FARMINGTON, CT, SEPTEMBER 2, 2021



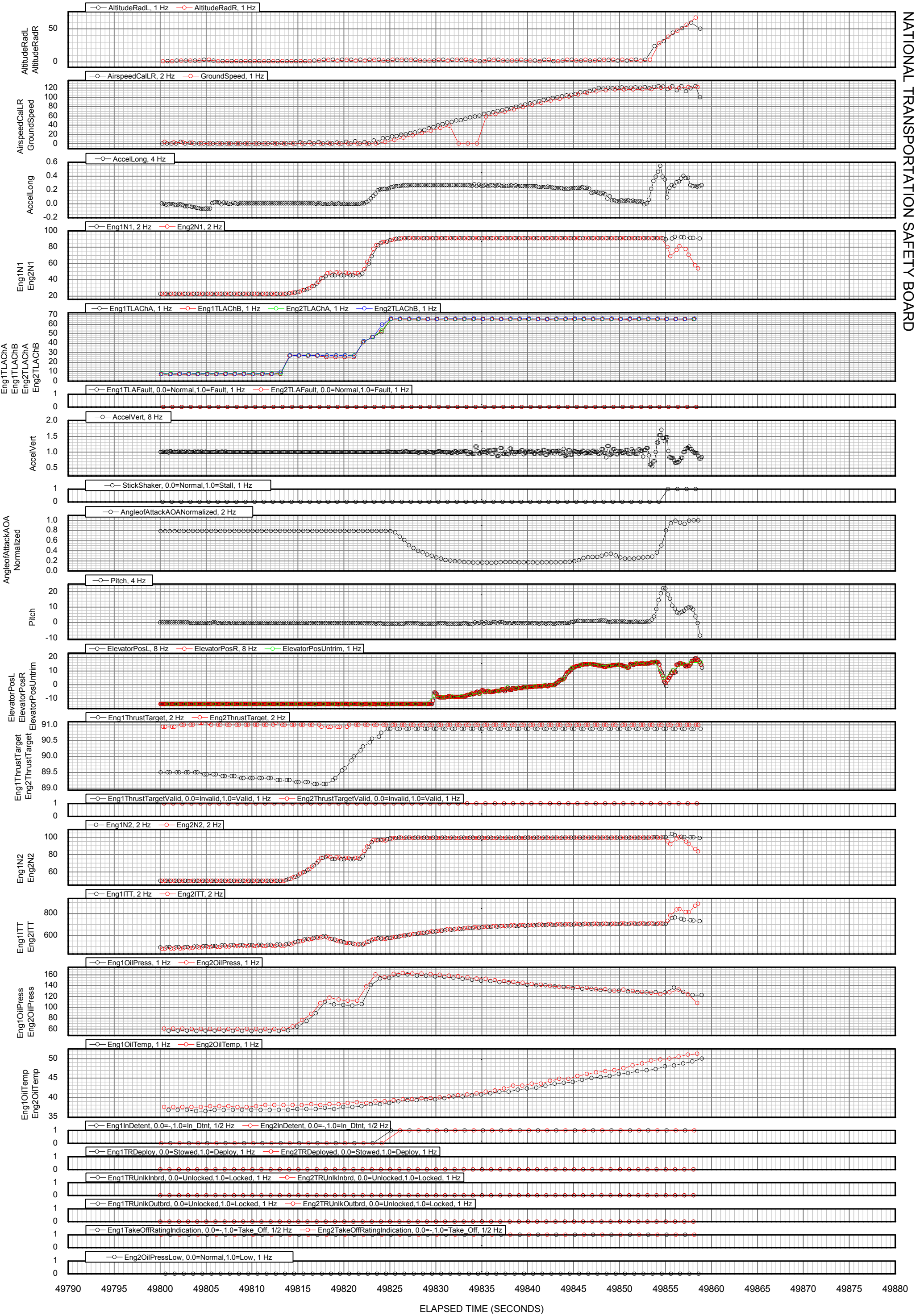
CESSNA CITATION 560XL (N560AR) TAKEOFF ACCIDENT, ROBERTSON FIELD AIRPORT (4B8) [LONGITUDINAL]
FARMINGTON, CT, SEPTEMBER 2, 2021



CESSNA CITATION 560XL (N560AR) TAKEOFF ACCIDENT, ROBERTSON FIELD AIRPORT (4B8) [LATERAL-DIRECTIONAL]
FARMINGTON, CT, SEPTEMBER 2, 2021

