



National Transportation Safety Board

Office of Aviation Safety / Operational Factors Division (AS-30)

ATC Services Review Worksheet

Date of Event (UTC)

Sep 25, 2024

Review Date

May 2, 2025

Time of Event (UTC)

2026 UTC

Time of Event (LCL)

1526 CDT

Investigation Number

DCA24LA318

Keys Number

195210



CHART



AIRFIELD



SIAP/SID/STAR

A review of the ATC services provided in the above incident/accident was conducted by an ATC Investigator. Investigative work was limited to a review of the factual data collected over the course of the investigation and consideration of the current rules, regulations, and procedural guidance current at the time. The ATC investigator did not travel to the scene, nor to any ATC facilities in support of this investigation. Additionally, the ATC investigator did not conduct any personnel interviews, and all investigative work was conducted from their assigned office.

ATC Investigator: Mike Brown, ATC Accident Investigator



SRT RELEASE APPROVED

Involved ATC Facilities: Facility 1: ORD

Facility 2: C90

Facility 3: -----

Facility 4: -----

Involved Aircraft: Aircraft 1: ENY3936

Aircraft 2: -----

Aircraft 3: -----

Aircraft 4: -----

☒ Data Requested

☐ NOTAM Issues

Surveillance Data Source

FAA ADS-B Data

Audio Data Source

FAA Certified Audio

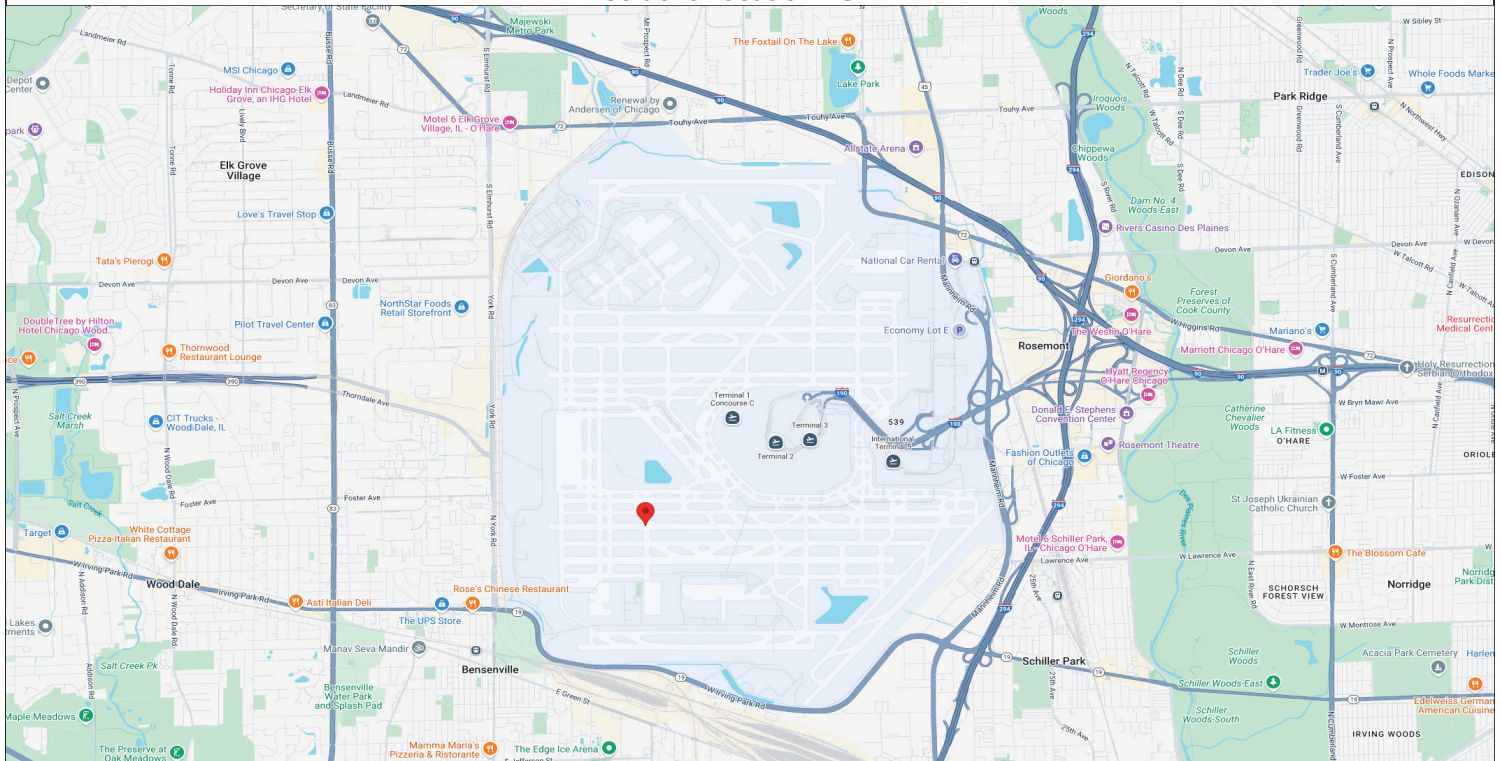
☒ ATC Procedures

☐ Safety Improvements

PRELIM Summary Information - SAFTI

On September 25, 2024, about 1526 central daylight time (CDT), Envoy Airlines flight 3936 (ENY3936), an Embraer 170-100 LR, N772MR, was cleared for the instrument landing system (ILS) approach to land on runway 10C at Chicago O'Hare International Airport (ORD), Chicago, Illinois, but the flight crew landed on runway 10L instead. None of the 68 occupants aboard the airplane were injured, and the airplane was not damaged. The regularly scheduled passenger flight was operating under the provisions of Title 14 Code of Federal Regulation Part 121 from Norfolk International Airport (ORF), Norfolk, Virginia, to ORD.

Accident Location - SAFTI



ATC Service Review Summary

A service review was conducted utilizing data provided by the Federal Aviation Administrative (FAA) and applicable FAA procedural guidance. This review was focused on the (ATC) services provided by Chicago Terminal Radar Approach Control (C90 TRACON) and O'Hare International Airport Air Traffic Control Tower (ORD ATCT).

According to the ORD ATCT Daily Record of Facility Operation (FAA form 7230-4) from the day of the incident at 1310 CDT, the airport runway configuration was set to arriving on runways 9L, 10C and 10R and departing on runways 10L and 9R. This runway configuration had been the same for 2 hours and 16 minutes prior to ENY3936 landing.

On initial check in with C90 TRACON, the crew of ENY3936 was advised by the Kokomo feeder radar (KF) controller to expect runway 10C. The ATC services provided by the KF controller were unremarkable and the aircraft was handed off to the C90 TRACON final radar (WF) controller. The WF controller cleared ENY3936 for the Instrument Landing System (ILS) approach to runway (RWY) 10C, and the flight crew acknowledged the clearance with a correct readback and reported no ILS anomalies or concerns.

