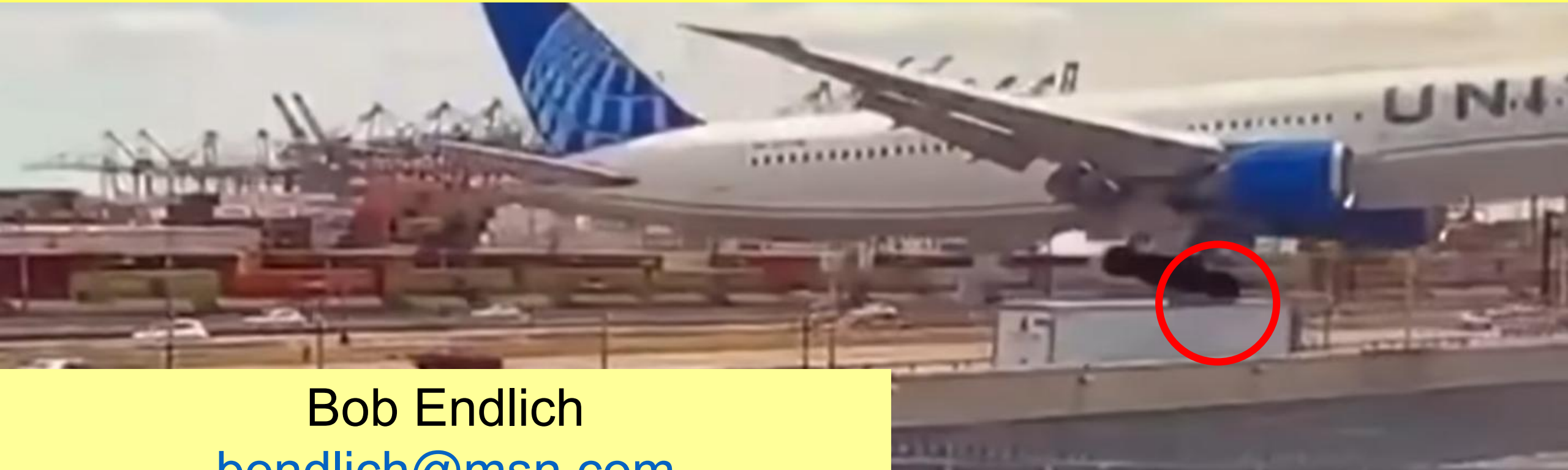


A Likely Weather Factor in the United Flight 169 Accident, Newark Liberty International Airport, 3 May 2026



Bob Endlich

bendlich@msn.com

Cruces Atmospheric Sciences Forum
16 May 2026

Outline

Bottom Line Up Front.

My Sailplane Experience

Around Newark Airport

The Accident, 3 May 2026

The RNAV Approach

PAPI Lights

The Weather

Blue Holes seem a strong probability.

Bottom Line Up Front:

I contend the reason why the Pilot Flying United Flight 169 from Venice, Italy, to Newark Liberty International Airport, on landing, 3 May 2026, accidentally hit a light pole and grazed a semi-trailer on the New Jersey Turnpike (I-95), is because Flight 169 encountered exceptionally strong sinking air while crossing from Newark Bay to solid land, final approach, Runway 29, Newark Airport.

Among contributing factors in this accident: combination of short Runway 29 length, only 6501 ft long, and subsequent pressure to land “on the numbers” of Runway 29, the overwater path of the RNAV circling right-hand approach, abnormal position of the PAPI lights, located the right side of the runway, strong convective overturning of the air with strong sinking air, as the aircraft entered the dry airmass over solid land, and lack of sufficient information to warn of strong downdrafts, a few moments and a few thousands of feet short of Newark’s Runway 29 touchdown point.

My experience as a sailplane pilot: 500 hours and 500 flights

... reasons why I think United Flight 169 encountered exceptionally strong sinking air on final approach at Newark.

Where	When	Times landed off-field
Albuquerque Soaring Club	1970-74	3 Times
Tucson Soaring Club	1976-79	0 Times
White Sands Soaring Ass'n	1984-2001	2 Times



Here is a shot of the White Sands Soaring Association's Blanik and me, taken in early February 1994, at Alamogordo-White Sands Regional Airport. I probably have over 200 hours in this type sailplane. Tucson Soaring Club also had a Blanik I flew from Ryan Field, while stationed there.

Reasons Why Sailplanes are able to make multi-hour and interstate soaring flights:

Ability of the aircraft and the pilot to find and use sources of lift for gaining altitude and sustained unpowered flight using natural sources of lift:

- | | |
|---------------|--|
| Thermal lift | By far the most frequent source of lift, usually accompanied by cumulus clouds in the planetary boundary layer.
I got my 300 km Gold Distance flight from Moriarty, NM, to Plains, Yoakum County, TX, using thermals. |
| Slope Soaring | For me, the front side of the Sacramento Mountains just east of Alamogordo. |
| Mountain Wave | For me, the mountain wave in the lee of the Sandia Mountains East of Albuquerque (Gold Altitude, FL 230, Sandia Mts Wave) and in the lee of the Quinlan Mountains, the range well west of Tucson, where Kitt Peak National Observatory is located. |

Accident was caught on video. This frame shows the Boeing 767-400 ER grazing the roof of a semi-trailer on the New Jersey Turnpike while landing, on the afternoon of 3 May 2026.



We will see several instances from video, this one, from CBS:
<https://www.youtube.com/watch?v=UxMbnaTYUVk>

Around Newark Airport



Port Newark: the water is right here



Approach end, Runway 29, Newark Liberty International Airport, New Jersey Turnpike, NJ Transit RR, formerly Jersey Central Lines and Port Newark.

This has been called "The Most Dangerous Mile" in the USA.



o shows United plane striking pole, truck while landing in Newark



Port Newark Container Ship seaport

New Jersey Transit RR Main Line

I-95 New Jersey Turnpike

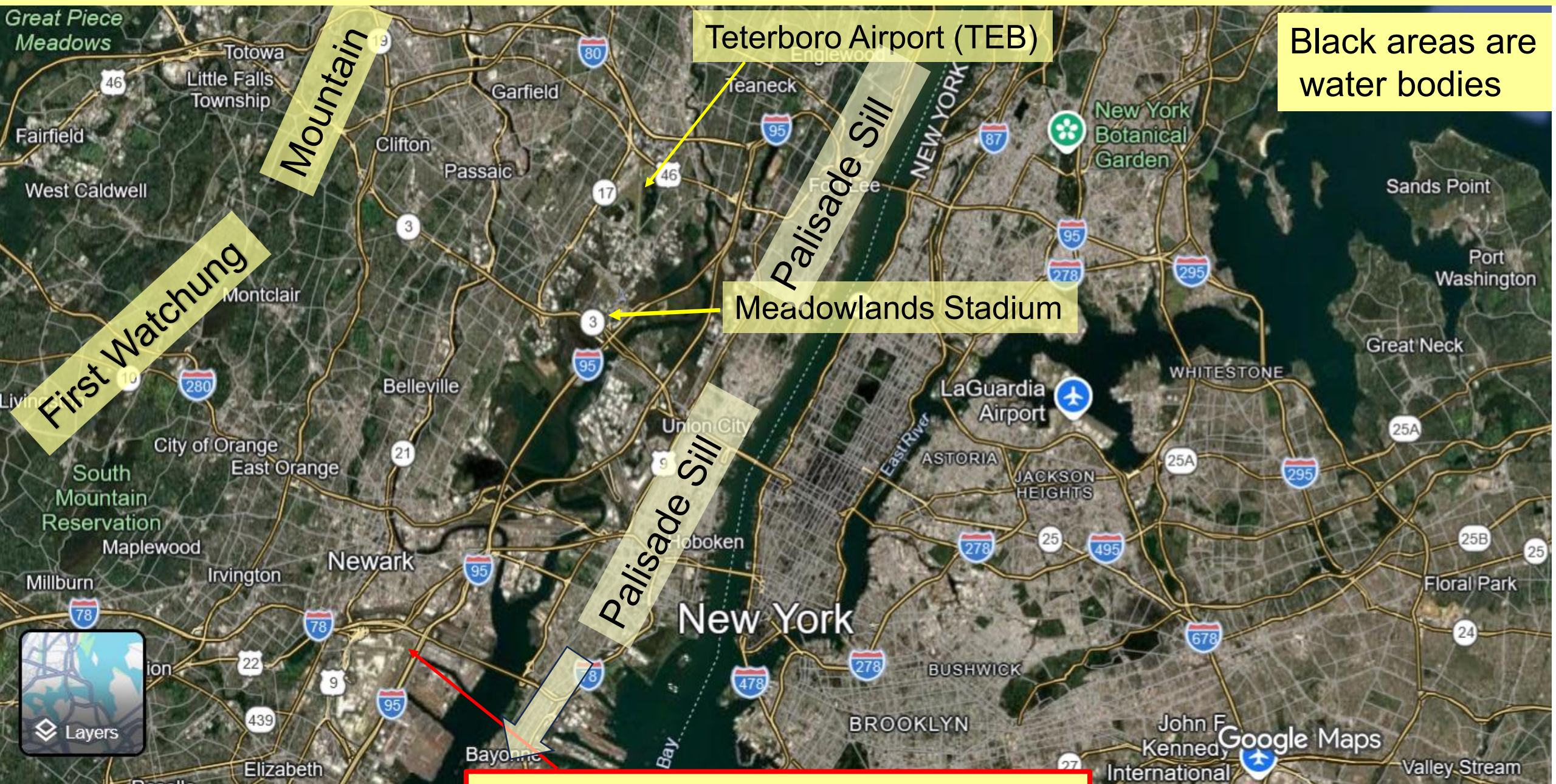
Exit Lane of semi-trailer

[United Airlines plane collides with bakery truck in shocking video](#)

NEW VIDEO SHOWS NEAR DISASTER AT NEWARK AIRPORT



Google Map of the area around Newark Liberty International Airport



Mountain

First Watchung

Teterboro Airport (TEB)

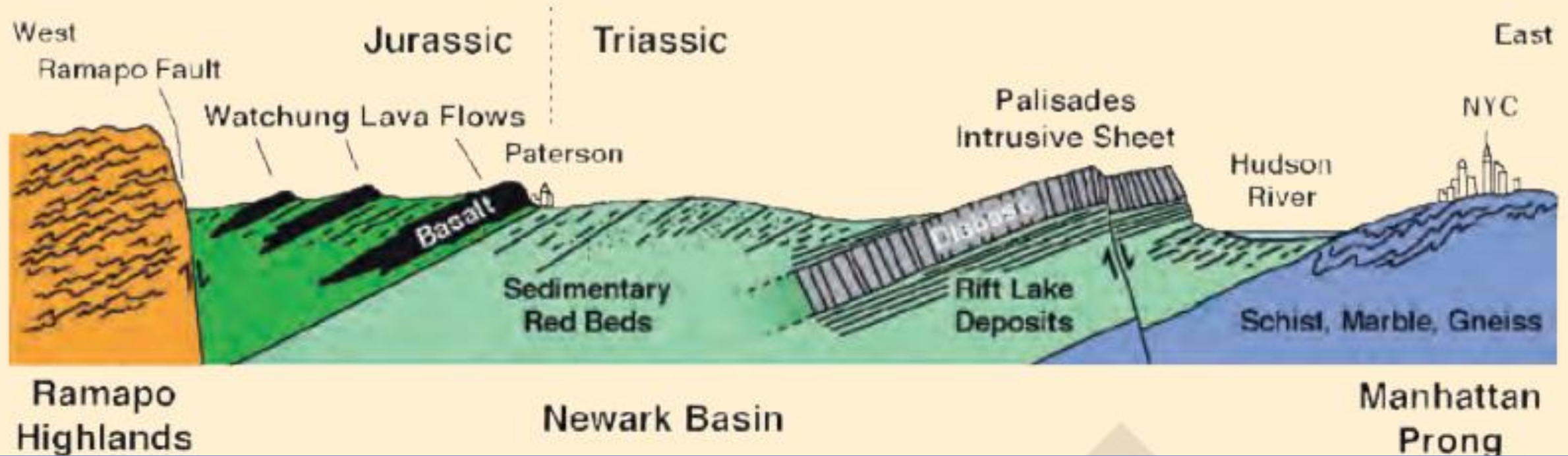
Meadowlands Stadium

Palisade Sill

Black areas are water bodies

Runway 29 Newark Liberty Airport (EWR)

► **Figure NY-NJ.15** Geological cross section of the Newark Basin from the Ramapo fault bordering the Ramapo Highlands eastward to the nonconformity above metamorphic rocks of the Manhattan Prong.