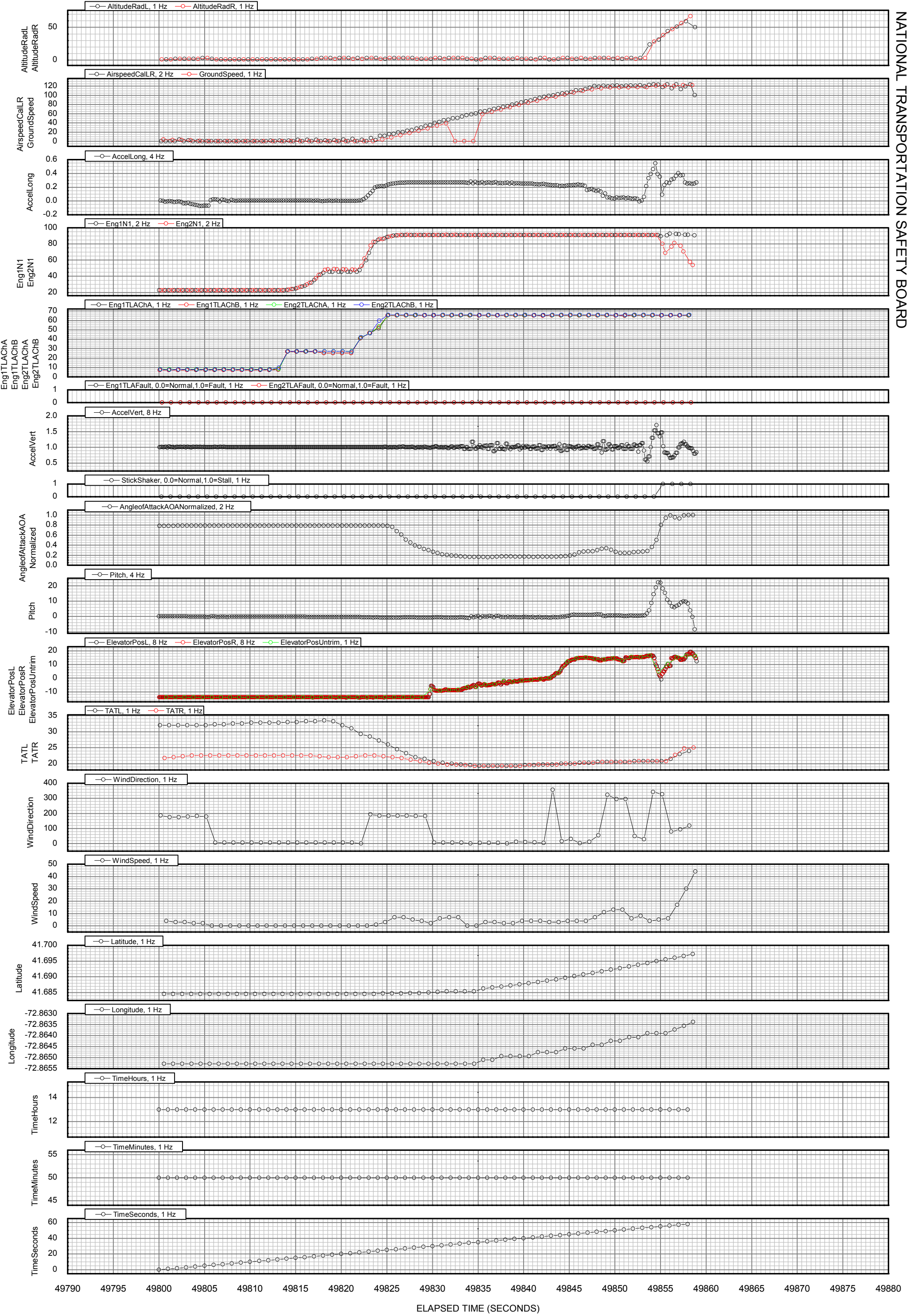


CESSNA CITATION 560XL (N560AR) TAKEOFF ACCIDENT, ROBERTSON FIELD AIRPORT (4B8) [ENGINE]
FARMINGTON, CT, SEPTEMBER 2, 2021



CESSNA CITATION 560XL (N560AR) TAKEOFF ACCIDENT, ROBERTSON FIELD AIRPORT (4B8) [OTHER]
FARMINGTON, CT, SEPTEMBER 2, 2021

NATIONAL TRANSPORTATION SAFETY BOARD



XLS+ FDR PARAMETER LIST (FK634Y)

FAR 121	Parameters
1	Hours (UTC)
1	Minutes (UTC)
1	Seconds (UTC)
2	Pressure Altitude
3	Calibrated Airspeed
4	Magnetic Heading
5	Normal Acceleration
6	Pitch Attitude (pitch angle)
7	Roll Attitude (roll angle)
8	Pilot Push to Talk
8	Pilot Comm 1 Selected
8	Pilot Comm 2 Selected
8	Pilot HF 1 Selected
8	Pilot PA Transmitter Selected
8	Copilot Push to Talk
8	Copilot Comm 1 Selected
8	Copilot Comm 2 Selected
8	Copilot HF 1 Selected
8	Copilot PA Transmitter Selected
9	N1/Left Engine (Display)
9	N1/Right Engine (Display)
10	Autopilot Engagement Status
10	Autopilot Disengage Warning
10	Yaw Damper Engagement Status
10	Autopilot Disengage Warning
11	Longitudinal Acceleration
15	Elevator Surface Position
15	Stab Up
15	Stab Down
16	Right Aileron Surface Position
16	Aileron Mistrim Caution
17	Rudder Surface Position
18	Lateral Acceleration
19	Pitch Trim Surface Position
20	Flap Position
22	Left T/R Deployed
22	Left T/R Unlocked Inboard
22	Left T/R Unlocked Outboard
22	Right T/R Deployed
22	Right T/R Unlocked Inboard
22	Right T/R Unlocked Outboard
23	Left Hand Extend
23	Left Hand Retract
23	Right Hand Extend
23	Right Hand Retract
24	Total Air Temperature

25	Altitude Arm
25	Altitude Capture
25	Preselect Altitude Abort
25	Local ADC Reference Control Inhibit
25	Descend
25	Altitude hold
25	Climb
25	Vertical Speed Hold
25	Airspeed Reference Type
25	Active Altitude Type
25	VNAV Glidepath Arm
25	VNAV Glidepath Capture
25	VNAV Arm
25	VNAV Path Capture
25	Roll
25	Pitch
25	Lateral go-around
25	Vertical go-around
25	Approach Arm
25	Approach Capture
25	Half Bank
25	Transfer
25	Heading Hold
25	Heading/Track Select
25	Dead Reckoning
25	Back course
25	VNAV Warn
25	Preselect Source Active
25	FD Synchronize
25	Level Change
25	NAV Arm
25	NAV Capture
25	Glideslope arm
25	Glideslope capture
25	Overspeed
25	VNAV Arm Mode
25	Attitude Source Select - Pilot
25	Attitude Source Select - Copilot
25	Heading Source Select - Pilot
25	Heading Source Select- Copilot
26	Radio Altitude
26	Radio Altitude Valid
27	Localizer (lateral) Deviation
27	Localizer (lateral) Deviation Status
28	Glide slope (vertical) Deviation
28	Glide slope (vertical) Deviation Status
30	Master Warning Active
30	Master Caution Active
30	Battery Over Temperature (145 Deg < Temp < 160 Deg)
30	Battery Over Temperature Left (Temp <160 Deg)
30	Engine Fire Right
30	Engine Fire Left