[According to certified audio provided by the FAA, between 1450:46 CDT to 1537:25 CDT, the WF controller issued 16 ILS RWY 10C approach clearances including ENY3936. None of the other 15 flights reported anomalies or concern with the ILS.]

The flight crew of ENY3936 checked in with the ORD ATCT south local control (SLC) controller on the visual approach to runway 10C and reported no issues with the ILS. The SLC controller cleared ENY3936 to land on RWY 10C and the crew acknowledged and read back the landing clearance.

According to the FAA mandatory occurrence report (MOR) filed by ORD ATCT, the SLC controller observed ENY3936 lined up for RWY 10L when the airplane was on short final, then verbally coordinated with local control three (3LC) controller (the controller who was responsible for runway 10L) prior to ENY3936 landing. No overflight was observed, there was no traffic on or crossing RWY 10L, and there was no loss of standard separation.

The ATC services provided by the SLC controller were deficient in accordance with FAA directives. Specifically, the SLC controller did not advise the crew of ENY3936 that they were aligned to the wrong runway and did not issue control instructions to prevent the wrong surface landing (see ATC Procedural References section below).

ATC Supporting Data

The following data/information was provided by the FAA and used in conducting this ATC Services Review.

FROM C90 TRACON:

- FALCON Replay (.MP4 format) - FOUO-CUI.
- Certified ATC audio recordings.
- Daily Record of Facility Operation (Form FAA 7230-4)

FROM ORD ATCT:

- Certified ATC audio recordings.
- ASDE-X Replay (.MP4 format) - FOUO-CUI
- Mandatory Occurrence Report (MOR)
- Daily Record of Facility Operation (Form FAA 7230-4)
- Preventative Maintenance Log for the Runway 10C ILS
- Status/Diagnostic/Reliability Report for the Runway 10C ILS

FROM FAA TECHNICAL CENTER:

- ASDE-X Replay with analysis - FOUO-CUI

ATC Procedural References

FAA Order JO 7110.65AA, Air Traffic Control, stated in part:

3-10-5. LANDING CLEARANCE

- a. When issuing a clearance to land, first state the runway number followed by the landing clearance. If the landing runway is changed, controllers must preface the landing clearance with "Change to runway" followed by the runway number. Controllers must then restate the runway number followed by the landing clearance.

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PHRASEOLOGY-

RUNWAY (number) CLEARED TO LAND. Or
CHANGE TO RUNWAY (number, RUNWAY (number) CLEARED TO LAND.

NOTE-

The purpose of the "change to runway" phraseology and restating the runway number is to emphasize to the pilot that they are being cleared to land on a runway other than what they were expecting.

b. When you become aware that an aircraft is aligned with the wrong surface, inform the pilot and:

1. Issue control instructions/clearances, or

EXAMPLE-

"United four twenty three, go-around, you appear to be aligned with the wrong runway." "American sixty three, go-around, you appear to be aligned with a taxiway." or

"Southwest two thirty nine, you appear to be aligned with Runway 27 Left (pertinent information), Runway 27 Left, cleared to land."