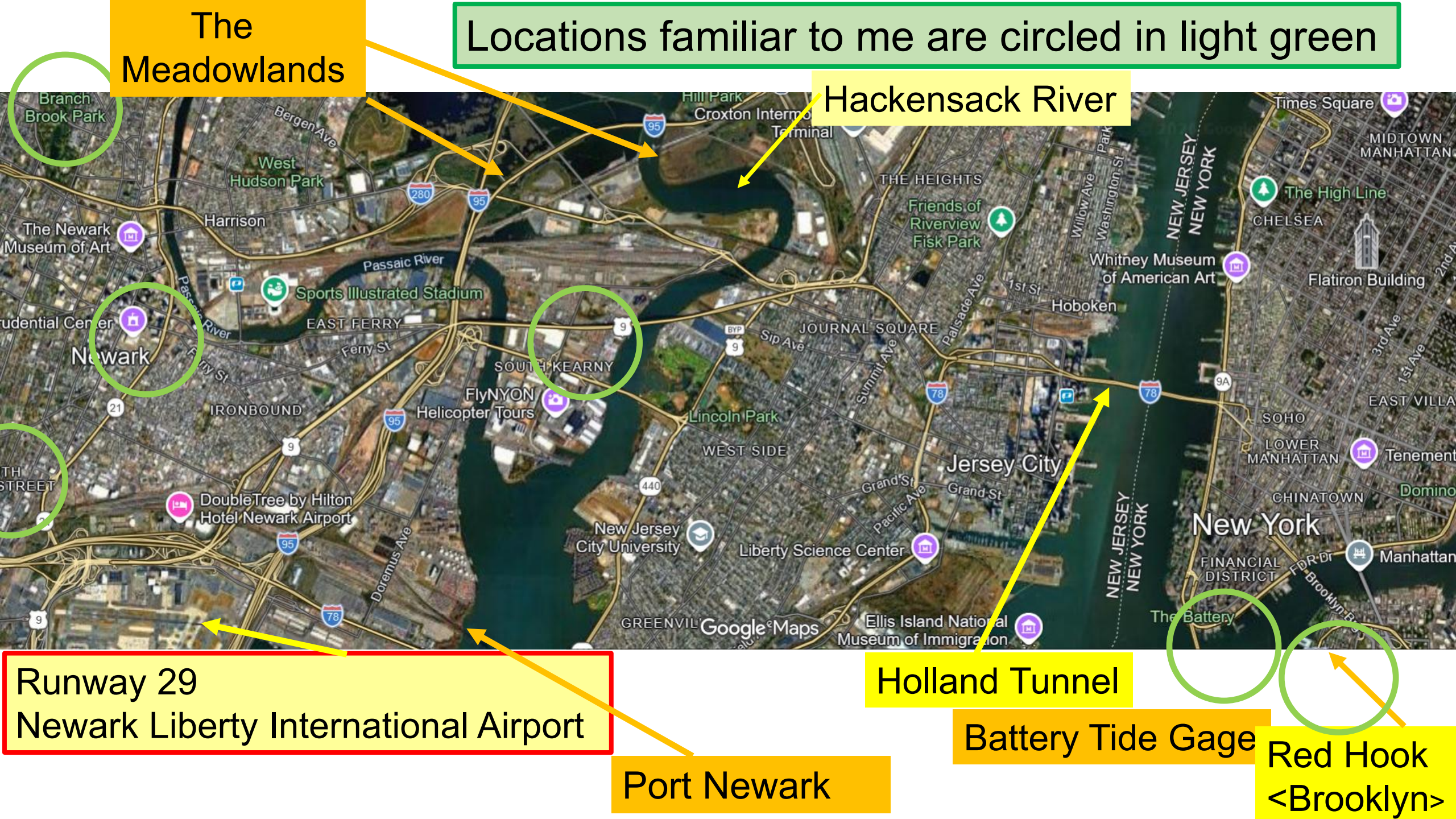


Geologic cross-section East-West through Patterson, NJ, ~16 miles north of Newark Airport. **Note the exaggerated vertical scale.** At the George Washington Bridge, the Palisades are about 400-450 ft MSL high.

Locations familiar to me are circled in light green

The Meadowlands

Hackensack River



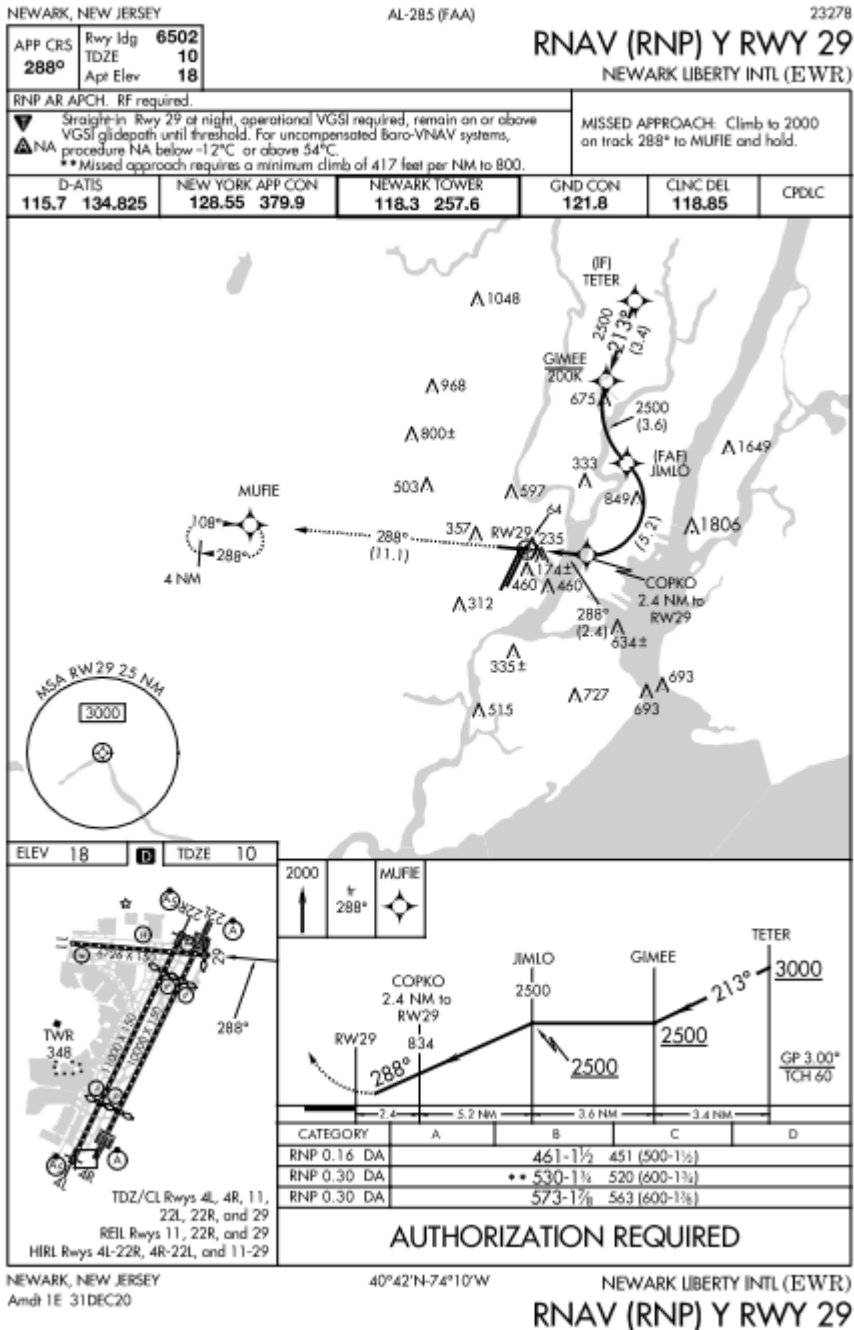
Runway 29
Newark Liberty International Airport

Port Newark

Holland Tunnel

Battery Tide Gage

Red Hook
<Brooklyn>



[https://www.flightaware.com/resources/airport/EWR/IAP/RNAV+\(RNP\)+Y+RWY+29/pdf](https://www.flightaware.com/resources/airport/EWR/IAP/RNAV+(RNP)+Y+RWY+29/pdf)

RNAV APPROACH RUNWAY 29 NEWARK LIBERTY AIRPORT (EWR)

This is a Visual Flight Rules modified **RIGHT** turn “**circling**” approach to land. More detail, in a following slide.

Youtube video simulation showing Runway 29 at Newark.

<https://www.youtube.com/watch?v=WXXup8-of3U&t=277s>

Yellow Oval shows PAPI Lights.



Material I found doing my research for this subject:

A United 767 Hit a Truck at 160MPH. And the Pilots Didn't Even Know?

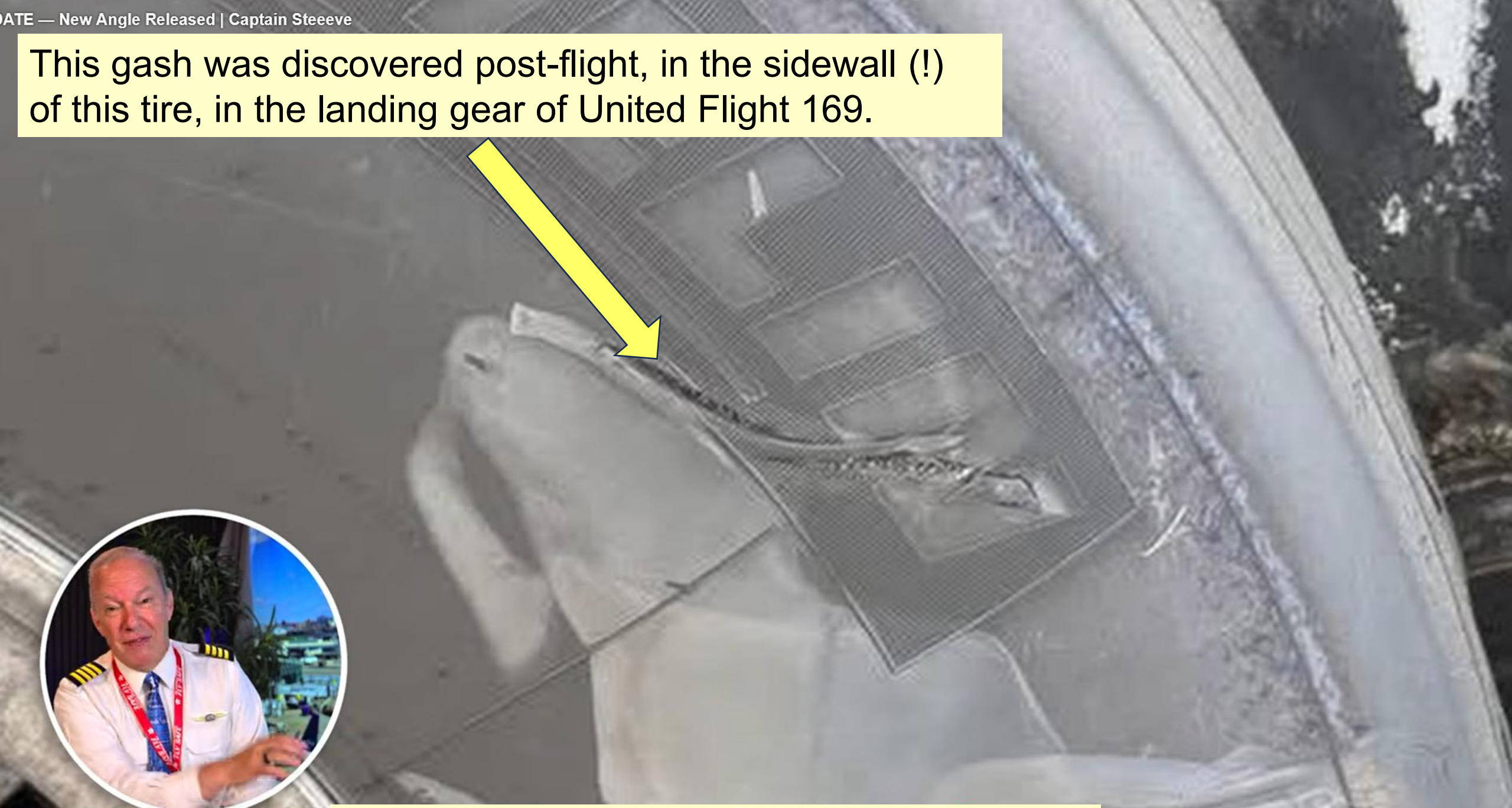
Sometimes the videos on Youtube and other resources not only don't add value; they are misleading. This view is a left side and off-center view of Runway 29. The RNAV approach to Runway 29 is a right-hand turn, not a left-hand turn, making PAPI lights (Yellow Oval) difficult to see and use. Further, there is a note from AOPA that the PAPI lights are unusable 4 or more degrees left of the Runway 29 centerline.

Red circle appears to show landing gear and tires of United Flight 169 at Newark just as the B-767 was grazing the Bakers Express semi.



<https://www.youtube.com/watch?v=IZE88BsKwqA>

This gash was discovered post-flight, in the sidewall (!) of this tire, in the landing gear of United Flight 169.



https://www.youtube.com/watch?v=gQohlpi_usl

<https://www.youtube.com/watch?v=IZE88BsKwqA>

Light pole struck by United Flight 169 falls on the NJ Turnpike; strikes vehicle.



After United Flight 169 struck the light pole on the New Jersey Turnpike, did that pole also strike the Bakers Express semi-trailer, leaving this damage to the truck? Truck is parked to the side of the Exit Lane of the NJTP.



<https://www.youtube.com/watch?v=MOOboHvdx9I>

Looking North:
Broken light pole found in
exit lane divider of the
New Jersey Turnpike
after the accident.



Above, a good view of scattered flat-bottomed fair-weather cumulus clouds, indicating strong lift (beneath the clouds) and strong sink (in the blue sky between the clouds).



https://www.youtube.com/watch?v=gQohlpi_usl

<https://www.youtube.com/watch?v=MOOboHvdx9I>

Gash in the side of the Boeing 767-400 ER found during the post-flight inspection of the aircraft, indicating it struck an object on the ground while landing at Newark.

Was this gash left by the aircraft striking part of the light pole?