30	APU Fire
30	Baggage Fire
30	Lavatory Fire
30	No Takeoff
31	GOG (Ground on Ground)
31	GIA (Ground in Air)
32	AOA: #1 Left
32	AOA: #1 Left Status
32	AOA: #2 Right
32	AOA: #2 Right Status
33	LH Engine Hydraulic Pump Low
33	RH Engine Hydraulic Pump Low
33	Low Hydraulic Fluid Level
33	Hydraulic Pressure
34	Ground Speed
34	Ground Speed Valid
35	Terrain Display Valid
35	Terrain Awareness & TCF Inhibited
35	Obstacle Awareness Caution
35	Obstacle Awareness Warning
35	Steep Approach Activated
35	Glideslope Cancel
35	GPWS Alert
35	GPWS Warning
35	GPWS INOP
35	Audio ON
35	Callouts INOP
35	Terrain Awareness Warning
35	Terrain Awareness Caution
35	Terrain Awareness INOP
35	Terrain Auto Pop-up - Pilot
35	Terrain Auto Pop-up - Copilot
35	External Fault
35	Computer Fail
35	Terrain Awareness Not Available
36	Landing gear down
36	Landing gear up
36	Gear Handle Position
37	Drift angle
38	Wind Speed
38	Wind Direction
39	Latitude Position
39	Longitude Position
40	Stick shaker/pusher activated
41	Windshear Detection Caution
41	Windshear Detection Warning
41	Windshear INOP
42	Left Throttle Lever Angle
42	Right Throttle Lever Angle
43	N2 Engine 1
43	N2 Engine 2
43	Internal Turbine Temp Engine 1

43	Internal Turbine Temp Engine 2
43	Fuel Flow Engine 1
43	Fuel Flow Engine 2
43	Fadec Channel in Control
43	Ground Idle Indication
43	N1 SYNCH
43	N2 SYNCH
43	Take Off Rating Indication
43	Climb Indication
43	Cruise Indication
43	No Dispatch Indication
43	Anti-ice Idle Indication
43	Ignition On Indication
43	Fault Reset
43	Fast Idle Indication
43	LH Throttle Failure (TLA Fault)
43	RH Throttle Failure (TLA Fault)
43	LH Fuel Cut-off Lever Position/Engine Shutdown
43	RH Fuel Cut-off Lever Position/Engine Shutdown
43	LH FUEL QTY H
43	RH FUEL QTY H
44	Combined Control
44	Vertical Control
44	Up Advisory
44	Down Advisory
45	DME Distance 1
45	DME Distance 1 Status
45	DME Distance 2
45	DME Distance 2 Status
46	ADF 1 Frequency
46	ADF 2 Frequency
46	Nav Frequency Sel 1
46	Nav Frequency Sel 1 Status
46	Nav Frequency Sel 2
46	Nav Frequency Sel 2 Status
47	Selected Barometric Setting (Pilot)
47	Selected Barometric Setting (Co-Pilot)
48	Selected Altitude
49	Reference Airspeed
50	Reference Mach
51	Reference Vertical Speed
52	Selected Heading
53	Selected Course (Pilot)
55	LH PFD TCAS Overlay
55	LH PFD Radar Overlay
55	LH PFD Lightning Overlay
55	LH PFD Terrain Overlay
55	LH PFD Map Range
55	LH PFD TCAS Range
55	LH PFD Mode
55	RH PFD TCAS Overlay
55	RH PFD Radar Overlay

55	RH PFD Lightning Overlay
55	RH PFD Terrain Overlay
55	RH PFD Map Range
55	RH PFD TCAS Range
55	RH PFD Mode
56	LH MFD Map Range
56	LH MFD Mode
56	LH MFD TCAS Overlay
56	LH MFD Radar Overlay
56	LH MFD Lightning Overlay
56	LH MFD Terrain Overlay
56	LH MFD Geopolitical Overlay
56	LH MFD Airway Overlay
56	LH MFD Airspace Overlay
56	LH Graphical Weather Overlay
56	RH MFD Map Range
56	RH MFD Mode
56	RH MFD TCAS Overlay
56	RH MFD Radar Overlay
56	RH MFD Lightning Overlay
56	RH MFD Terrain Overlay
56	RH MFD Geopolitical Overlay
56	RH MFD Airway Overlay
56	RH MFD Airspace Overlay
56	RH Graphical Weather Overlay
57	Thrust Command Eng 1
57	Thrust Command Eng 2
58	Thrust Target Eng 1 (N1 Bug Rating)
58	Thrust Target Eng 2 (N1 Bug Rating)
58	Thrust Target Eng 1 (N1 Fan Speed)
58	Thrust Target Eng 2 (N1 Fan Speed)
60	Pilot Bearing Select Pointer #1
60	Copilot Bearing Select Pointer #2
60	Pilot Bearing Select Pointer #1
60	Copilot Bearing Select Pointer #2
60	Pilot Active NAV Source
60	Copilot Active NAV Source
61	Wing Inspection Lights
62	Engine Warning Vibration - Engine #1
62	Engine Warning Vibration - Engine #2
63	LH Engine Oil Temp
63	LH Engine MOT High Limit
63	LH Engine MOT Trans Limit
63	LH Engine MOT Low Trans Limit
63	LH Engine MOT Low Limit 2
63	LH Engine MOT Trans Limit Duration
63	LH Engine ITT Steady State Exceedence
63	LH Engine ITT Redline Exceedence Zone B
63	LH Engine ITT Redline Exceedence Zone C
63	RH Engine Oil Temp
63	RH Engine MOT High Limit
63	RH Engine MOT Trans Limit

63	RH Engine MOT Low Trans Limit
63	RH Engine MOT Low Limit 2
63	RH Engine MOT Trans Limit Duration
63	RH Engine ITT Steady State Exceedence
63	RH Engine ITT Redline Exceedence Zone B
63	RH Engine ITT Redline Exceedence Zone C
64	LH Engine Oil Pressure
64	LH Engine MOP High Limit
64	LH Engine MOP Trans Limit
64	LH Engine MOP Trans Limit Dur
64	LH Engine MOP Low Limit 2
64	LH Engine MOP Low Trans
64	RH Engine Oil Pressure
64	RH Engine MOP High Limit
64	RH Engine MOP Trans Limit
64	RH Engine MOP Trans Limit Dur
64	RH Engine MOP Low Limit 2
64	RH Engine MOP Low Trans
65	LH Engine N1 Redline Exceedance
65	RH Engine N1 Redline Exceedance
65	LH Engine N2 Redline Exceedance
65	RH Engine N2 Redline Exceedance
68	Low Brake Pressure
68	Antiskid ON/OFF
68	Antiskid Inop
70	Sidesliper Angle (Yaw Rate)
72	LH Engine Anti-Ice/TT0 Heater ON
72	LH Wing Anti-Ice ON
72	LH Wing Overheat
72	LH Tail De-ice Pressure
72	LH Tail De-ice Fail
72	RH Engine Anti-Ice/TT0 Heater ON
72	RH Wing Anti-Ice ON
72	RH Wing Overheat
72	RH Tail De-ice Pressure
72	RH Tail De-ice Fail
72	Engine TT0
72	Pitot & Static Heaters Switch
72	LH P/S Heater Fail
72	RH P/S Heater Fail
72	Standby P/S Heater Fail
72	Tail De-ice Switch Manual
72	Tail De-ice Switch Auto
72	Tail De-ice Switch Off
72	LH W/S Anti-Ice ON
72	RH W/S Anti-Ice ON
72	LH W/S O'Heat
72	RH W/S O'Heat
72	LH W/S Fail
72	RH W/S Fail
75	LH Generator Bus Voltage
75	RH Generator Bus Voltage

