



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

February 9, 2021

Specialist's Factual Report

AIR TRAFFIC CONTROL

CEN20FA032

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A. ACCIDENT

Location: Victoria, Texas

Date: December 9, 2019

Time: 2017 central standard time (CST)¹
0217 coordinated universal time (UTC)²

Airplane: Cessna 208B, N4602B, Martinaire Aviation 679 (MRA679)

B. AIR TRAFFIC CONTROL GROUP

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C. SUMMARY

On December 9, 2019, about 2017 central standard time, a Cessna 208B airplane, N4602B, impacted terrain during initial climb near Victoria, Texas. The airline transport pilot, who was the sole occupant, was fatally injured, and the airplane was destroyed. The airplane was registered to and operated by Martinaire Aviation LLC under the provisions of Title 14 *Code of Federal Regulations* Part 135 as a cargo flight. Night visual meteorological conditions prevailed for the instrument rules (IFR) flight, which departed about 2004 from Victoria Regional Airport (VCT), Victoria, Texas, with an intended destination of George Bush Intercontinental Airport (IAH), Houston, Texas.

D. DETAILS OF THE INVESTIGATION

On Tuesday December 17, 2019, the Air Traffic Control (ATC) workgroup arrived at the Houston Air Route Traffic Control Center (ZHU ARTCC). The group received an inbrief from the air traffic manager; attendees included the National Air Traffic Controllers Association (NATCA) facility representative, members of the FAA event investigations team, district manager for air traffic services, ZHU training manager, ZHU support manager, ZHU quality control manager, and a Central Service Area quality control representative. The inbrief contained a review of ATC services provided by the ZHU controllers, which included data requests of radar, communications, flight planning, and a radar replay of the accident flight presented on the en route automation modernization (ERAM)³ display. Additionally, the workgroup conducted interview with the air

¹ All times are central standard time (CST) unless otherwise noted.

² Coordinated universal time (UTC) is the primary time standard by which the world regulates clocks and time.

³ The ERAM system processes flight and surveillance data provides communications and generates display data to air traffic controllers.

traffic controller signed on during the accident and the air traffic controller who tried to assist the accident pilot.

On Wednesday, December 18, 2019, the workgroup reconvened at ZHU and conducted interviews with the “D”⁴ side controller, assisting the accident controller, the operations supervisor, and the support manager. The workgroup also continued to collect and review facility data.

On Thursday, December 19, 2019, the workgroup reconvened at VCT. The workgroup collected ATC communications data, directives, and conducted an interview with the local controller (LC). After the interview, the workgroup completed and approved the field notes, and then departed the facility.

E. FACTUAL INFORMATION

1.0 History of Flight

The accident occurred during a planned flight from the VCT Airport with a destination of IAH Airport. The Automatic Dependent Surveillance-Broadcast (ADS-B) flight track of the accident airplane reflected a series of left and right turns after departure (see figure 1). The history of the flight was derived from VCT communications with a start time using elapsed times, and ZHU communications with embedded times.

At 1946:37, the VCT local controller contacted the ZHU R58 controller and requested an IFR⁵ clearance for MRA679. The ZHU controller issued the clearance “cleared to Bush Intercontinental via GMANN DUUUK2 arrival⁶, climb and maintain seven thousand⁷, squawk four six five zero, hold for release.”

At 1949:05, the pilot of MRA670 contacted VCT controller. The VCT controller replied, “cleared to india hotel airport [sic] direct GMANN for the DUUUK3 arrival maintain seven thousand departure frequency one three five point zero five squawk four six five zero”. The pilot of MRA679 read back the clearance.

At 1950:41, the pilot of MRA679 requested the spelling of “GMANN”. The VCT controller provided the spelling phonetically.

At 1952:08, the VCT controller recorded the Automatic Terminal Information Service (ATIS)⁸ information “Victor”, valid for 0151 UTC “wind one four zero at six visibility six haze few clouds two thousand eight hundred ceiling four thousand seven hundred overcast temperature

⁴ D-Side are radar associate controllers provide assistance to the radar controller handling air traffic control administrative tasks.

⁵ An IFR flight plan is the planned route of flight conducted under instrument flight rules. The flight plan identifies the airplane’s navigational capability and what routes it may or may not navigate to the destination.

⁶ The air traffic controller issued a clearance via the DUUUK2 arrival; however, it had expired on December 5, 2019. The DUUUK3 became effective on December 5, 2019.

⁷ All altitudes are mean sea level (msl) unless otherwise noted.