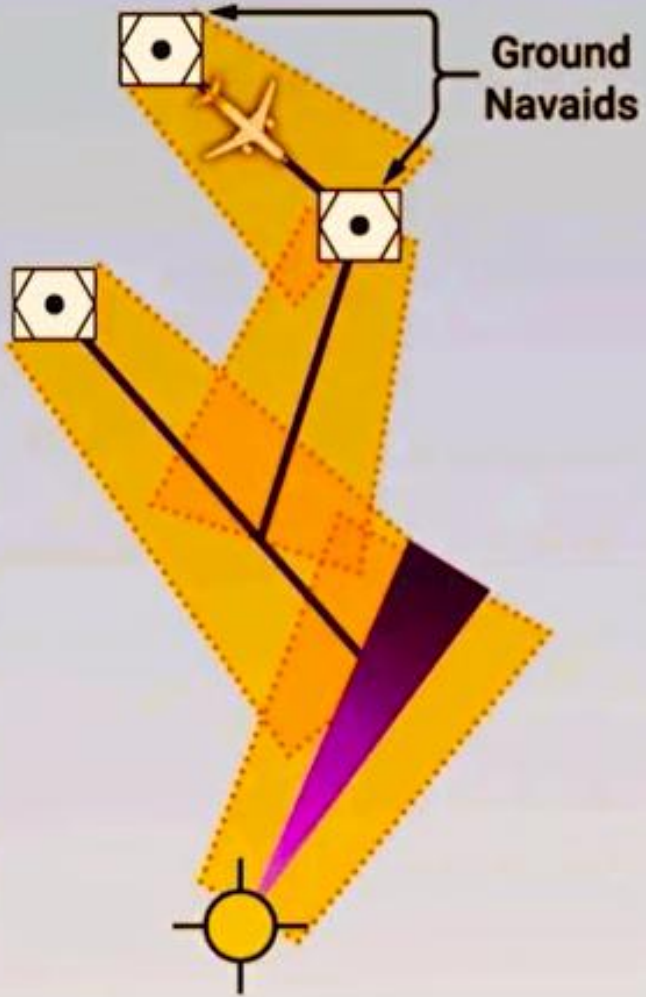




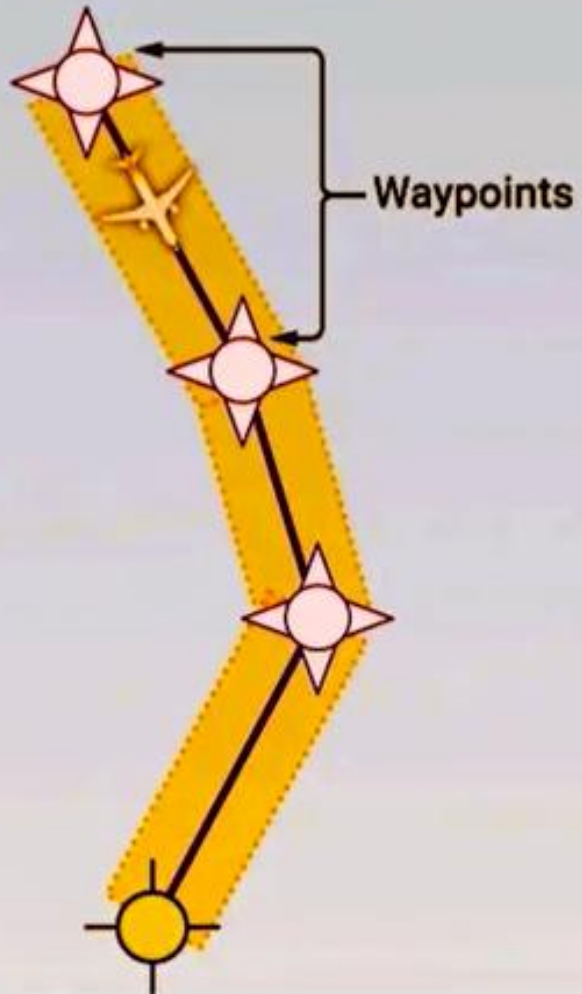
Gash in the side of the Boeing 767-400 ER found during the post-flight inspection of the aircraft, indicating it struck an object on the ground while landing at Newark. Was this gash left by the aircraft striking part of the light pole?



Conventional Routes

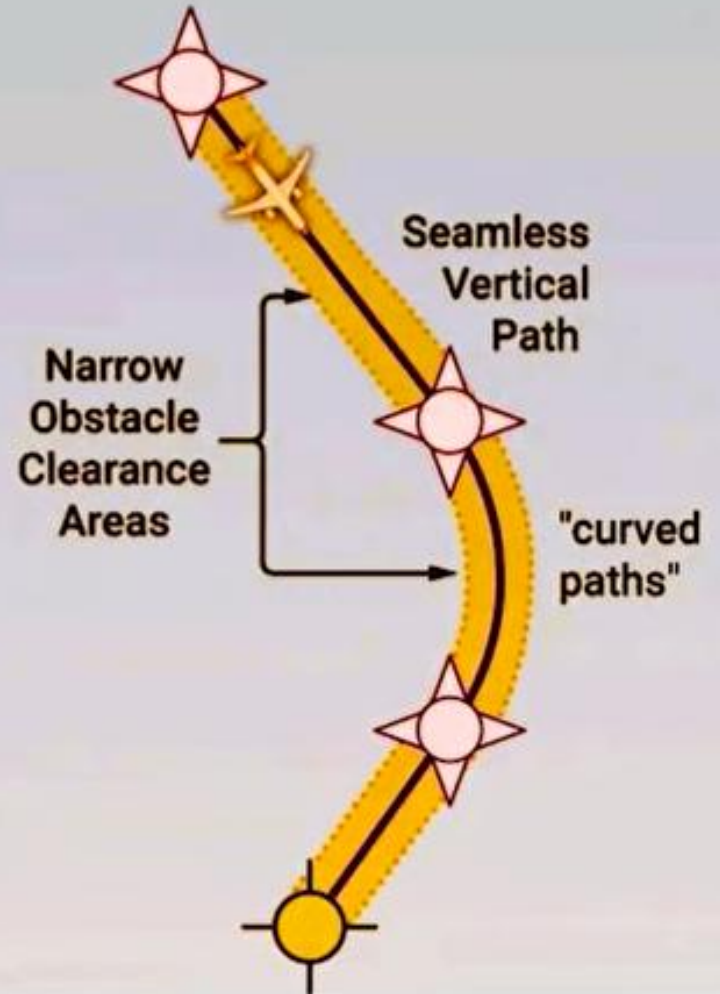


RNAV



RNP

(with on-board performance monitoring and alerting capability)



New Jersey

Passaic R.

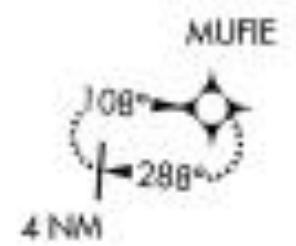
Hasensack R.

Hudson River

New York

Manhattan Is.

Published Visual Flight Rules **modified** right turn "circling" approach to land.



Newark Bay

[https://www.flightaware.com/resources/airport/EWR/IAP/RNAV+\(RNP\)+Y+RWY+29/pdf](https://www.flightaware.com/resources/airport/EWR/IAP/RNAV+(RNP)+Y+RWY+29/pdf)

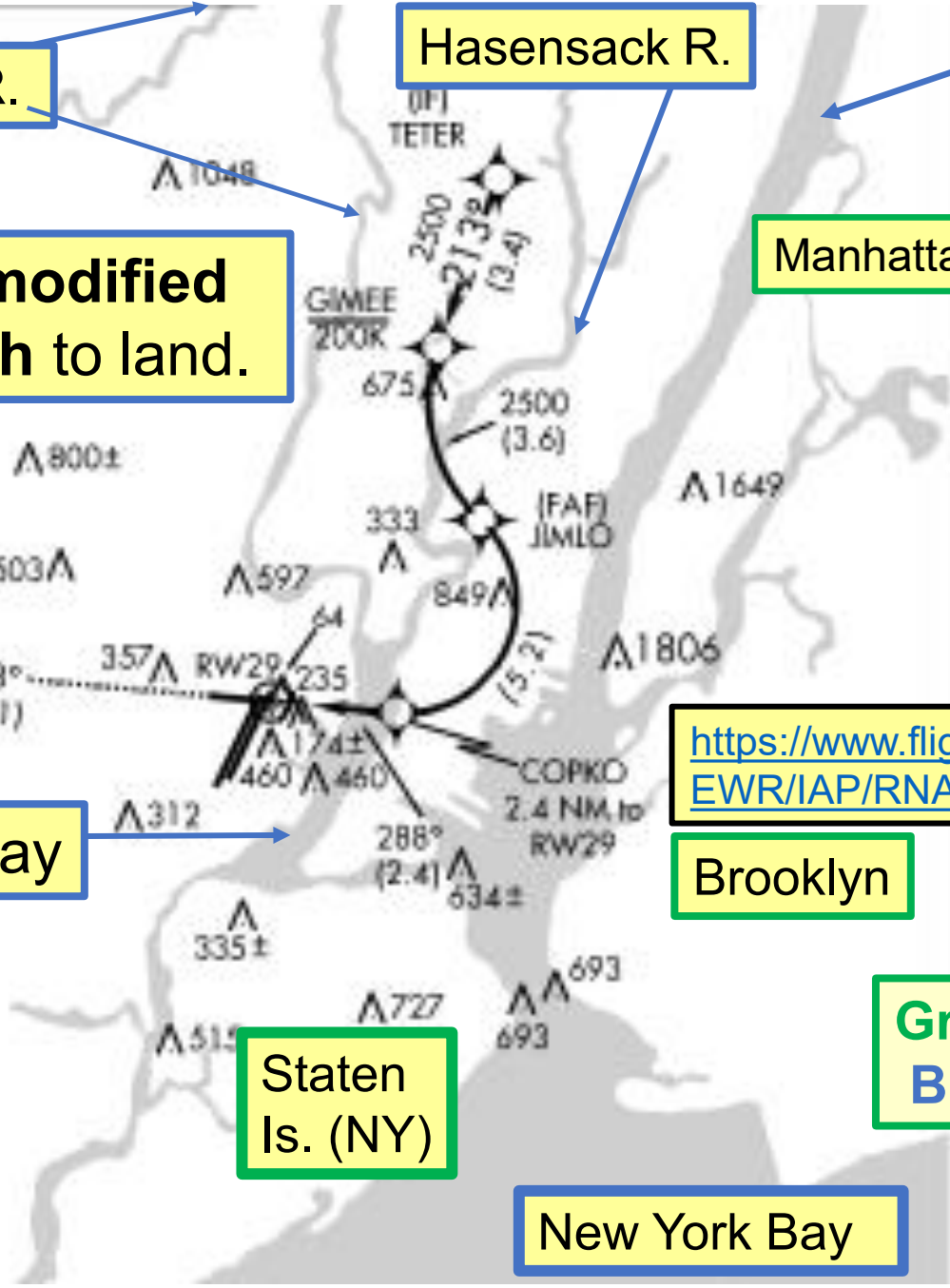
Brooklyn

RNAV APPROACH
RUNWAY 29
NEWARK LIBERTY
INTERNATIONAL AIRPORT
(EWR)

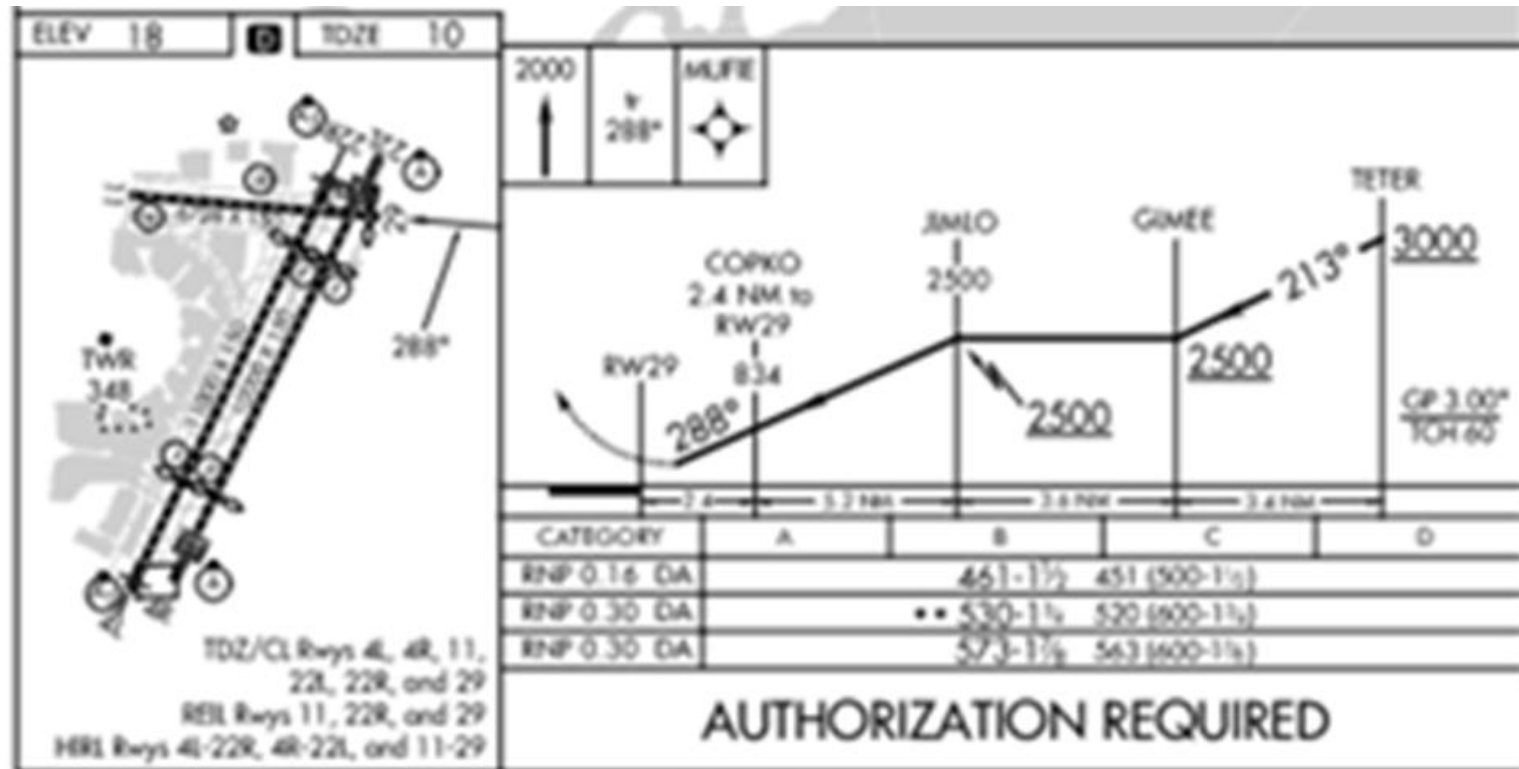
Staten Is. (NY)

Green outlines: Land.
Blue outlines: water.