76	APU Bleed Valve Position
78	Hi Cabin Alt
78	Emergency Pressure
78	Cabin Altitude > 14500'
79	LH FADEC Channel A in Control
79	RH FADEC Channel B in Control
79	LH FADEC Channel A in Control
79	RH FADEC Channel B in Control
82	Pilot Primary Trim UP
82	Pilot Primary Trim Down
82	Copilot Primary Trim Up
82	Copilot Primary Trim Down
82	Elevator Trim Servo UP
82	Elevator Trim Servo Down
85	Flap Handle Position
85	Flap Extend Command
85	Flap Retract Command
*	Aileron Rigging Completed
*	Elevator Rigging Completed
*	Rudder Rigging Completed
*	Flap Rigging Completed
*	Pitch Trim Rigging Completed

NOTE * Additional Parameters Not Required By Regulations

ATTACHMENT 11: CESSNA 560XL TAKEOFF PERFORMANCE

Based on Airplane Flight Manual (AFM)

dry runway, anti-ice off, zero gradient, zero wind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20000	0	15	3510	0	99	106	117	
20000	0	19	3550	0	99	106	117	
20000	0	20	3560	0	99	106	117	
20000	350	19	3603	0	99.0	106.0	117.0	
dry runway, anti-ice off, zero gradient, zero wind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20000	1000	15	3660	0	99	106	117	
20000	1000	19	3700	0	99	106	117	
20000	1000	20	3710	0	99	106	117	
gradient adjustment for this condition is 200 feet per 0.5% or 40 feet per 0.1%								
Takeoff distance = 3603 + 0.35/0.50*200 = 3743 feet 0 kt hw								
for dry runway, anti-ice off, +0.35% gradient, zero wind								
					V1	VR	V2	
					99.0	106.0	117.0	

dry runway, anti-ice off, zero gradient, zero wind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20200	0	15	3560	0	100	107	118	
20200	0	19	3608	0	100	107	118	
20200	0	20	3620	0	100	107	118	
20200	350	19	3661	0	100.0	107.0	118.0	
dry runway, anti-ice off, zero gradient, zero wind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20200	1000	15	3720	0	100	107	118	
20200	1000	19	3760	0	100	107	118	
20200	1000	20	3770	0	100	107	118	
gradient adjustment for this condition is 200 feet per 0.5% or 40 feet per 0.1%								
Takeoff distance = 3661 - 0.35/0.50*(200+250)/2 = 3819 feet 0 kt hw								
for dry runway, anti-ice off, +0.35% gradient, zero wind								
					V1	VR	V2	
					100.0	107.0	118.0	

Interpolated Cessna Citation 560XLS+ AFM results as a function of weight, altitude, temperature, wind, and slope

dry runway, anti-ice off, zero gradient, 10-knot headwind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20000	0	15	3300	0	99	106	117	
20000	0	19	3340	0	99	106	117	
20000	0	20	3350	0	99	106	117	
20000	350	19	3393	0	99.4	106.0	117.0	
dry runway, anti-ice off, zero gradient, 10-knot headwind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20000	1000	15	3450	0	100	106	117	
20000	1000	19	3490	0	100	106	117	
20000	1000	20	3500	0	100	106	117	
gradient adjustment for this condition is 200 feet per 0.5% or 40 feet per 0.1%								
Takeoff distance = 3393 + 0.35/0.50*200 = 3533 feet 10 knot hw								
for dry runway, anti-ice off, +0.35% gradient, 10-knot headwind								
					V1	VR	V2	
					99.4	106.0	117.0	

	132	
required headwind for TODA	3665 feet	3.7 kt
	80	
required TOFL for 6.2-knot hw	3613 feet	6.2 kt

dry runway, anti-ice off, zero gradient, 10-knot headwind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20200	0	15	3360	0	100	107	118	
20200	0	19	3400	0	100	107	118	
20200	0	20	3410	0	100	107	118	
20200	350	19	3452	0	100.0	107.0	118.0	
dry runway, anti-ice off, zero gradient, 10-knot headwind								
weight	altitude	temp	distance, ft	gradient	V1	VR	V2	
20200	1000	15	3500	0	100	107	118	
20200	1000	19	3548	0	100	107	118	
20200	1000	20	3560	0	100	107	118	
gradient adjustment for this condition is 200 feet per 0.5% or 40 feet per 0.1%								
Takeoff distance = 3452 + 0.35/0.50*200 = 3592 feet 10 knot hw								
for dry runway, anti-ice off, +0.35% gradient, 10-knot headwind								
					V1	VR	V2	
					100.0	107.0	118.0	

	73	
required headwind for TODA	3665 feet	6.8 kt
	86	
required TOFL for 6.2-knot hw	3678 feet	6.2 kt