⁸ The ATIS is used to provide advance noncontrol airport/terminal area and meteorological information to aircraft.

two three dew point one niner altimeter two niner eight two I-L-S runway one three left approach in use notice to airman⁹ runway one three right and taxiway Delta closed advise on initial contact you have Victor”. The VCT controller reviewed the ATIS and made a blanket transmission to all aircraft on frequency that information Victor was current.

At 1954:31, the pilot of MRA679 contacted the VCT controller and requested “taxi with Uniform”. The VCT controller instructed the pilot to taxi to runway 13 left via “alpha, bravo intersection departure”. The pilot read back the instructions.

At 1957:34, the pilot of MRA679 reported at “runway three one left at Alpha request progressive taxi”. There was no reply from the VCT controller.

At 1957:50, the VCT controller transmitted to the pilot of MRA679 “... you are going the wrong way make a one eighty and taxi ah Alpha to runway one three left”. The pilot of MRA679 acknowledged.

At 2001:57, the VCT local controller contacted the ZHU controller and requested a release for MRA679. The ZHU controller issued the VCT controller “... is going to I-A-H he is released on course, maintain three thousand.”

At 2002:37, the VCT controller transmitted to the pilot of MRA679 “...proceed on course maintain three thousand runway one three left at Bravo cleared for takeoff”. The pilot of MRA679 read back the clearance.

At 2004:23, the VCT controller instructed the pilot of MRA679 to contact ZHU; the pilot acknowledged.

At 2004:26, a position relief briefing began on the ZHU R58 position. During the relief briefing the VCT controller called ZHU and advised MRA679 was “coming to you, he is a winner”.

At 2004:46, the pilot of MRA679 checked onto the ZHU frequency and the off going ZHU controller radar identified the MRA679 and instructed the pilot to maintain 3,000 feet. The pilot of MRA679 read back the instructions.

At 2005:50, the ZHU controller asked the pilot of MRA679 to say heading. The pilot responded with an unintelligible transmission.

At 2007:22, the ZHU controller instructed the pilot of MRA679 to proceed direct to GMANN (see figure 2). The pilot responded, “cleared direct GMANN six seven nine”.

At 2008:18, the ZHU controller transmitted to the pilot of MRA679 “... I’m showing you heading southeast bound.” The pilot responded with an unintelligible transmission.

⁹ A NOTAM is a notice containing information essential to personnel concerned with flight operations but not known far enough in advance to be publicized by other means. It states the abnormal status of a component of the National Airspace System (NAS)– not the normal status.

At 2008:50 the ZHU controller instructed the pilot of MRA679 to fly a heading of 035 degrees. The pilot read back the instruction.

At 2009:01, the ZHU controller instructed the pilot of MRA679 to maintain 3,000 feet. The pilot of MRA679 replied with “maintain three thousand six seven nine”.

At 2009:41, the ZHU controller instructed the pilot of MRA679 to advise when he was on a 035-degree heading and reiterated the instruction to fly heading 035 degrees (see figure 3). The pilot of MRA679 replied with an unintelligible transmission.

At 2010:50, the ZHU controller instructed the pilot of MRA679 to climb and maintain 6,000 feet. The pilot of MRA679 readback the altitude assignment.

At 2011:20, the ZHU controller transmitted to MRA679 “I’m showing you like going back left, right, left and right, what are you showing on your heading?” The pilot of MRA679 replied, “I’m heading um ah three six zero I am correcting; I have some instrument problems...” (see figure 4) The ZHU controller asked the pilot of MRA679 if they needed to go back to VCT. The pilot advised he would continue to IAH.

At 2011:57, the ZHU controller transmitted “I’m showing you seven miles northeast Laredo airport. I’m showing you out of three thousand seven hundred feet.” A few seconds later the ZHU controller issued the pilot a correction and revised the location as 7 miles northeast VCT airport.

At 2012:19, the pilot of MRA679 transmitted “I go back to Victoria” and the ZHU controller instructed the pilot to maintain 3,000 feet.

At 2012:49, the ZHU controller transmitted to the pilot of MRA679 “cleared direct Victoria airport, correction, the Victoria airport is currently at your 12 o’clock, six miles, report the field in sight.” The pilot of MRA679 responded with the callsign.

At 2013:08, the ZHU controller instructed the pilot of MRA679 to maintain 4,000 feet. The pilot responded, “maintain four thousand I request three thousand if possible...”. The ZHU controller asked the pilot to say again and the pilot again requested 3,000 feet. The ZHU controller asked the pilot if he wanted 6,000 feet and the pilot responded, “ah three thousand”.

At 2014:22, the ZHU controller asked the pilot of MRA679 “...do you have the Victoria airport in sight?” The pilot responded, “looking for it six seven nine.” The ZHU controller then instructed the pilot of MRA679 “roger cleared visual approach one three left into Victoria.” The pilot acknowledged the clearance.