2. If time permits, verify the pilot is aligned with the correct runway. Issue control instructions/clearances as necessary.

EXAMPLE-

"Twin Cessna four one four lima bravo, verify you are aligned with Runway 27 Left."

Airport / Airfield Information

PERTINENT RUNWAY INFORMATION:

- 10C/28C | 10800 ft x 200 ft | CONC-E GRVD
- 10L/28R | 13000 ft x 150 ft | ASPH-CONC-G GRVD

FAA Certified ADS-B Data

The below information and included graphics were developed using certified Automatic Dependent Surveillance - Broadcast (ADS-B) data provided by the FAA. These data are direct source data that has extracted and exported by the FAA's Office of Accident Investigation and Prevention (AVP-100) using the SBS Analysis Tool (SAT). A surveillance system in which an aircraft or vehicle to be detected is fitted with cooperative equipment in the form of a data link transmitter. The aircraft or vehicle periodically broadcasts its GPS-derived position and other information such as velocity over the data link, which is received by a ground-based transmitter/receiver (transceiver) for processing and display at an air traffic control facility. ADS-B data is subject to coverage limitations like any other system that relies on line-of-sight signal transmission, so there can be portions of a flight track that are unavailable, or will have to be combined with other source data for the most complete flight track.

Pertinent NOTAM Information

The following NOTAMs pertaining to RWY 10C were in effect at the time of the wrong surface landing:

- !ORD 06/102 ORD RWY 10C ALS U/S 2406040312-2412011200
- !ORD 06/103 ORD NAV ILS RWY 10C CAT II NA 2406040314-2412011200
- !FDC 4/8944 ORD IAP CHICAGO O'HARE INTL, CHICAGO, IL. RNAV (GPS) RWY 10C, AMDT 1B...DISREGARD NOTE:
LNAV PROCEDURE NA DURING SIMULTANEOUS OPERATIONS. I-SXH ILS OR GLIDESLOPE OUT OF SERVICE.
2406141528-2410312359EST
- !ORD 09/258 ORD RWY 10C HLDG PSN MARKINGS AT TWY GG OBSC 2409101521-2410012000
- !ORD 09/167 ORD RWY 10C/28C CL MARKINGS OBSC 2409071031-2409281000

The operator had provided information stating that there was a NOTAM reporting the 10C glidepath was unusable from June 4, 2024 through October 31, 2024. According to FAA records, this NOTAM was canceled on September 18, 2024, seven days prior to the wrong surface landing. The following information pertaining to this NOTAM was obtained from the FAA's archived NOTAM information:

ORIGINAL NOTAM:

- !ORD 06/107 ORD NAV ILS RWY 10C GP U/S 2406040504-2410312359
- Issue Date UTC: 06/04/2024 0504
- Start Date UTC: 06/04/2024 0504
- End Date UTC: 10/31/2024 2359
- Cancel Date UTC: 09/18/2024 0502

Flight Track Information

See figures 1-3 below and ADS-B data located in Attachment 2: ADS-B Data.

ATC Communications

The following is a summary of the voice communications between ATC and the incident flight crew. This is not a transcript, and a copy of the certified audio recording is located in Attachment 3: ATC Audio Recordings. All times below are in central daylight time (CDT) and altitudes are in feet above mean sea level (msl). The ATC facilities involved in this incident were C90 TRACON and ORD ATCT. The positions of operation at C90 TRACON were the KF and WF positions. The positions of operation at ORD ATCT were the SLC and ground control (GC) positions. The tower phone number was redacted from the official audio by the NTSB.

SUMMARY OF COMMUNICATIONS BETWEEN ENY3936 AND C90 TRACON

- 1508:12 The crew of ENY3936 checked in with the KF controller descending out of 14,400 feet to 12,000 feet with automatic terminal information service (ATIS) information delta. The controller acknowledged and advised the crew to expect RWY 10C. The crew acknowledged runway 10C.
- 1508:49 The KF controller instructed the crew of ENY3936 to proceed direct MONKZ (a fix on the TRTLL SIX standard instrument arrival procedure) and to descend and maintain 10,000 feet. The crew acknowledged the instruction.
- 1513:10 The KF controller instructed the crew of ENY3936 to descend and maintain 7,000 feet. The crew acknowledged the instruction.
- 1513:53 The KF controller instructed the crew of ENY3936 to contact approach on frequency 133.62. The controller acknowledged the instruction.
- 1514:14 The crew of ENY3936 checked in with the WF controller descending out of 10,000 feet for 7,000 feet. The WF controller acknowledged and instructed the crew to expect RWY 10C. The crew replied "Ten c it is".
- 1516:38 The WF controller instructed the crew of ENY3936 to descend to 5,000 feet. The crew acknowledged the instruction.
- 1519:26 The WF controller instructed the crew of ENY3936 to turn right heading 360° and to reduce their speed to 210 knots. The crew acknowledged the instruction.
- 1520:32 The WF controller instructed the crew of ENY3936 to turn right heading 060° to intercept the localizer for RWY 10C. The crew acknowledged the instruction reading back "zero nine zero to intercept the localizer," to which the controller corrected restating heading 060°. The crew acknowledged the heading with a correct readback.
- 1521:33 The WF controller advised the crew of ENY3936 that they were one mile from SHARN (the intermediate fix (IF) on the ILS RWY 10C instrument approach at 13.2 distance measuring equipment (DME)), cleared them for the ILS RWY 10C approach, and instructed them to maintain 210 knots. The crew acknowledged with a correct readback.
- 1522:13 The WF controller instructed the crew of ENY3936 to maintain 170 knots to RAYYY (the IF on the ILS RWY 10C instrument approach at 4.8 DME), then to contact ORD ATCT on 120.75. The pilot acknowledged with a correct readback.