ATTACHMENT 12: N560AR ACCIDENT FLIGHT RECONSTRUCTION

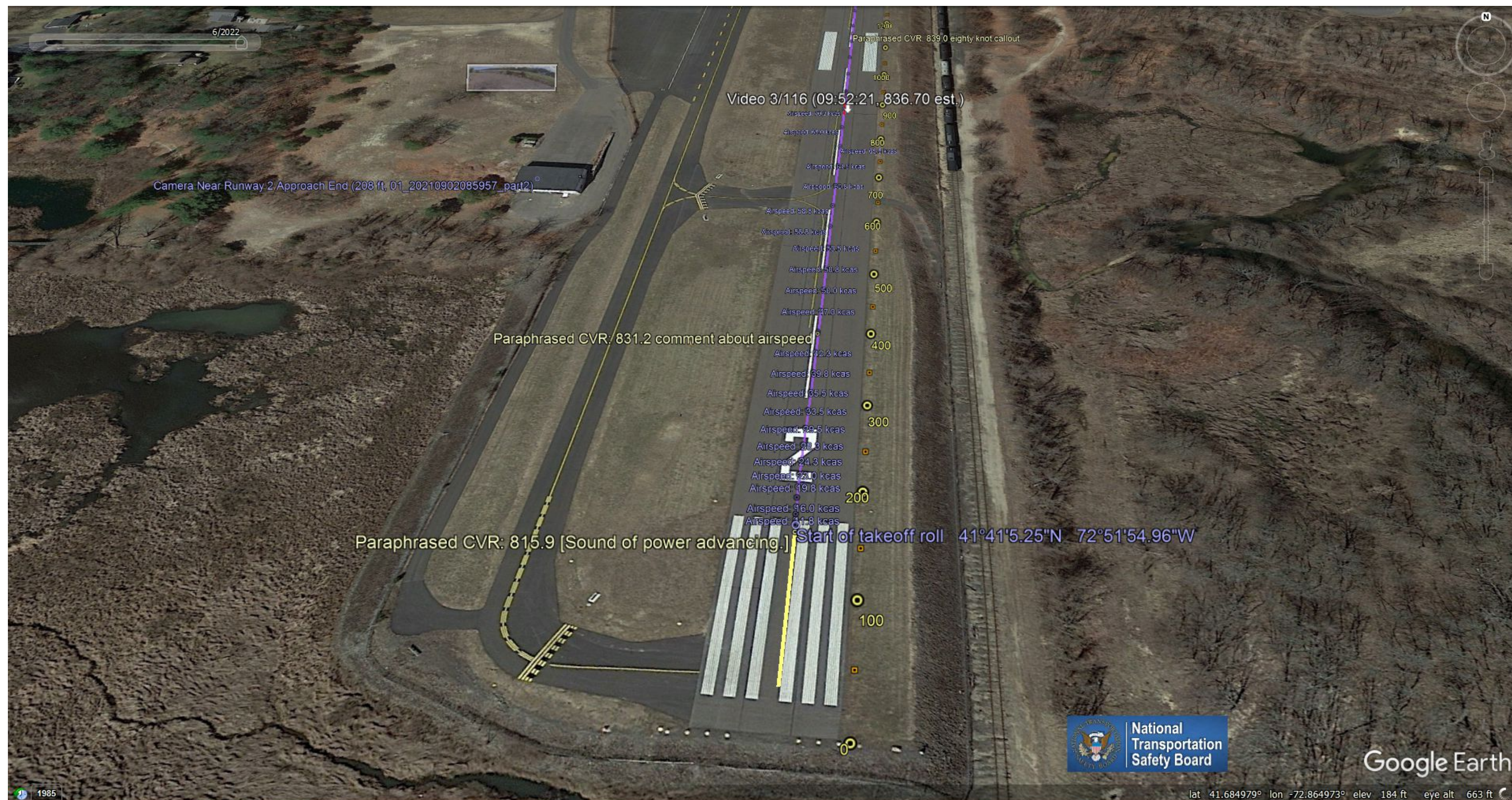


Figure A12.1: N560AR accident flight reconstruction looking toward the departure end of runway 2, showing 0 to 1,000 feet along the runway. Ground track reconstruction is based on paraphrased CVR, FDR, video, and runway witness mark evidence. Due north and aircraft direction of travel are toward the top of the page.