New York Bay



Descent path to Newark Liberty Int'l Airport Runway 29 RNAV Approach.



NEWARK, NEW JERSEY
 And 1E 31DEC20

40°42'47.4"10"W

NEWARK LIBERTY INTL (EWR)
 RNAV (RNP) Y RWY 29

Some numbers to ponder in this accident:

He passed TEB at 3000 ft MSL, ~5 min before touchdown.

His descent rate was about 1000 ft/min as he was flying the RNAV Approach.

Means he was descending 17 ft per second average the last 13 miles

(but watch the video; some final approach descent rates were -1428 to -128 ft/min.)

This is, to me, one clue that the strong sink was present as he crossed Newark Bay.

He was slowing from ~200 knots to 140 knots while on the RNAV Approach.

At 160 knots that's flying $160/60 = 2.66$ n.miles /min, 0.044 n.miles or 234 ft/second.

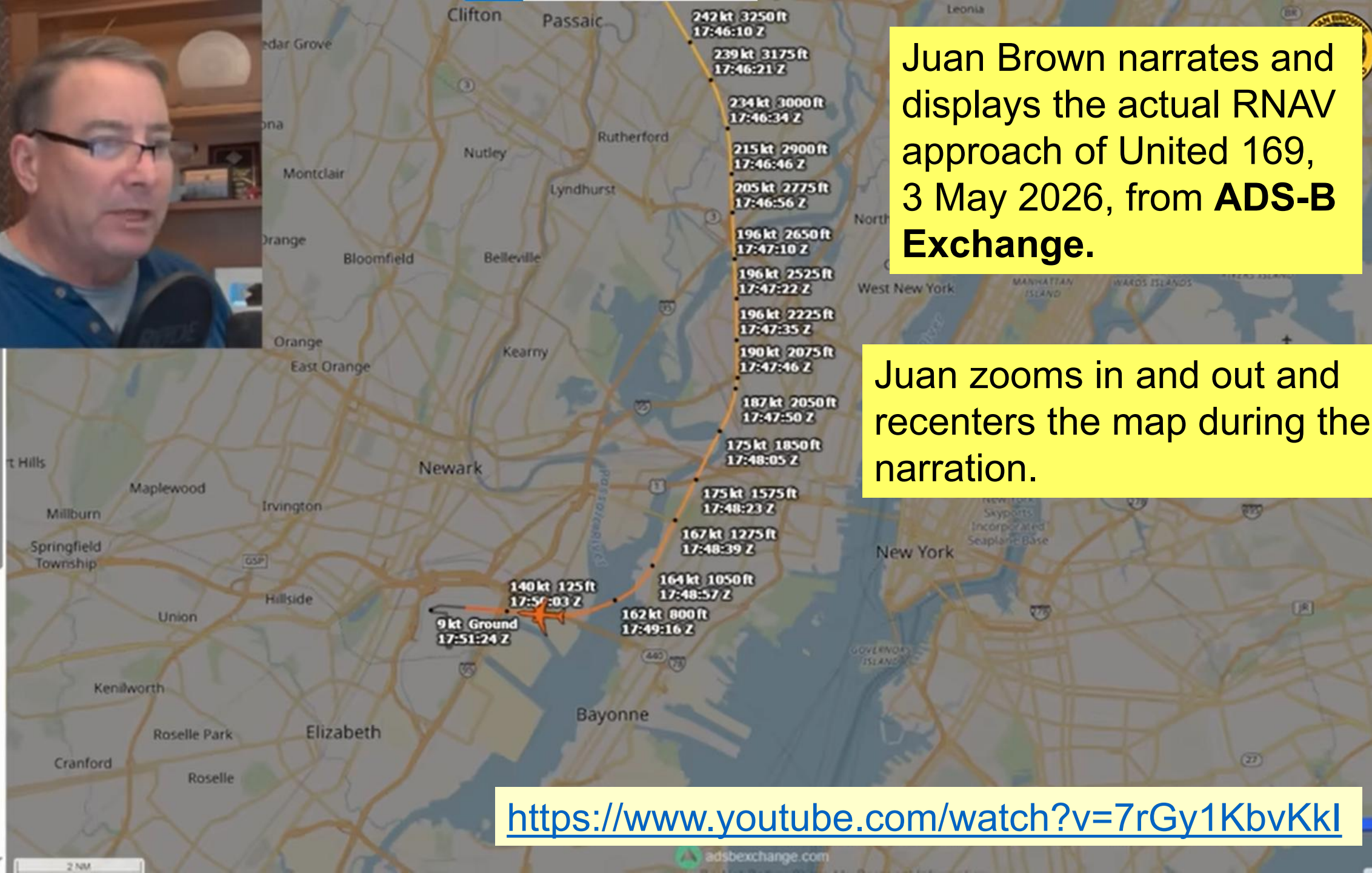
Means he flew the last ~6500 ft in about 25 seconds.



Juan Brown narrates and displays the actual RNAV approach of United 169, 3 May 2026, from **ADS-B Exchange**.

Juan zooms in and out and recenters the map during the narration.

274.9°
40.700°, -74.140°
n/a
SIGNAL
ADS-B
FMS SEL
3008 ft
227.8°
WIND
n/a
n/a
n/a
SPEED
140 kt
n/a
n/a
n/a
ALTITUDE
▼ 325 ft
Rate: -1024 ft/min
WGS84: ▼ 175 ft
Rate: -1152 ft/min



<https://www.youtube.com/watch?v=7rGy1KbvKkl>

Global Flight Tracking. Built on *Accuracy*.

Powered by over 24,000 receivers and trusted by more than 11 million users worldwide.

Past 30 days:

50M

flights tracked

1.6M

site visitors

100M

aircraft viewed

24k

active receivers

START VIDEO AT 0:59 ON

<https://www.youtube.com/watch?v=7rGy1KbvKkl>

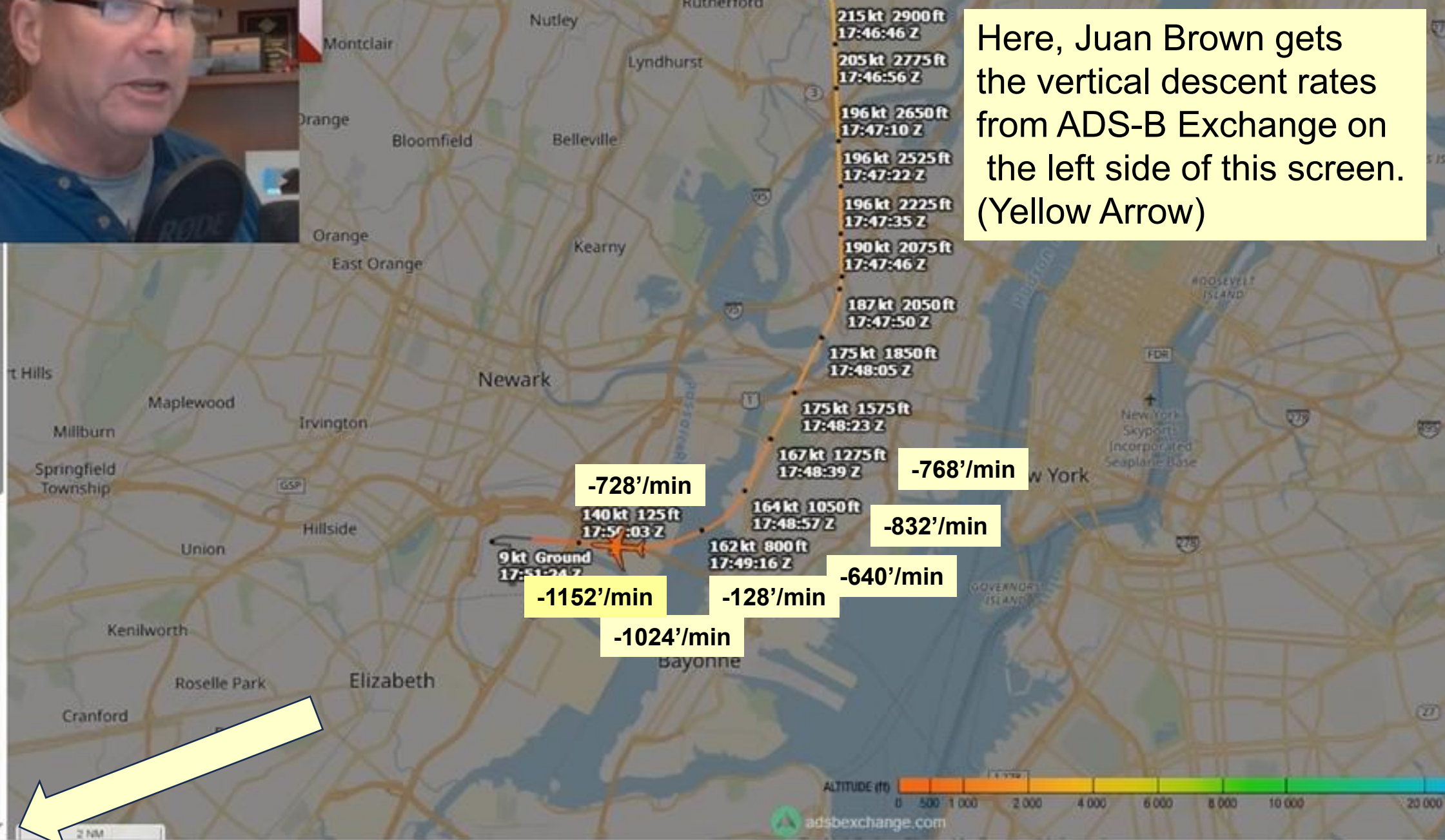


United 767 Hits Bread Truck EWR!



Here, Juan Brown gets the vertical descent rates from ADS-B Exchange on the left side of this screen. (Yellow Arrow)

Heading:	274.9°
Coordinates:	40.700°, -74.140°
SIGNAL	n/a
Mode:	ADS-B
FMS SEL	
Altitude:	3008 ft
Heading:	227.8°
WIND	
Source (from):	n/a
Mode:	n/a
Mode:	n/a
Mode:	n/a
SPEED	
Speed:	140 kt
Mode:	n/a
Mode:	n/a
Mode:	n/a
ALTITUDE	
Mode:	▼ 325 ft
Rate:	-1024 ft/min
WGS84:	▼ 175 ft
Rate:	-1152 ft/min