At 2014:52, the pilot of Boutique flight 465 (BTQ465) transmitted “hey departure, this is BTQ465, unless that person’s ah familiar with the area he may not see it it’s really hazy.”

At 2015:22, the ZHU controller asked the pilot of MRA679 to verify he had the airport in sight. The pilot of MRA679 responded he was looking, and the rest of the transmission was unintelligible. (see figure 5)

At 2015:30, the ZHU controller then transmitted “we’ll just vector you for the ah instrument approach, maintain three thousand feet.” The pilot of MRA679 responded “roger”.

At 2015:45, the ZHU controller asked the pilot if he was area navigation (RNAV¹⁰) capable. The pilot responded negative.

At 2015:56, the ZHU controller again asked the pilot of MRA679 if he was RNAV capable, the pilot responded with an unintelligible transmission. (see figure 6)

At 2016:19, the ZHU controller turned over the operational responsibility of the sector to a controller who was more experienced and a pilot. The new controller advised the pilot of MRA679 “... climb and maintain three thousand, let me vector you through this approach. (MRA679) climb and maintain three thousand.” There was no reply from the pilot of MRA679. The ZHU controller repeated attempts to contact the pilot of MRA679 with no reply from the pilot.

At 2016:43, the ZHU controller contacted the VCT controller and asked if he had seen MRA679. The VCT controller responded “I don’t see him, there’s a lot of haze and clouds rolling in.”

There were no further transmissions to or from the pilot of MRA679.

¹⁰ Area Navigation (RNAV) enables aircraft to fly on any desired flight path within the coverage of ground or space – based navigation aids, within the limits of the capability of a aircraft self-contained systems, or a combination of both capabilities.