SUMMARY OF COMMUNICATIONS BETWEEN ENY3936 AND ORD ATCT

- 1524:28 The crew of ENY3936 checked in with the SLC controller on the visual approach to RWY 10C. The SLC controller provided the wind information, advised the crew they were number one, and cleared them to land on RWY 10C. The crew acknowledged with a correct readback.
- 1527:03 The SLC controller instructed the crew of ENY3936 to continue on RWY 10L, to turn left on taxiway yankee (Y), and issued a Brasher warning for possible pilot deviation. The crew responded "Stand by."

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1528:40 The crew of ENY3936 asked the SLC controller if they could stop where they were, and the controller responded instructing them to taxi straight ahead on TWY Y and hold short of TWY victor (V). The crew acknowledged the instruction.

1529:17 The crew of ENY3936 advised they were ready for the phone number and the SLC controller provided it. The crew acknowledged the phone number and the SLC controller instructed them to contact ground on 121.9. The crew acknowledged the frequency change.

1530:02 The crew of ENY3936 contacted the GC controller and advised they were on TWY Y holding short of TWY V. The GC controller asked confirmed the assigned gate with the crew and instructed them to taxi via TWY V and hold short of TWY bravo (B). The crew acknowledged the instruction.

1532:11 The GC controller instructed the crew of ENY3936 to turn right on TWY echo (E) and hold short of TWY B. The crew acknowledged the instruction.

1533:02 The GC controller instructed the crew of ENY3936 to continue via TWY B and side-step to TWY alpha (A), to TWY A15. The crew acknowledged the taxi instructions.

END OF ATC COMMUNICATION SUMMARY

Included Figures

Figure 1: A graphic depicting the overall flight track of ENY3963.

Figure 2: A graphic depicting the final flight track of ENY3936.

Figure 3: A graphic depicting the runway diagram for the wrong surface landing of ENY3936.

Docket Attachments

Attachment 1: ATC Logs and Records	Attachment 4: ASDE-X Replays - FOUO-CUI
Attachment 2: ADS-B Data	Attachment 5: FALCON Replays - FOUO-CUI
Attachment 3: ATC Audio Recordings	