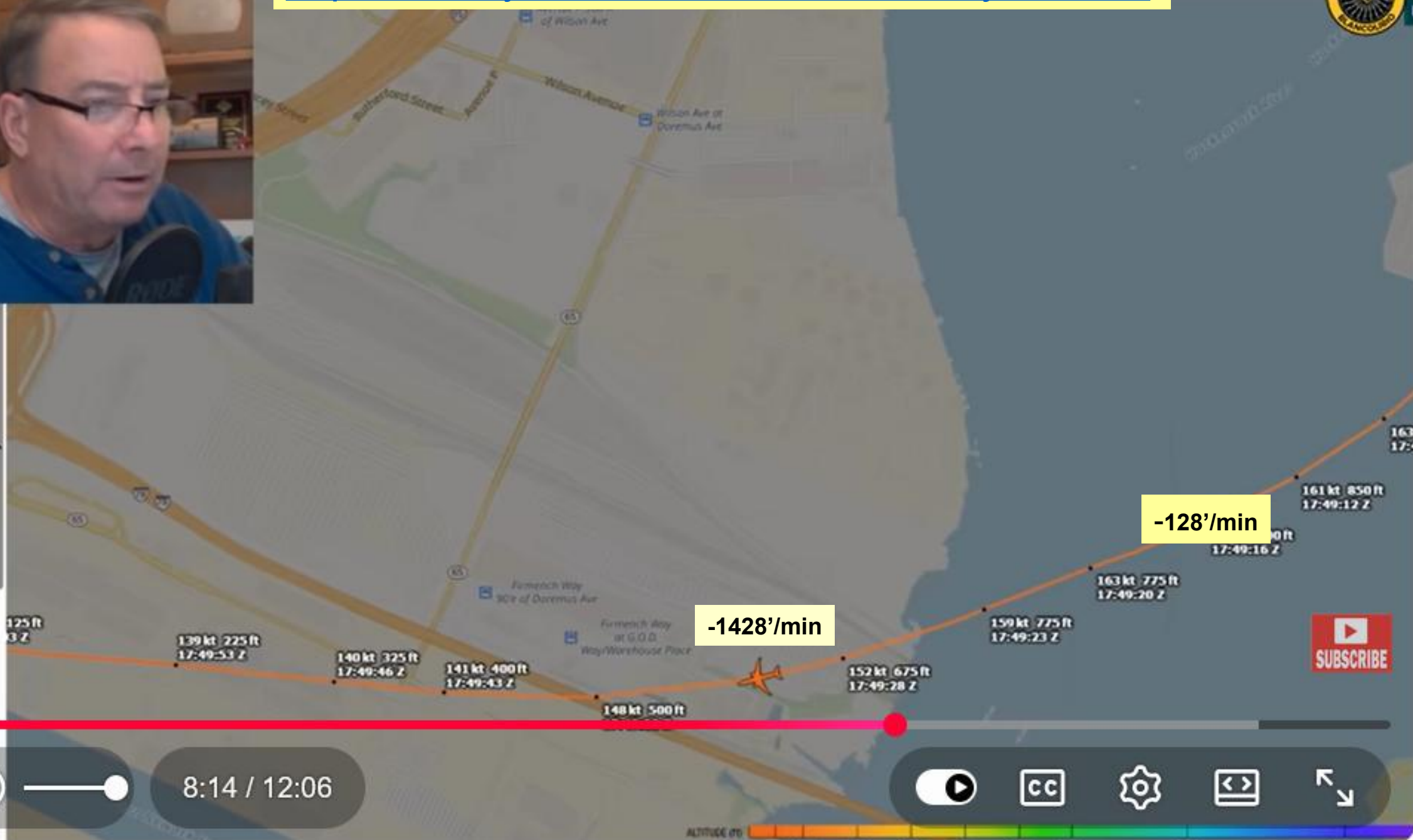


United 767 Hits Bread Truck EWR <https://www.youtube.com/watch?v=7rGy1KbvKkl>

<https://www.youtube.com/watch?v=7rGy1KbvKkl>



Indicated Airspeed: 149 kt
Pressure altitude: 600 ft
MSL altitude: 425 ft
Vertical Rate: -1408 ft/min
Pitch: 254.4°
Roll: 40.700°
Yaw: 127°
Distance: 17.1 mi
SIGNAL
Mode: ADS-B
FMS SEL
Altitude: 3008 ft
Heading: 227.8°
WIND
Direction: n/a
Speed (from): n/a
TAS: n/a
SPEED
Indicated Airspeed: 149 kt
Pressure altitude: n/a
MSL altitude: n/a
Vertical Rate: n/a
Pitch: n/a
Roll: n/a
Yaw: n/a
Distance: n/a
SIGNAL
Mode: n/a
FMS SEL
Altitude: n/a
Heading: n/a
WIND
Direction: n/a
Speed (from): n/a
TAS: n/a
SPEED
Indicated Airspeed: n/a
Pressure altitude: n/a
MSL altitude: n/a
Vertical Rate: n/a
Pitch: n/a
Roll: n/a
Yaw: n/a
Distance: n/a



-128'/min

-1428'/min

SUBSCRIBE

8:14 / 12:06

Video player controls including play/pause, volume, and settings icons.

<https://www.youtube.com/watch?v=7rGy1KbvKkl>



Juan says, "It looks as if he touches down right at the 1000-ft markers."

SPATIAL
Altitude: 140 kt
Rate of Descent: ▼ 125 ft
Vertical Speed: ▼ -25 ft
Rate of Turn: -832 ft/min
Heading: 275.3°
Mach: 0.701, -74.152°
n/a

SIGNAL
ADS-B

MODE SEL
3008 ft
227.8°

WIND
n/a
n/a
n/a



-448'/min

-128'/min

-1428'/min

-832'/min

Here are the updrafts and downdrafts, the sinking air I posited at the beginning.

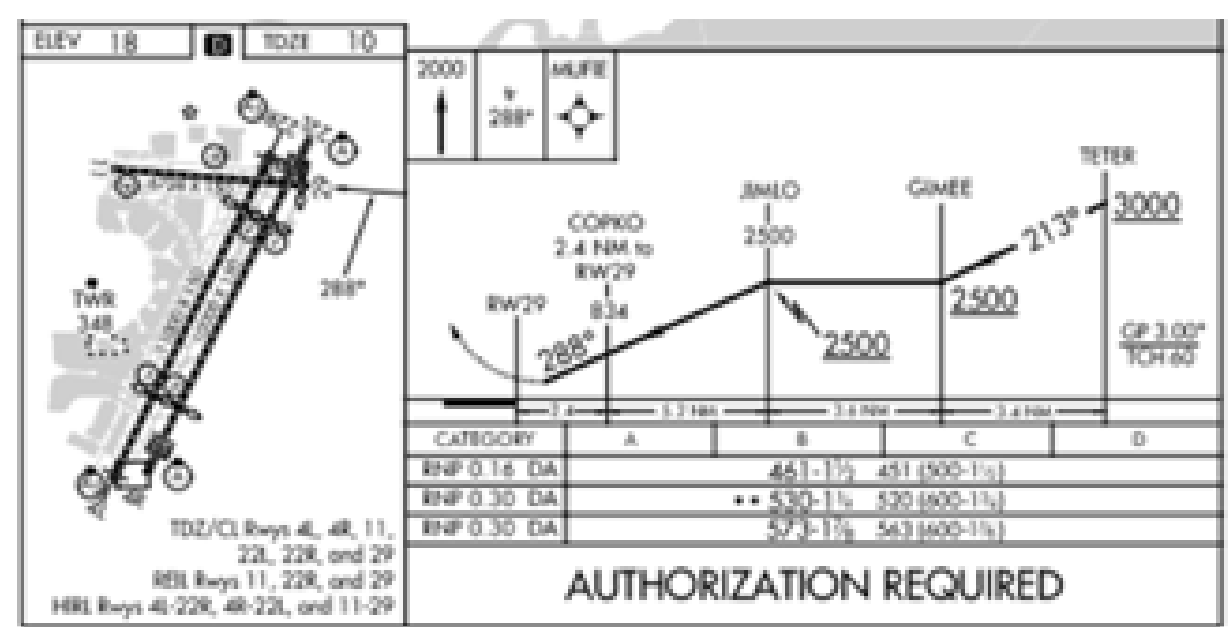
140 kt
n/a
n/a
n/a

8:44 / 12:06

CC

Settings

Full Screen



NEWARK, NEW JERSEY
 Arr'd 18 31DEC20
 40°42'14.74"10"W
 NEWARK LIBERTY INTL (EWR)
RNAV (RNP) Y RWY 29

Now THINK!

How much time does the Pilot Flying have to see and react to strong sink encountered when making this circling right-hand approach during descent to land? PAPI lights are not visible yet. This is the crux of my contention. The NTSB has the Flight Data Recorder and the Cockpit Voice Recorder and will decide....

<https://www.youtube.com/watch?v=7rGy1KbvKkl>

From the Comments:

@ual737ret

10 days ago (edited)

I am a retired United pilot that flew out of Newark for 32 years.

I flew the RNAV approach to 29 many times in the 757 and 737.

I also flew the 767-400.

I found the 767-400 the most difficult Boeing to get a good landing in. You had to manage the power correctly and get the flare just right. I also observed that many heavy pilots would refuse the landing on 29 and request one of the 22 parallel runways and accept the crosswind for the extra runway length and the ILS approach guidance.

<https://www.youtube.com/watch?v=7rGy1KbvKkl>

More Comments:

@b757dad

9 days ago

I am retired Continental pilot and former Check Airman on the 767-400.

I flew the 757 767-200 and 777 out of Newark.

Only the best of the best should land a heavy on 29.

757 was fine, but most shouldn't land a heavy on that runway.

The CAL pilot group did a miserable job of flying the 400. Ask the flight attendants!!

The airplane was underpowered And would destroy you if you got Low and slow.

When this pilot went to 1024' on final his only option was to push the nose down

Accept the fast and keep the power on.

I prefer the opposite as a former Carrier pilot but bad landings came to those

who didn't keep power on to touchdown in the -400.

I would advise that the -400 and 777 shouldn't land on 29.

Better to take the cross wind on either 4 or 22..

<https://www.youtube.com/watch?v=MOOboHvdx9I>

From the Comments:

@CockpitScenes

8 days ago

I have landed on that runway many times. The problem is not the runway itself, but rather the approach.

You have to make a visual circling approach with very little time on final to get squared away.

The tower is always yelling at you to keep it tight.

Also, you can't see the runway very well until you almost get on final.

BTW, this is the same runway that a UAL 757 landed on the taxiway.

Comment posted on Dan Millican's "Taking Off," Video about this accident. Dan Millican calls Newark as having "a tricky short approach."

Source: Youtube - Variety Show by Heffe

Newark skyline

First Watchung Mountain

Landing spot, 1000' from the end of Runway 29. United 169 landed there.

PAPI Lights Runway 29

3



2



Supposed to cross here at 60'

1



A different day, showing final approach to Newark's Runway 29, over part of Port Newark (1), tracks of mainline New Jersey rail tracks (2), the New Jersey Turnpike (3).

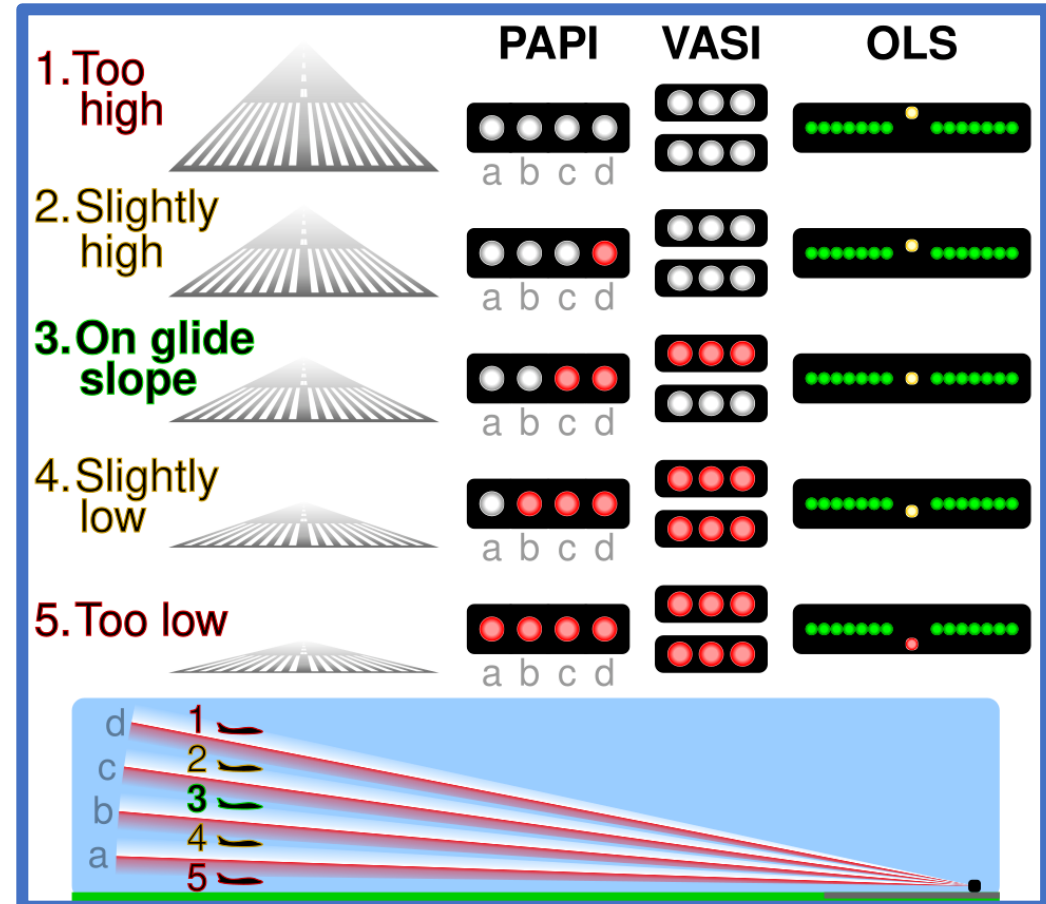
<https://www.youtube.com/watch?v=IZE88BsKwqA>

PAPI “Precision Approach Path Indicator” Lights

PAPI Lights:

https://en.wikipedia.org/wiki/Precision_approach_path_indicator

Precision Approach Path Indicator (PAPI): a system of lights on the side of an airport runway that provides visual descent guidance information during final approach. It is generally located on the left-hand side of the runway approximately 300 meters (980 ft) beyond the landing threshold of the runway.





PAPI (Precision Approach Path Indicator) lights, on the right side of this runway https://en.wikipedia.org/wiki/Precision_approach_path_indicator#/media/File:PAPI_Jersey_Airport.JPG The right side is a non-standard location. In this case the pilot is slightly below the 3-Degree approach slope.

UNDERSTANDING A NON-PRECISION APPROACH & THE PAPI SYSTEM

PHASE 1: INSTRUMENT FLIGHT (NON-PRECISION APPROACH)

LATERAL GUIDANCE ONLY (LOCALIZER BEAM)



CREW USES STEP-DOWN PROFILE to MDA.

VISUAL ACQUISITION POINT



MINIMUM DESCENT ALTITUDE (MDA) BARRIER

MUST NOT DESCEND BELOW UNTIL RUNWAY IS VISUALLY ACQUIRED.