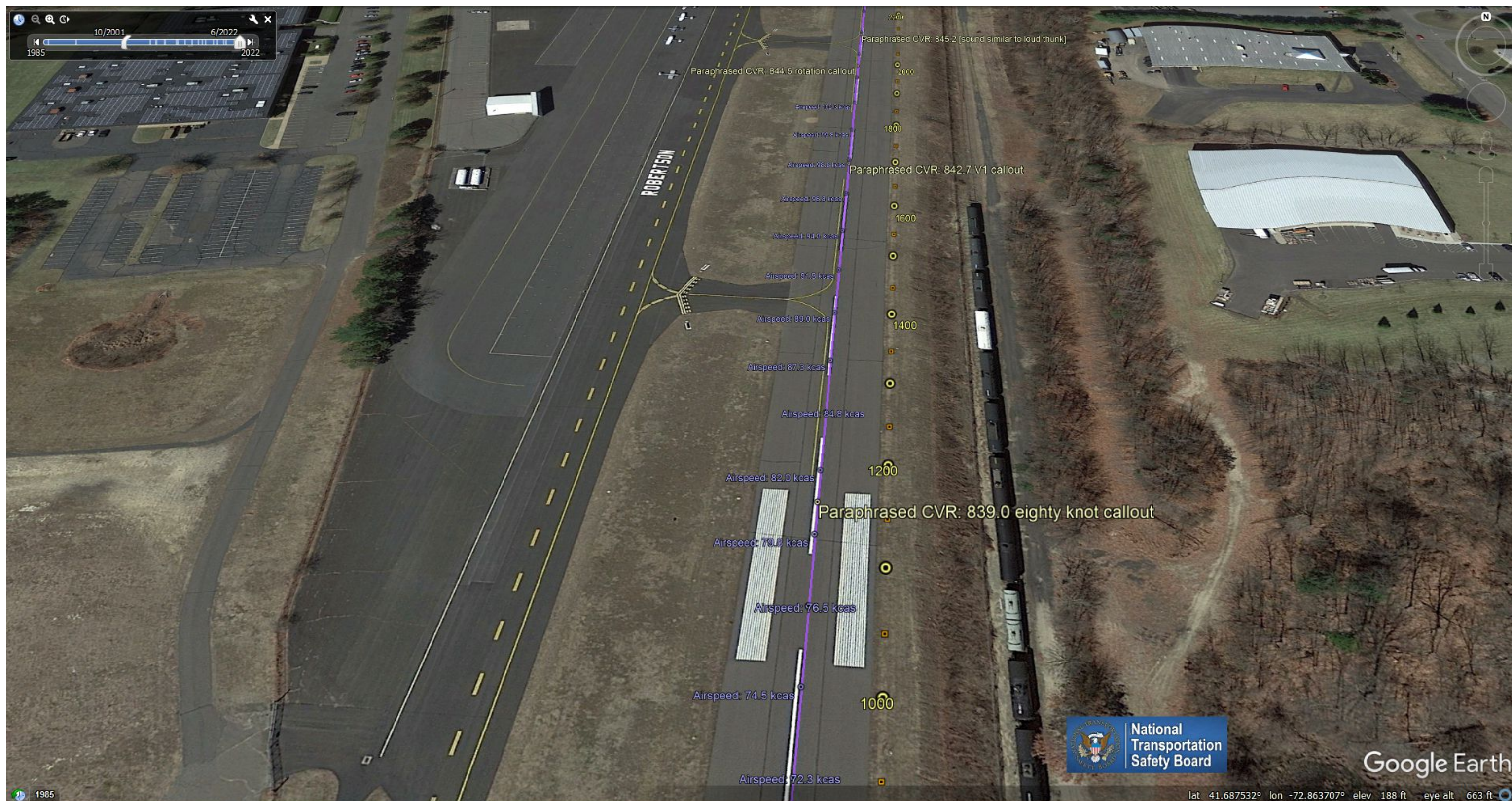


Figure A12.2: N560AR accident flight reconstruction looking toward the departure end of runway 2, showing 1,000 to 2,000 feet along the runway. Ground track reconstruction is based on paraphrased CVR, FDR, video, and runway witness mark evidence. Due north and aircraft direction of travel are toward the top of the page.

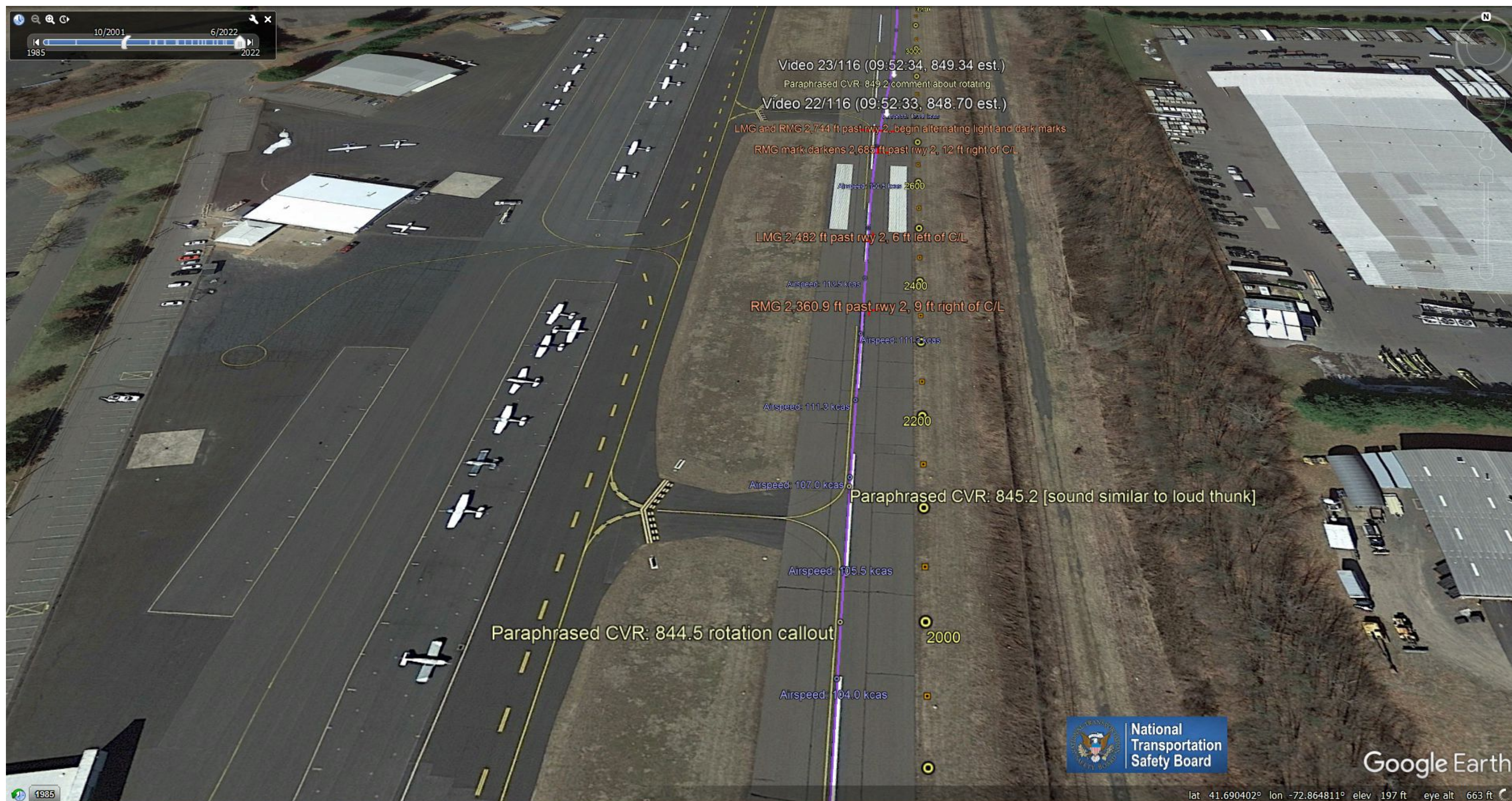


Figure A12.3: N560AR accident flight reconstruction looking toward the departure end of runway 2, showing 2,000 to 3,000 feet along the runway. Ground track reconstruction is based on paraphrased CVR, FDR, video, and runway witness mark evidence. Due north and aircraft direction of travel are toward the top of the page.