AERONAUTICAL CHART EXCERPT

NOT FOR NAVIGATIONAL USE

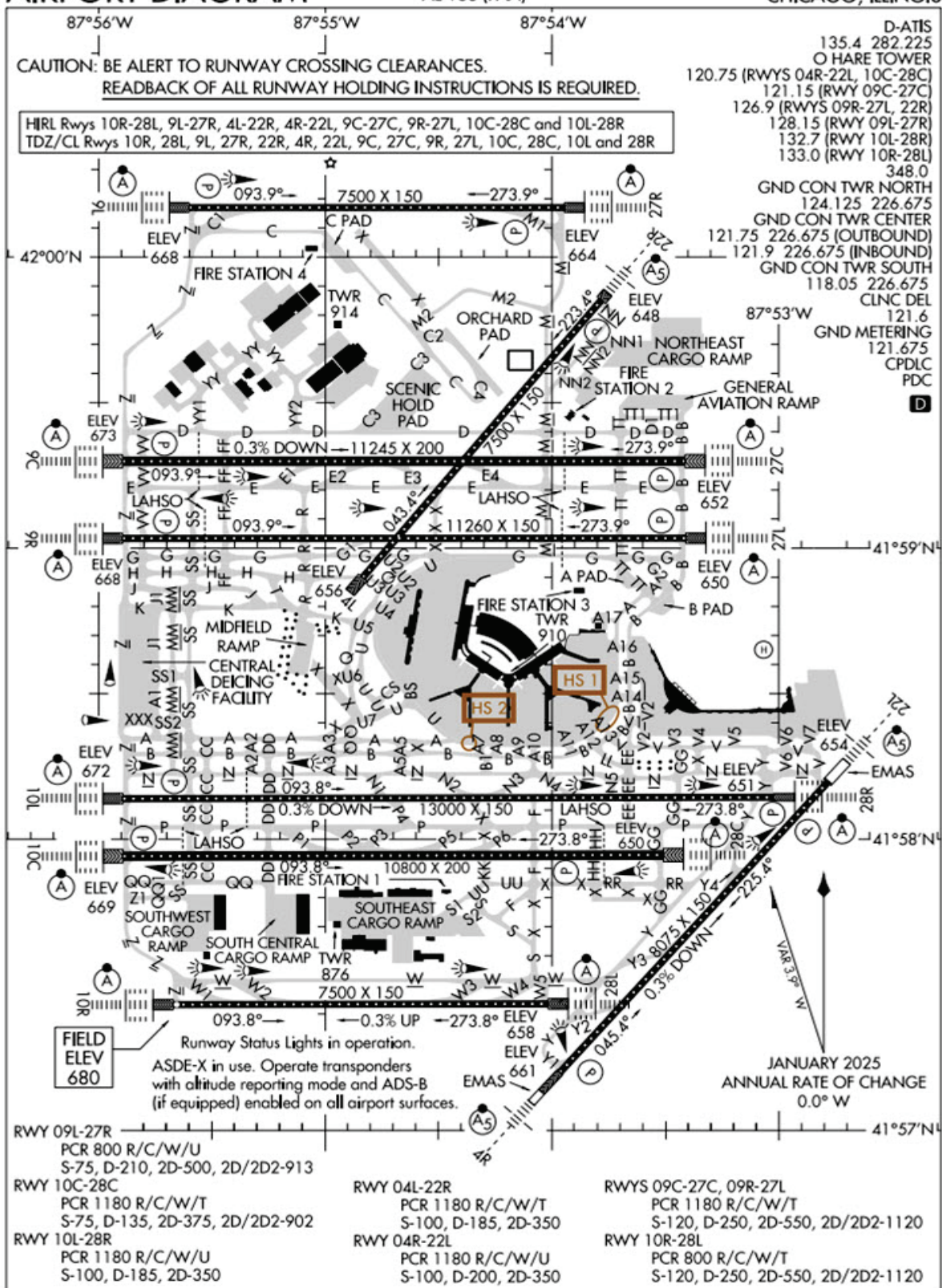


NOT FOR NAVIGATIONAL USE

NOT FOR NAVIGATIONAL USE

AIRPORT DIAGRAM

CHICAGO O'HARE INTL (ORD)
CHICAGO, ILLINOIS



AIRPORT DIAGRAM

CHICAGO, ILLINOIS
CHICAGO O'HARE INTL (ORD)

NOT FOR NAVIGATIONAL USE

NOT FOR NAVIGATIONAL USE

25107

CHICAGO, ILLINOIS

AL-166 (FAA)

ILS PRM RWY 10C (CAT II & III)
(CLOSE PARALLEL)
CHICAGO O'HARE INTL (ORD)

LOC/DME I-SXH 108.95 Chan 26(Y)	APP CRS 093°	Rwy Idg 10540 TDZE 669 Apt Elev 680
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RNAV 1-GPS or RADAR required for procedure entry. DME or RADAR required.

From GIBNS: RNAV-1 GPS required.

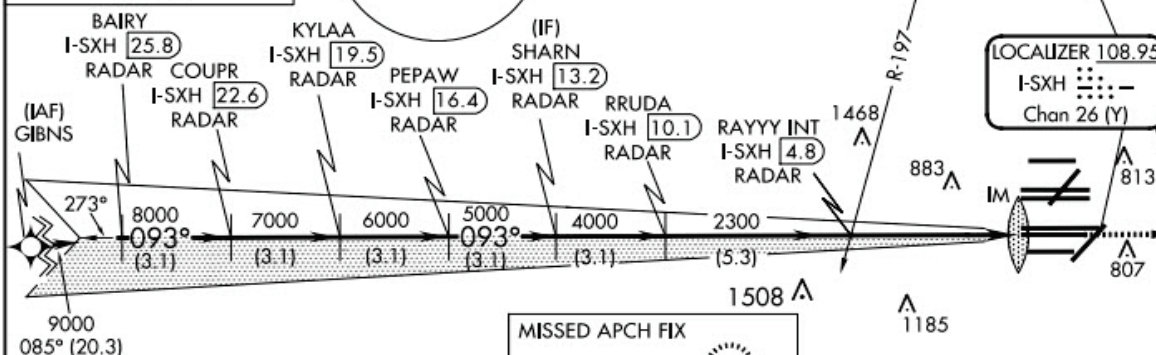
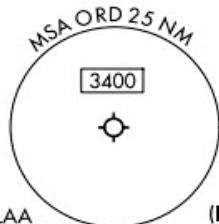
CAT II: RVR 1000 authorized with specific OPSPEC, MSPEC, or LOA approval and use of Autoland or HUD touchdown.
 Simultaneous approach authorized. Use of FD or AP required during simultaneous operations. Dual VHF comm required. See additional requirements on AAUP.



MISSED APPROACH: Climb to 4000 on heading 093° and CGT VORTAC R-336 to CGT VORTAC and hold.