PHASE 2: VISUAL FLIGHT (NAVIGATING BY SIGHT)

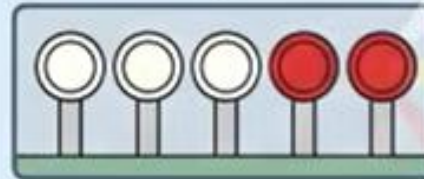


PRIMARY SYSTEM: VISUAL VERTICAL GUIDANCE

LOOKING OUTSIDE

THE PAPI SYSTEM: VISUAL VERTICAL GUIDANCE

PRECISION APPROACH PATH INDICATOR (PAPI)



[4 WHITE] TOO HIGH



[3 WHITE, 1 RED] SLIGHTLY HIGH

[2 WHITE, 2 RED] ON GLIDE PATH



[1 WHITE, 3 RED] SLIGHTLY LOW

[4 RED] TOO LOW



<https://www.youtube.com/watch?v=WXXup8-of3U&t=277s>

VISUALLY THEY ARE NAVIGATING PRIMARILY BY SIGHT

UNDERSTANDING PAPI: PRECISION APPROACH PATH INDICATOR

(Easy-to-Understand Guide)



ON CORRECT GLIDE PATH (PERFECT!)



TWO WHITE LIGHTS | TWO RED LIGHTS
THIS SHOWS THE IDEAL ALTITUDE.



SLIGHTLY LOW (DESCENT TOO DEEP)



ONE WHITE LIGHT | THREE RED LIGHTS
CREW NEEDS TO INCREASE ALTITUDE.



DANGEROUSLY LOW (CRITICAL! PULL UP!)



FOUR RED LIGHTS
CRITICAL RISK. MUST INCREASE ALTITUDE IMMEDIATELY.

UNDERSTANDING THE PAPI LIGHT SYSTEM: PRECISION APPROACH PATH INDICATOR

"BURNED INTO EVERY PILOT'S MEMORY FROM THE FIRST LANDING...
ONE OF THE MOST DIRECT, VISUAL, AND CRITICAL PILOT AIDS IN THE FINAL APPROACH."

1 WHAT IS PAPI?



2 THE LIGHT PATTERNS (VISUAL INTERPRETATION)

CRITICALLY LOW (TOO LOW)		4 RED LIGHTS	
SLIGHTLY LOW		1 WHITE, 3 RED	
ON GLIDE PATH (IDEAL)		2 WHITE, 2 RED	
SLIGHTLY HIGH		3 WHITE, 1 RED	
CRITICALLY HIGH (TOO HIGH)		4 WHITE LIGHTS	

3 VISUAL WARNINGS FROM THE COCKPIT



4 IMMEDIATE PILOT CORRECTION



Right, more Info from the AOPA supplemental chart for the STADIUM VISUAL RUNWAY 29 Approach from the video below.

The PAPI lights are not usable 4 degrees left of the runway centerline.

288 magnetic, 275 true
224 ft.
TORA:6725 TODA:6725
ASDA:6725 LDA:6501
nonprecision, in good condition
4-light PAPI on right (3.00
degrees glide path)
PAPI UNUSBL 4 DEGS LEFT OF
CNTRLN.

yes
yes
yes, lighted

54 ft. sign, lighted, 818 ft. from

<https://www.youtube.com/watch?v=MOOboHvdx9I>

WEATHER at the time.

Later

Newark Liberty International Airport (EWR) seq. of Weather Observations 3 May 2026

METAR KEWR 032351Z 25010KT 10SM FEW080 SCT100 16/M06 A2986 RMK A02 SLP110 T01561061 10172 20139 5:
 METAR KEWR 032251Z 30010KT 10SM SCT085 16/M07 A2984 RMK A02 SLP104 T01611067 \$
 METAR KEWR 032151Z 31013G24KT 10SM FEW010 SCT085 17/M07 A2984 RMK A02 PK WND 32032/2109 SLP104 FU
 \$
 METAR KEWR 032051Z 29017G31KT 10SM FEW010 SCT080 16/M07 A2983 RMK A02 PK WND 28034/2016 SLP102 FU
 56014 \$

METAR LOC TIME Z WIND+GUST VIS CLOUDS T/Td ALSTG REMARKS PEAK WIND SEA LVL PRES

METAR KEWR 031851Z 30020G36KT 10SM BKN075 15/M06 A2986 RMK A02 PK WND 26036/1845 SLP111 T01501061
 METAR KEWR 031751Z 29023G32KT 10SM BKN075 BKN250 14/M06 A2988 RMK A02 PK WND 27036/1724 SLP116 T0:
 METAR KEWR 031651Z 29019G30KT 10SM BKN070 BKN250 13/M05 A2988 RMK A02 PK WND 28030/1648 SLP118 T0:
 METAR KEWR 031551Z 30018G28KT 10SM FEW050 BKN070 BKN250 12/M06 A2989 RMK A02 PK WND 30032/1538 SLF
 METAR KEWR 031451Z 31019G33KT 10SM SCT050 BKN070 BKN250 11/M08 A2989 RMK A02 PK WND 31033/1442 SLF
 METAR KEWR 031351Z 31013G27KT 10SM FEW050 SCT095 BKN250 11/M03 A2989 RMK A02 PK WND 30027/1345 SLF
 METAR KEWR 031251Z 31012G19KT 10SM FEW070 BKN095 BKN250 09/M03 A2989 RMK A02 PK WND 30026/1202 SLF
 METAR KEWR 031151Z 31011G24KT 10SM SCT070 BKN095 BKN250 08/M03 A2989 RMK A02 PK WND 31027/1102 SLF
 METAR KEWR 031051Z 32015G22KT 10SM BKN070 BKN095 BKN250 08/M03 A2987 RMK A02 SLP115 T00781033 \$
 METAR KEWR 030951Z 32014G22KT 10SM BKN070 BKN095 BKN250 08/M04 A2985 RMK A02 SLP107 T00831039 \$
 METAR KEWR 030851Z 33012KT 10SM BKN100 BKN250 08/M03 A2984 RMK A02 SLP104 T00831033 56001 \$
 METAR KEWR 030751Z 35011KT 10SM BKN100 BKN250 09/M03 A2984 RMK A02 SLP105 T00891033 \$

Earlier

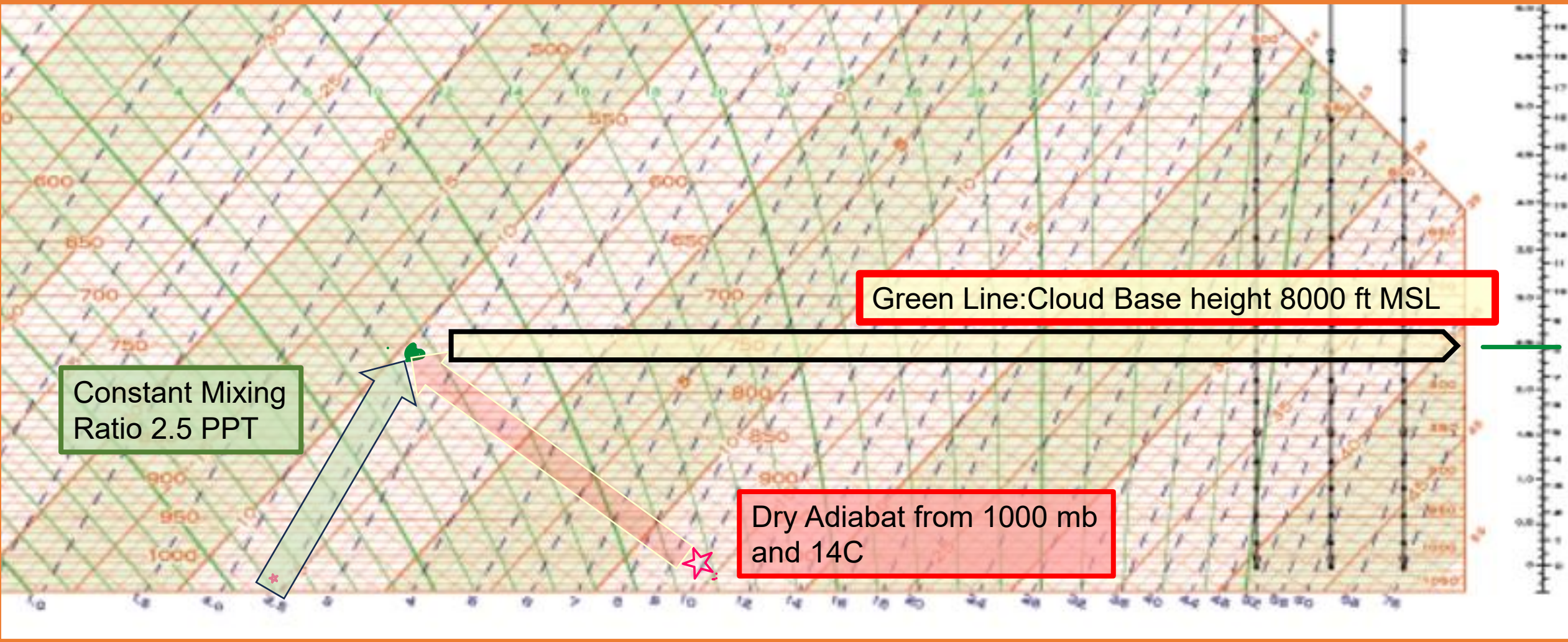
<https://www.youtube.com/watch?v=MOOboHvdx9I>



8:40 / 18:40 [CC] [Settings] [Fullscreen] [Volume] [Mute]

Using Temperature 14C, Dewpoint -6C, I get base of cumulus 8000 ft MSL, METAR report was 7500 BKN.

Lifting Condensation Level on Skew-T Log P diagram



Green Line: Cloud Base height 8000 ft MSL

Constant Mixing Ratio 2.5 PPT

Dry Adabat from 1000 mb and 14C

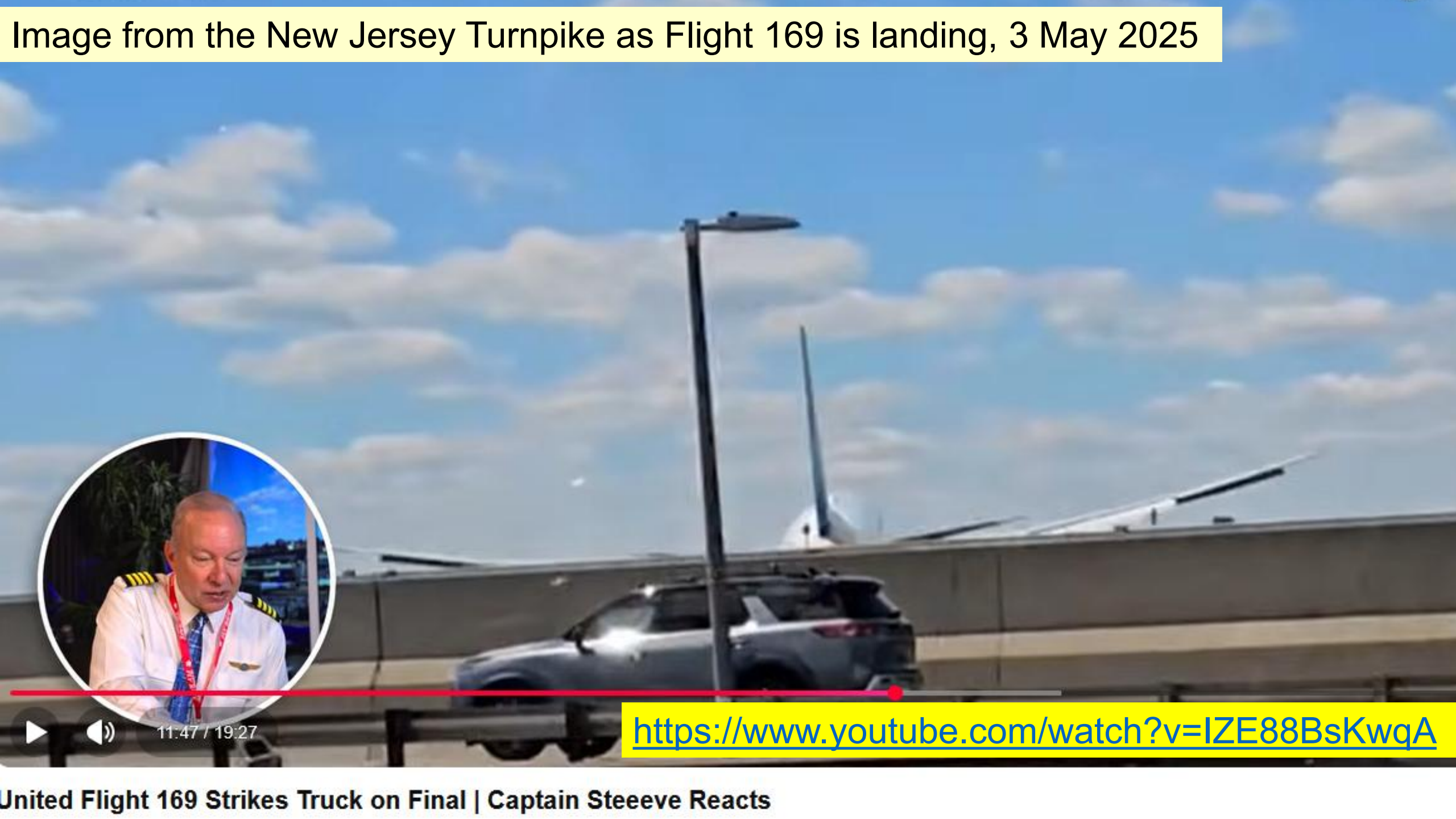
Note the 1751Z observation reported the low clouds **BROKEN**; I think they were **scattered**, not broken.