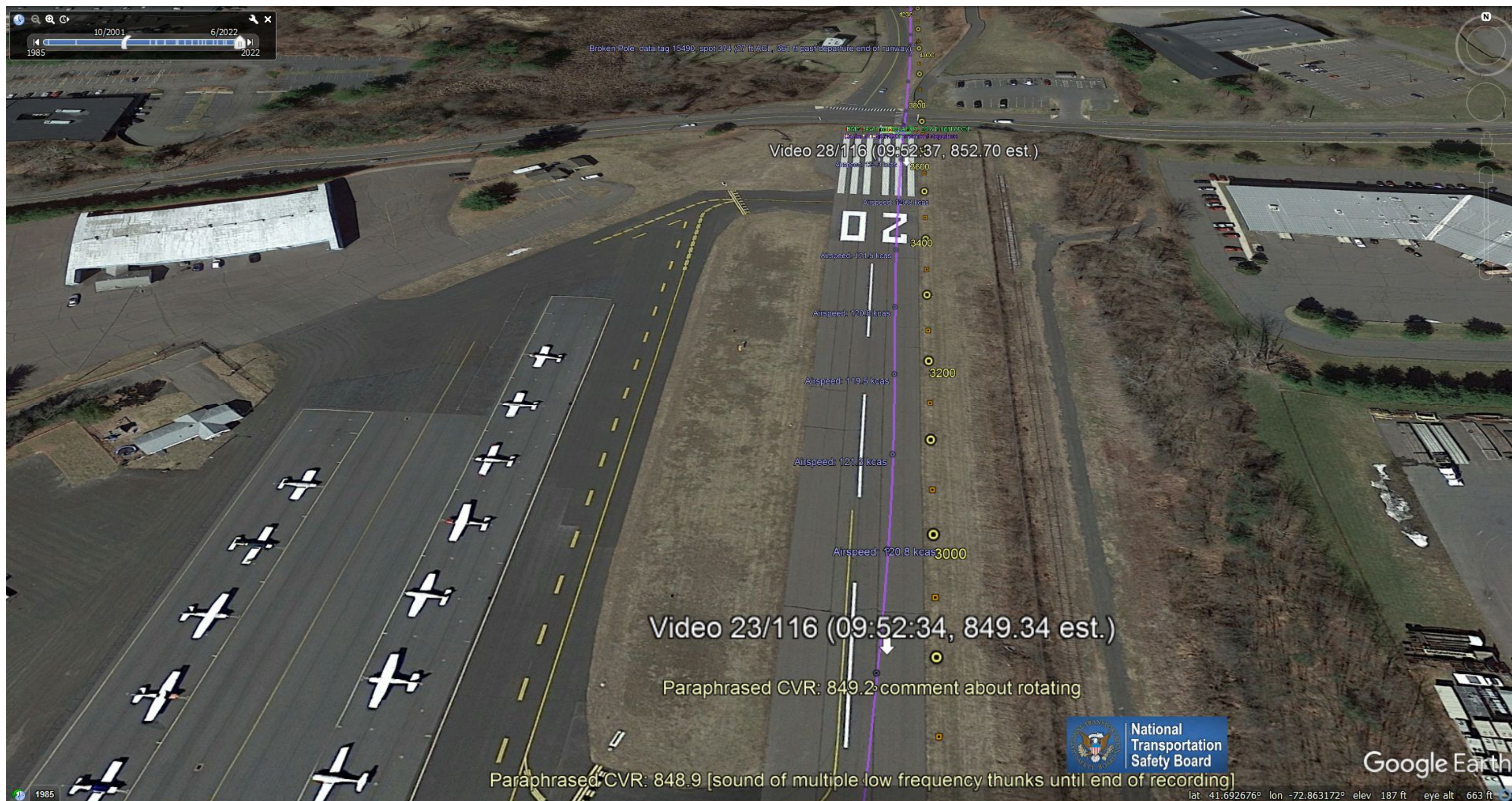


Figure A12.4: N560AR accident flight reconstruction looking toward the departure end of runway 2, showing 3,000 to 4,000 feet along the runway and extended runway centerline. Ground track reconstruction is based on paraphrased CVR, FDR, video, and runway witness mark evidence. Due north and aircraft direction of travel are toward the top of the page.