D-ATIS 135.4 282.225	CHICAGO APP CON 119.0 292.125	O'HARE TOWER 120.75 348.0 PRM 119.625	GND CON 124.125 (TWR NORTH) 118.05 (TWR SOUTH) 226.675 (ALL TWRS)	(TWR CENTER) 121.75 (OBND) 121.9 (IBND)	CLNC DEL 121.6	CPDLC
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ALTERNATE MISSED APCH FIX



MISSED APCH FIX

CHICAGO HEIGHTS

CGT

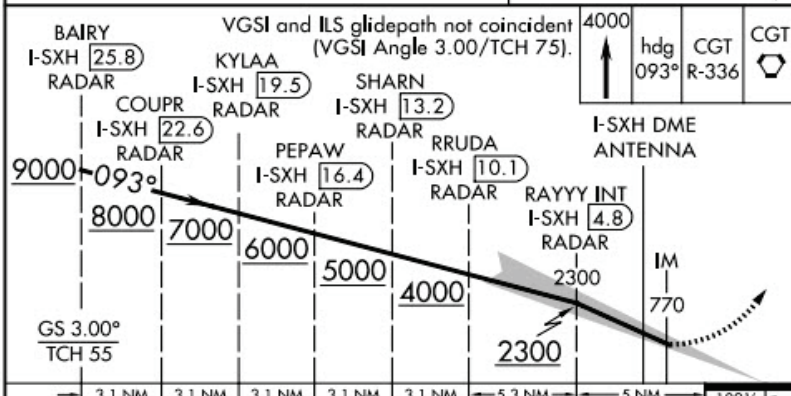
114.2

Chan 89

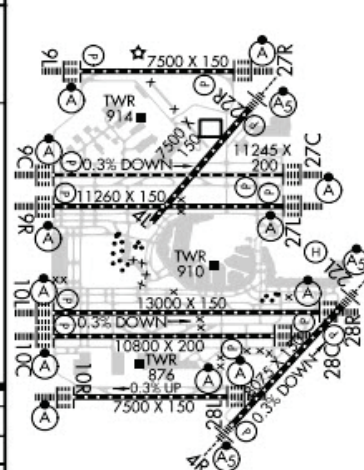
ELEV 680

D

TDZE 669



CATEGORY	A	B	C	D
S-ILS 10C	CAT II RA 102/12 100 DA 769			
S-ILS 10C	CAT III RVR 06			

**CATEGORY II and III ILS - SPECIAL AIRCREW
& AIRCRAFT CERTIFICATION REQUIRED**


HIRL all Rwy's
 TDZ/CL all Rwy's except 4L

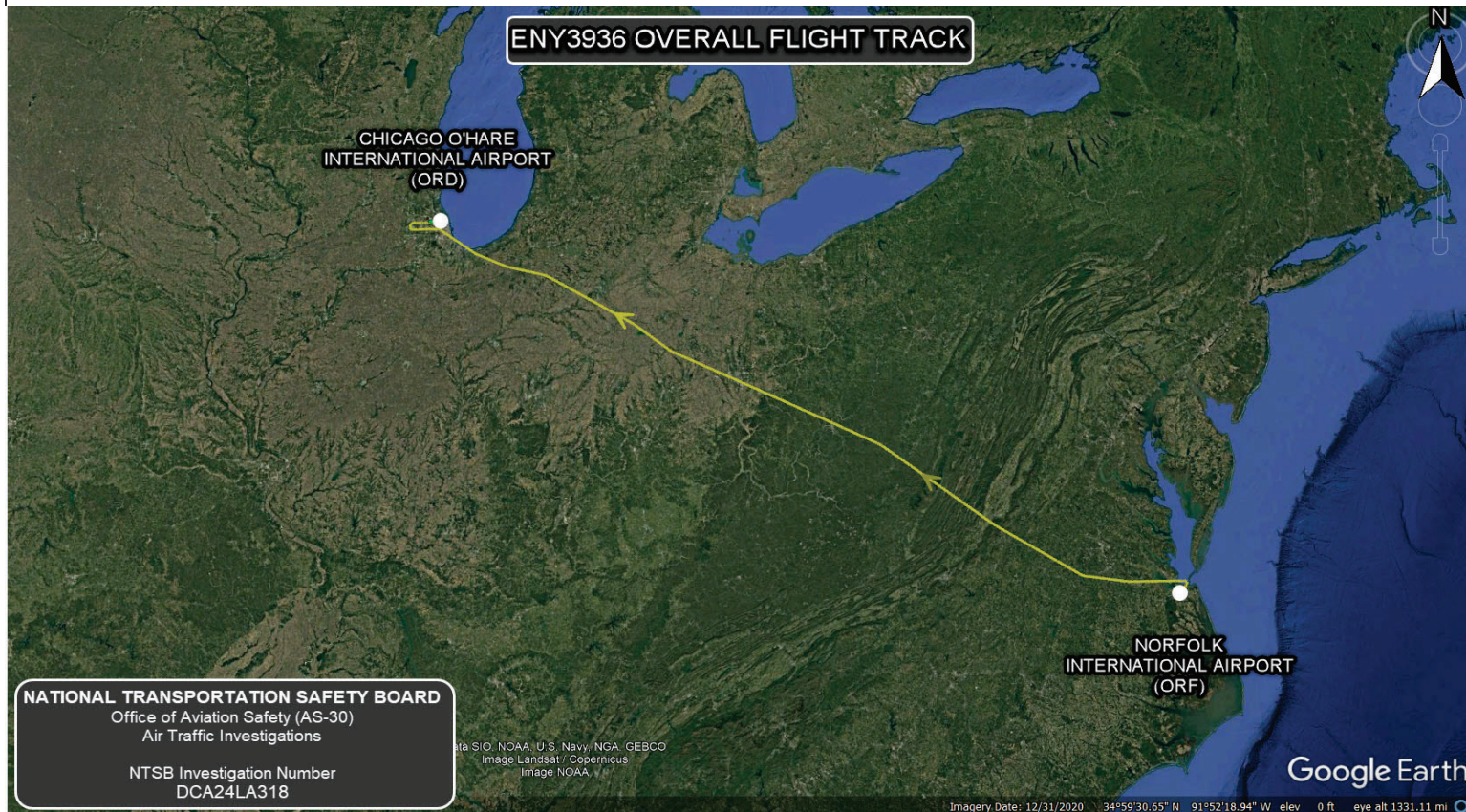
CHICAGO, ILLINOIS
Amdt 1A 03JAN19

41°59'N-87°54'W

CHICAGO O'HARE INTL (ORD)