Observe these cumulus clouds on the afternoon of 3 May 2026. To me they indicate weak convection **over the water**, with “soft” cloud bases, sides and tops, indicative to me of weak convection which developed over Newark Bay, New Jersey’s Meadowlands and other nearby water surfaces.



<https://www.youtube.com/watch?v=UxMbnaTYUVk>

Image from the New Jersey Turnpike as Flight 169 is landing, 3 May 2025



▶ 🔊 11:47 / 19:27

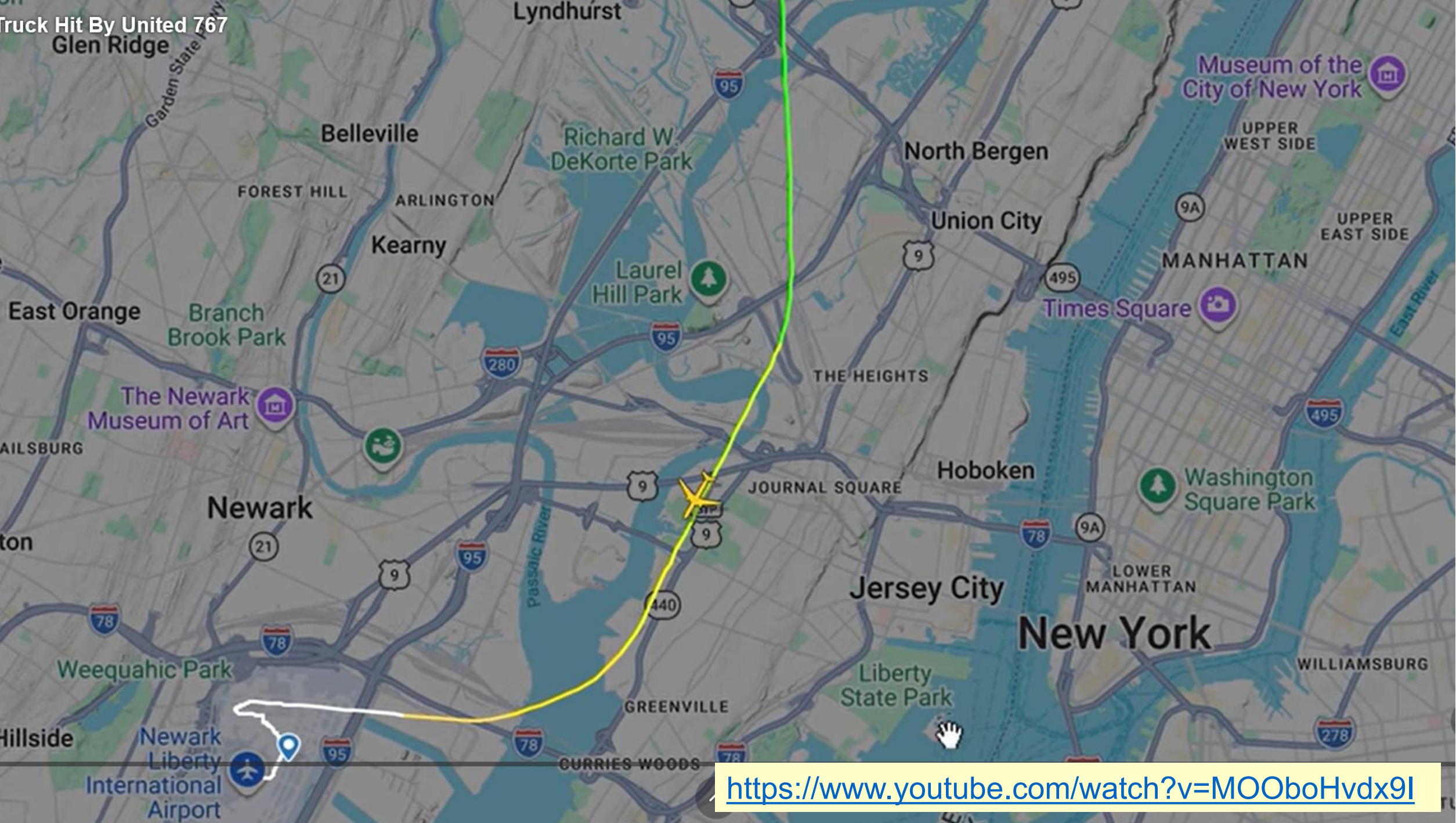
<https://www.youtube.com/watch?v=IZE88BsKwqA>

United Flight 169 Strikes Truck on Final | Captain Steeve Reacts



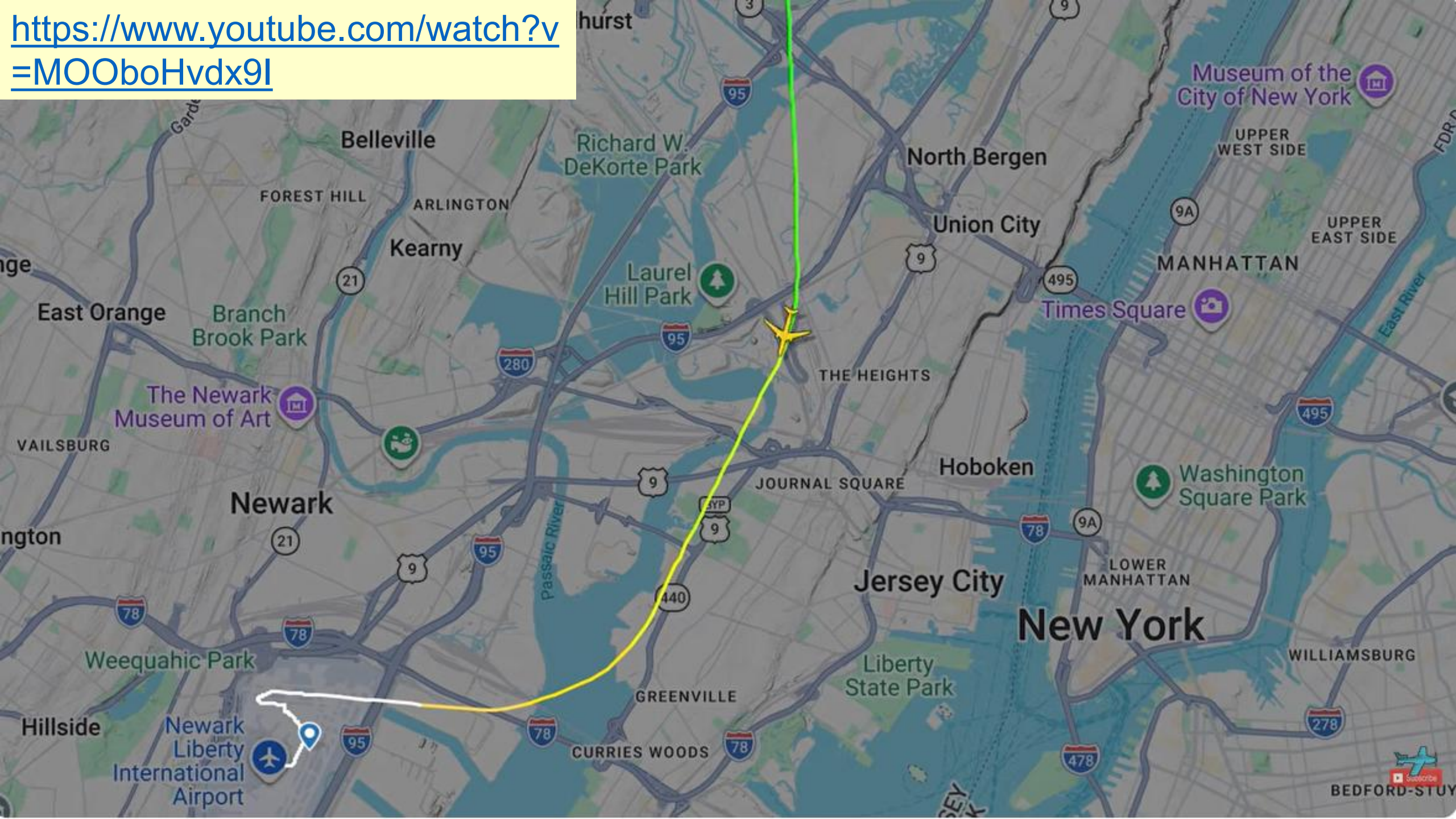
Notice at least three things in this image, to the west, over solid land at, and west of, Newark Liberty International Airport as Flight 169 landed. **ONE**: Cloud bases of the darker-bottom cumulus clouds are flat-bottomed, indicates much stronger lift and sink (Yellow Arrows). **TWO**: These clouds are scattered, not broken. **THREE**: Indications of a “Blue Hole” (Orange Arrows) over land, near the airport.

Truck Hit By United 767
Glen Ridge



<https://www.youtube.com/watch?v=MOOboHvdx9I>

<https://www.youtube.com/watch?v=M00boHvdx9I>



<https://www.youtube.com/watch?v=FJyUzqppmAE>







Here is a planetary boundary layer with what appears to be a good field of fair-weather cumulus clouds, usually a good day for soaring. Many of the flat-bottomed clouds have good lift. *Fractus* clouds, no lift at all. Blue Sky means sink!

Blue Hole:

In flying, especially soaring, a Blue Hole is a location along an intended flight path where a field of cumulus clouds disappears, frequently an indicator of an air mass without convection, or without strong enough convection to enable soaring flight.

--Bob's Working Definition.

Sailplane Pilots entering a “Blue Hole,” an area devoid of cumulus clouds, often encounter strong sink.

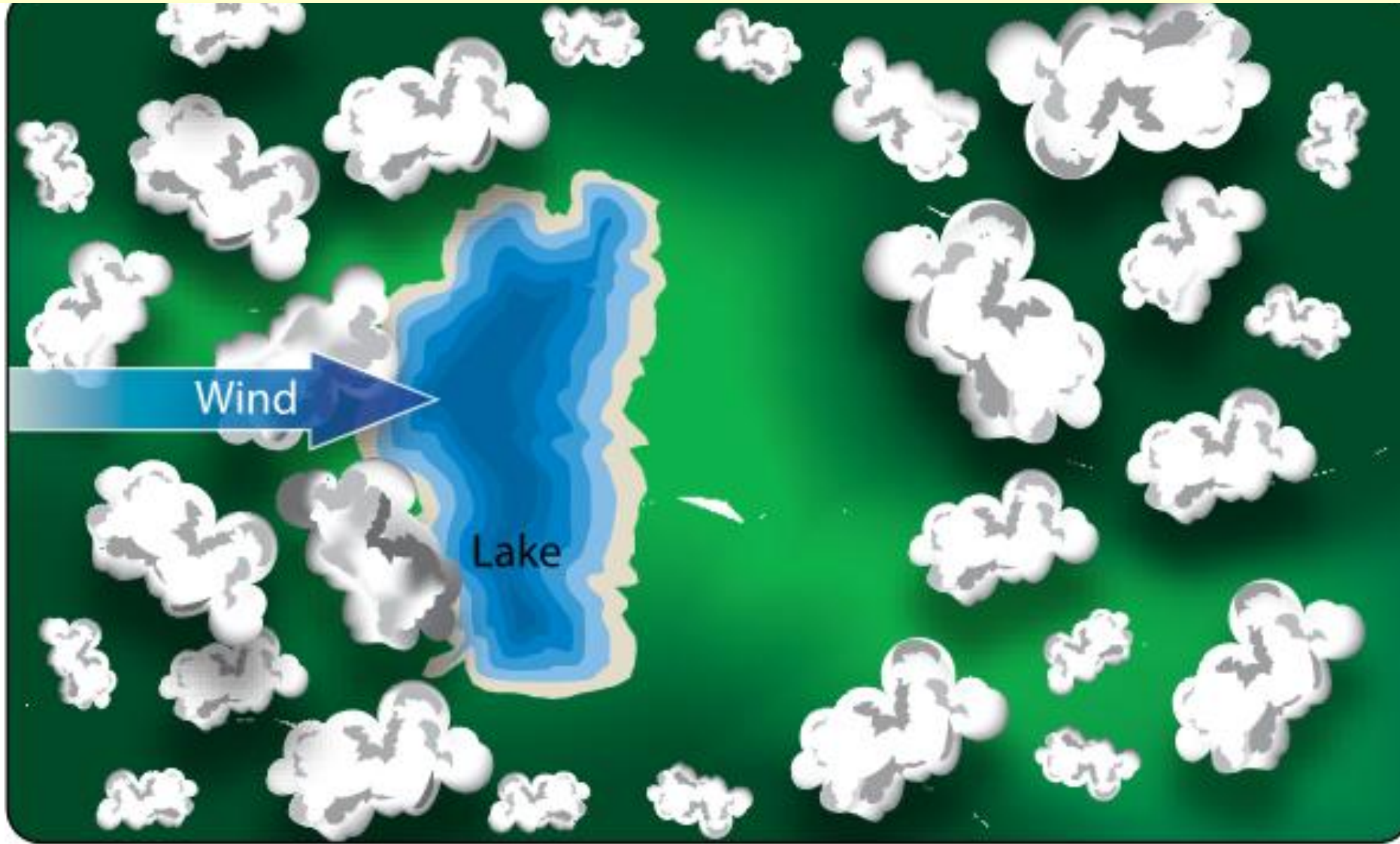
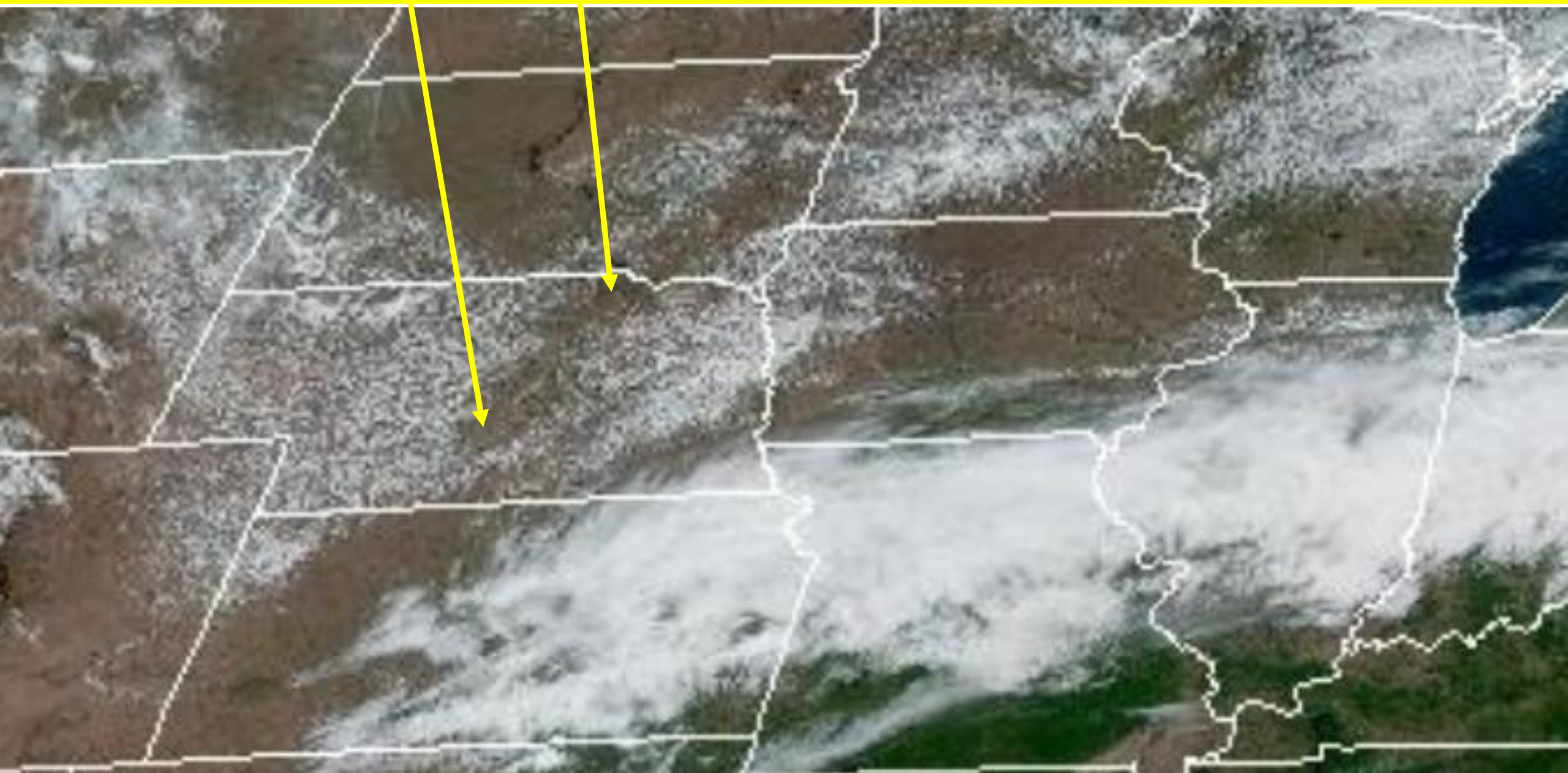