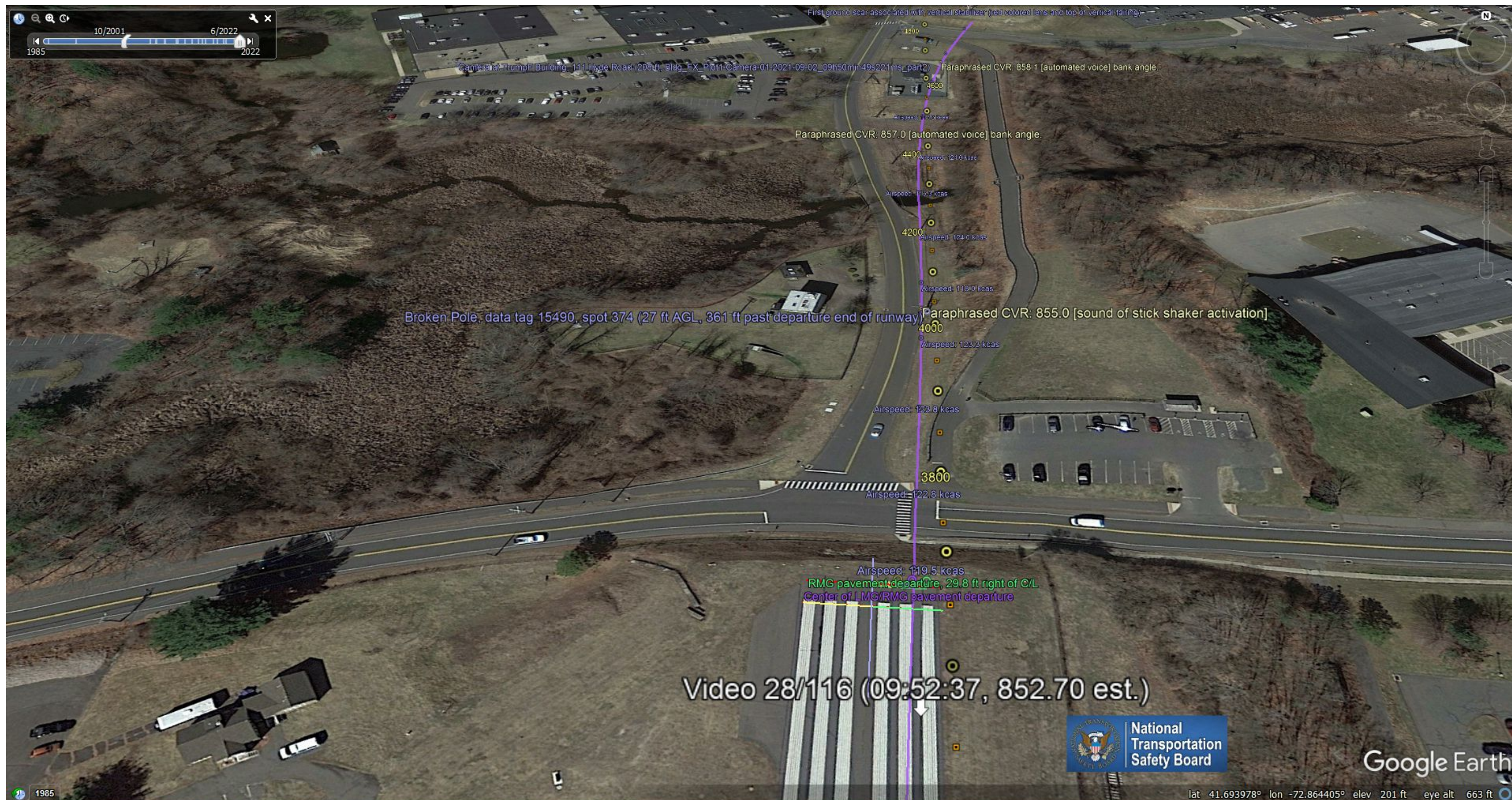


Figure A12.5: N560AR accident flight reconstruction looking toward the departure end of runway 2, showing 3,800 to 4,500 feet along the extended runway centerline. Ground track reconstruction is based on paraphrased CVR, FDR, video, and runway witness mark evidence. Due north and aircraft direction of travel are toward the top of the page.

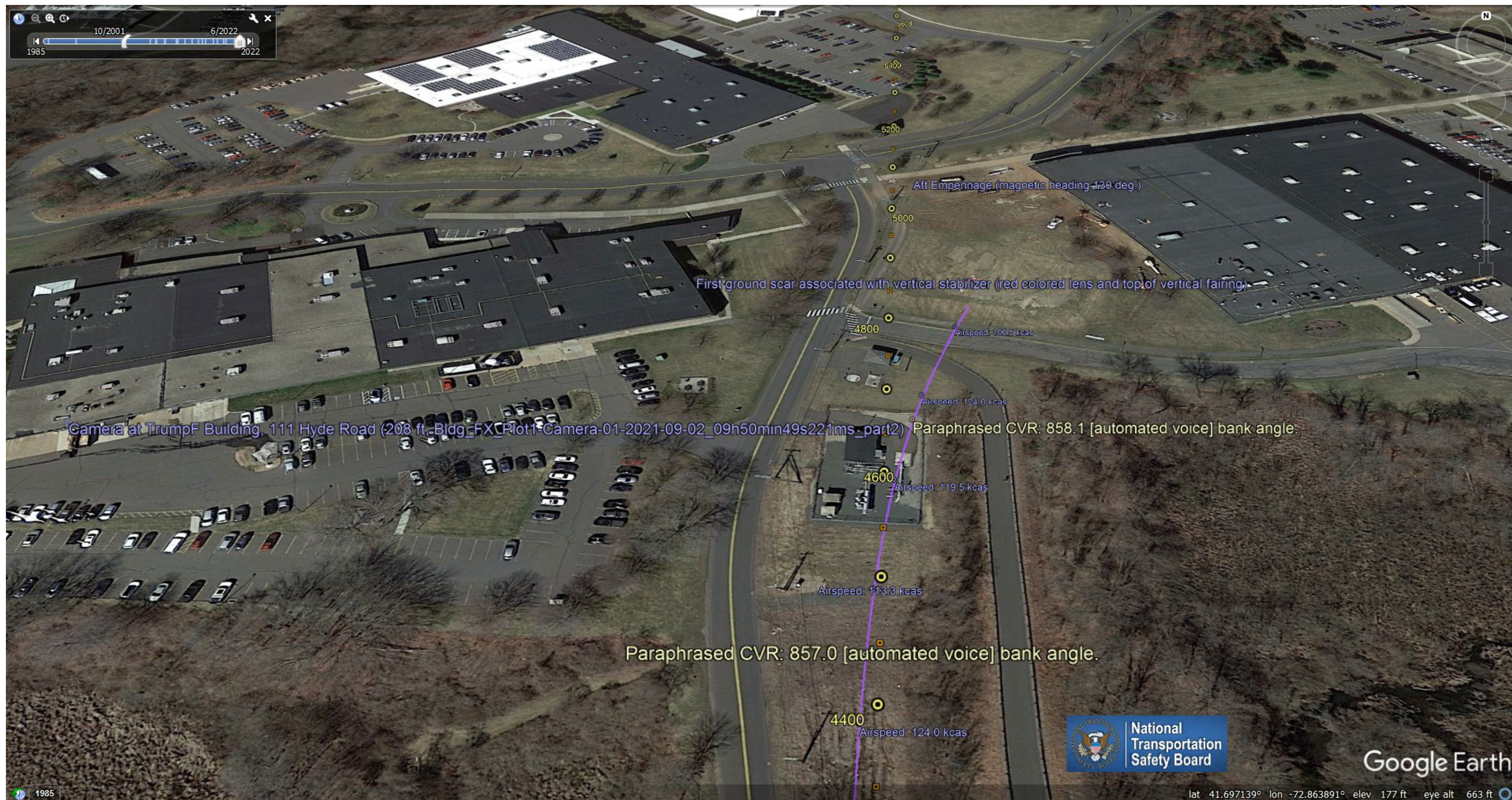


Figure A12.6: N560AR accident flight reconstruction looking toward the departure end of runway 2, showing 4,400 to 5,000 feet along the extended runway centerline. Ground track reconstruction is based on paraphrased CVR, FDR, video, and runway witness mark evidence. Due north and aircraft direction of travel are toward the top of the page.