ILS PRM RWY 10C (CAT II & III) (CLOSE PARALLEL)
NOT FOR NAVIGATIONAL USE

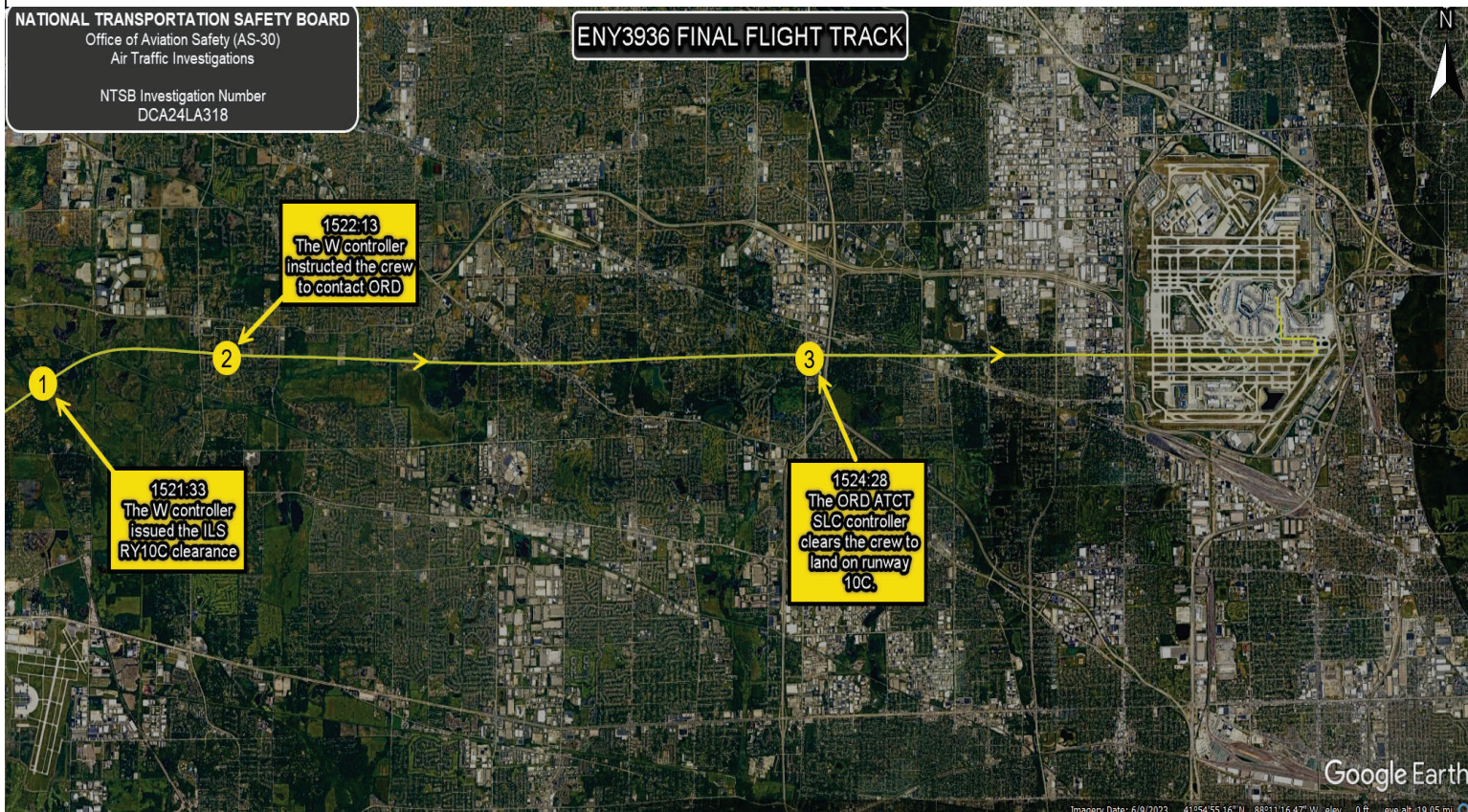
Figure 1



Caption: A graphic depicting the overall flight track of ENY3963.

ADD

Figure 2



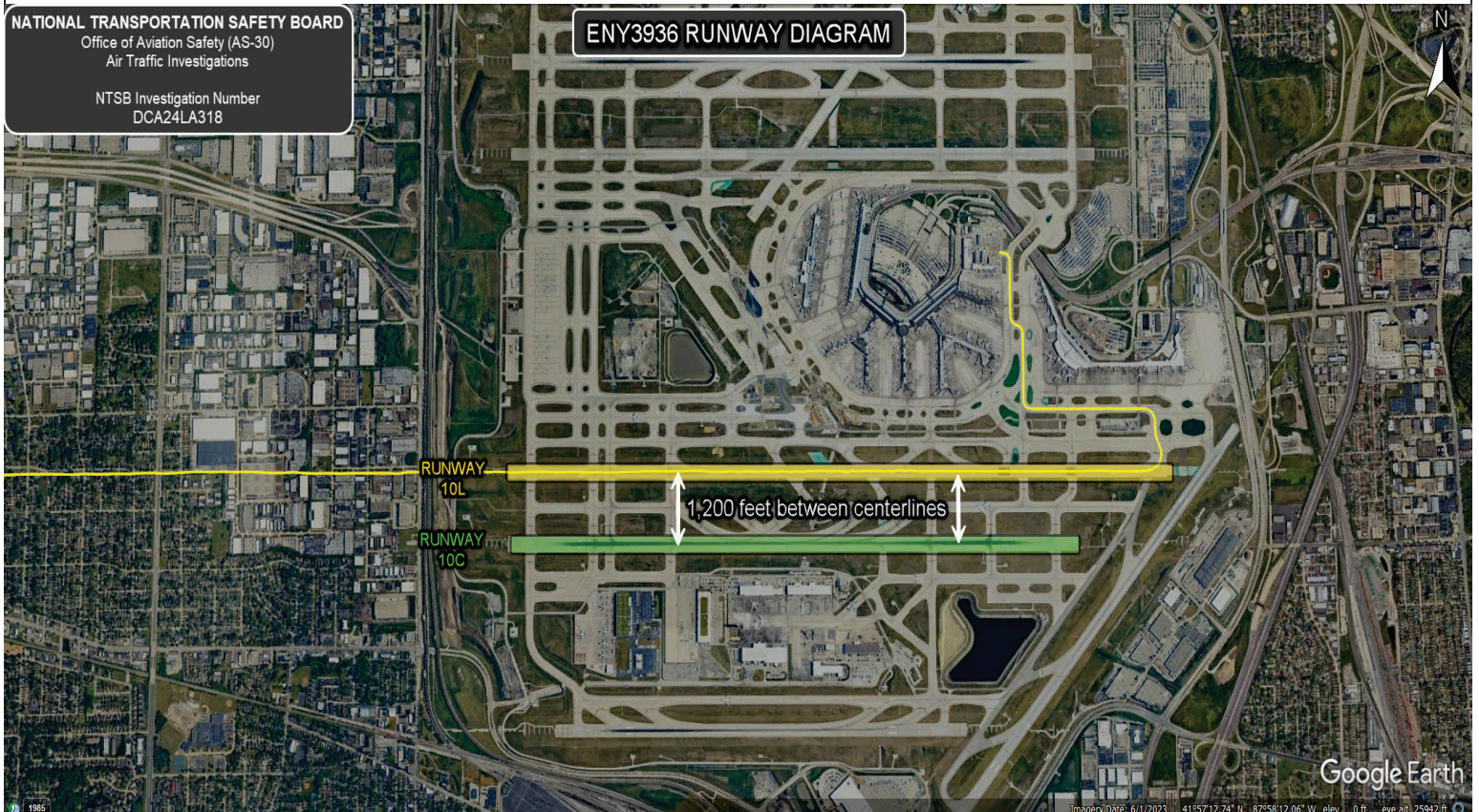
Caption: A graphic depicting the final flight track of ENY3936.

ADD

Figure 3

NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety (AS-30)
Air Traffic Investigations
NTSB Investigation Number
DCA24LA318

ENY3936 RUNWAY DIAGRAM



Caption: A graphic depicting the runway diagram for the wrong surface landing of ENY3936.

ADD