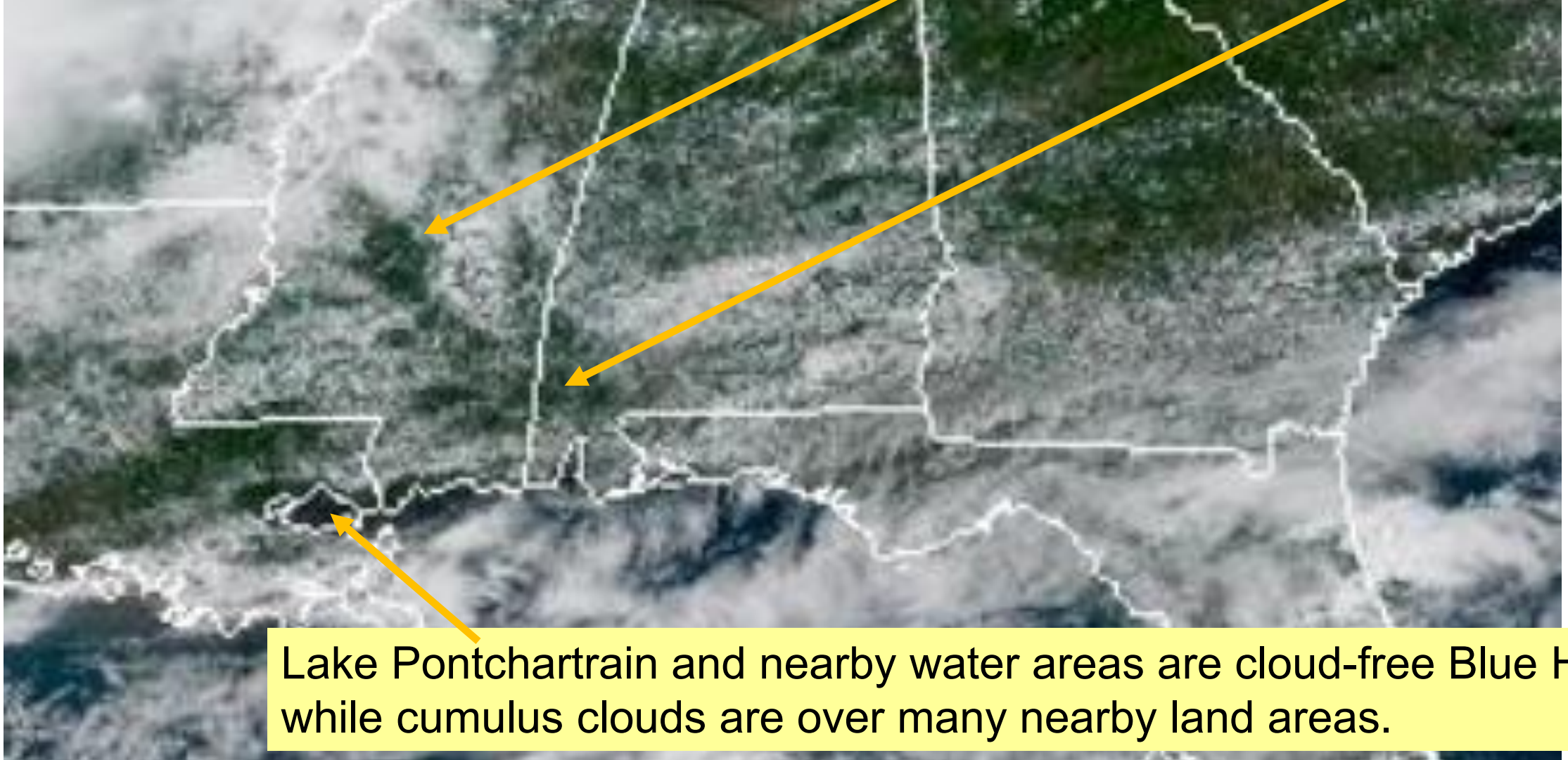
Figure 10-6. *Blue hole in a field of cumulus downwind of a lake.*

Example of "Blue Holes" developing in central Nebraska on 8 May 2026 at 1910Z, seen on GOES-19



https://www.star.nesdis.noaa.gov/GOES/conus_band.php?sat=G19&band=GEOCOLOR&length=150&dim=

Example of Blue Holes developing in south-Central Mississippi and parts of Alabama on the afternoon of 10 May 2026.



Lake Pontchartrain and nearby water areas are cloud-free Blue Holes while cumulus clouds are over many nearby land areas.

https://www.star.nesdis.noaa.gov/GOES/conus_band.php?sat=G16&band=GEOCOLOR&length=24&refresh=true

John J. Bird¹, Daniel Sazhin², Jack W. Langelaan, Bounded Rationality and Risk Strategy in Thermal Soaring

This is from a published journal article

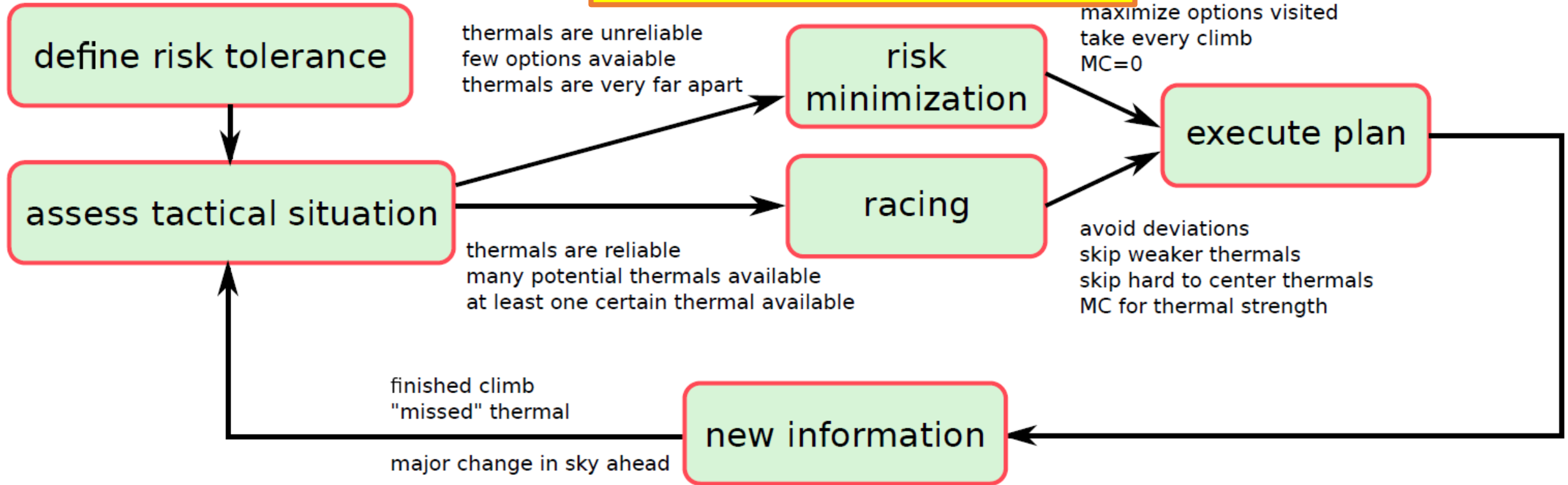


Fig. 8: Flowchart describing the decision-making process for risk-aware thermal soaring. Gear-shifting occurs when the pilot receives new information which reveals a change in the risk situation and reevaluates the decision-making frame. This could happen for example when missing an expected climb or when reaching a “blue hole” with few clouds.

<https://journals.sfu.ca/ts/index.php/ts/article/download/2139/2051/8285>

Bluenose Soaring Club - Soaring Weather

The Weather, Climate and Soaring in Nova Scotia

Larry Bogan - Feb 2002

“Blue Hole: Frequently, when there is widespread CU’s making for a good cross-country day, an area with no CU’s or lift (called a ‘blue hole’) develops south of the Avon river inlet from the Minas Basin. This effectively blocks direct flights to the west. It is possible that this is a result of easy penetration of a sea breeze along the Avon River.”

This might be a Blue Hole, as depicted in this image from the Brits from the Cotswolds Gliding Club



<https://www.cotswoldgliding.co.uk/members/airfieldblog>

Michael Opitz: It was Day Three of the 1980 Standard Class Nationals at Harris Hill. I was having a good day, having caught up and passed the slow-moving gaggle. Now at the top, I started pushing ahead straight on course over the high ground. The sky dried up and went blue, but then I hit a five-knot thermal. Climbing up, I figured that the thermals were still working, just dry. I drove further out into the blue hole, only to find completely smooth air. I ended up hitting the dirt, while the gaggle slowly worked its way back home, deviating along the river valleys in order to use the ridges alongside for saves with the headwinds that we had picked up on that leg. That day cost me the competition.

“The sky dried up and went blue,” means he flew directly into a “blue hole.”

“completely smooth air” means no thermals, only sinking air.

This red sailplane is a Schweizer 1-26. I have maybe 100 hours in this type, Gold Altitude and Gold Distance.



<https://www.flieger.news/soaring-is-risky-business/>

Summary: I have direct experience in several aspects of this aircraft accident which offer a perspective into this occurrence:

I grew up in New Jersey. I worked the summer of 1957 in Newark, commuted daily along the very rail tracks adjacent to Newark Liberty International Airport, and am familiar with the area and the geography around Newark Airport.

I became a Weather Officer in the US Air Force, was Weather Member on a major aircraft accident when an EC-121 [crashed on takeoff](#) into a thunderstorm in Thailand, when all 18 crewmembers were lost.

When I returned to the US, I joined the Albuquerque Soaring Club and over the next 30 years I accumulated 500 hours flying sailplanes, learning how to fly using only natural sources of lift, and avoiding areas of strong sink as much as possible.

Based on the information available concerning the 3 May 2026 aircraft accident, when a Boeing 767-400 ER hit at least a light pole when landing at Newark Airport, NJ, I conclude that the accident occurred when the aircraft encountered strong sinking air as it flew into a more turbulent boundary layer as it was turning to final approach to Newark's Runway 29. A combination of several factors contributed, most importantly inability of the flight crew to see their sinking altitude early enough, using the PAPI lights, because of flight and approach geometries.