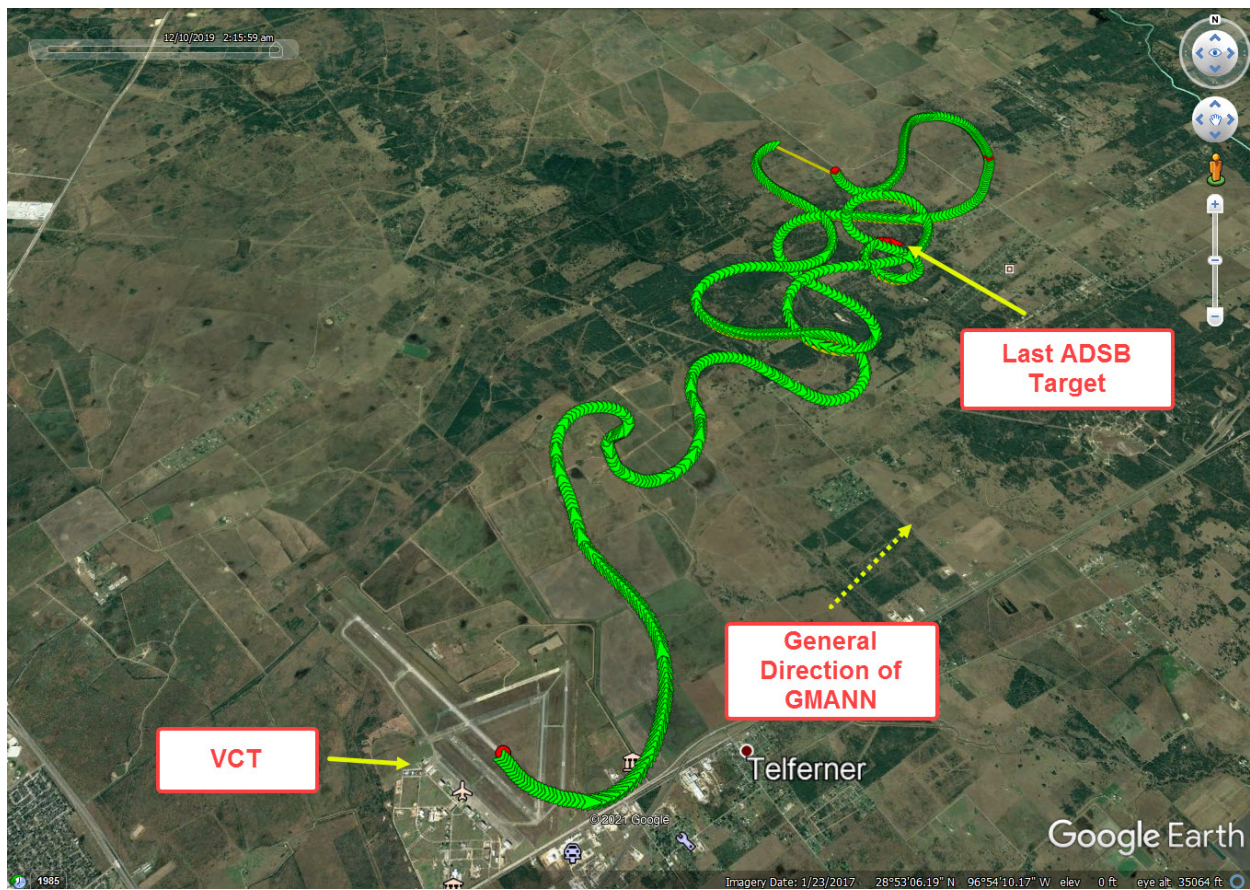


Figure 1 – Illustrates the entire flight of the airplane after departing VCT.

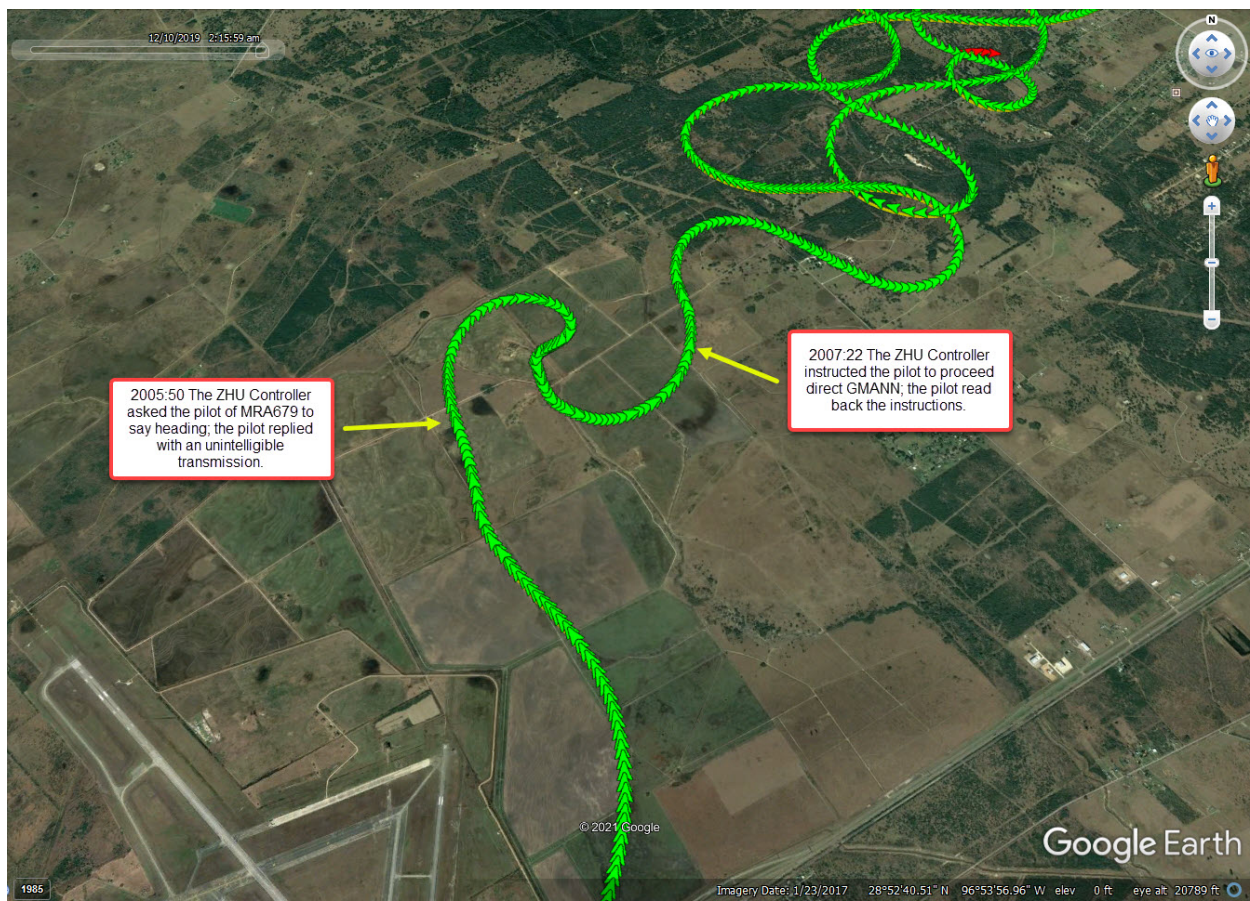


Figure 2 - Illustrates the location of the airplane when the ZHU controller instructs the pilot to proceed direct the RNAV fix GMANN

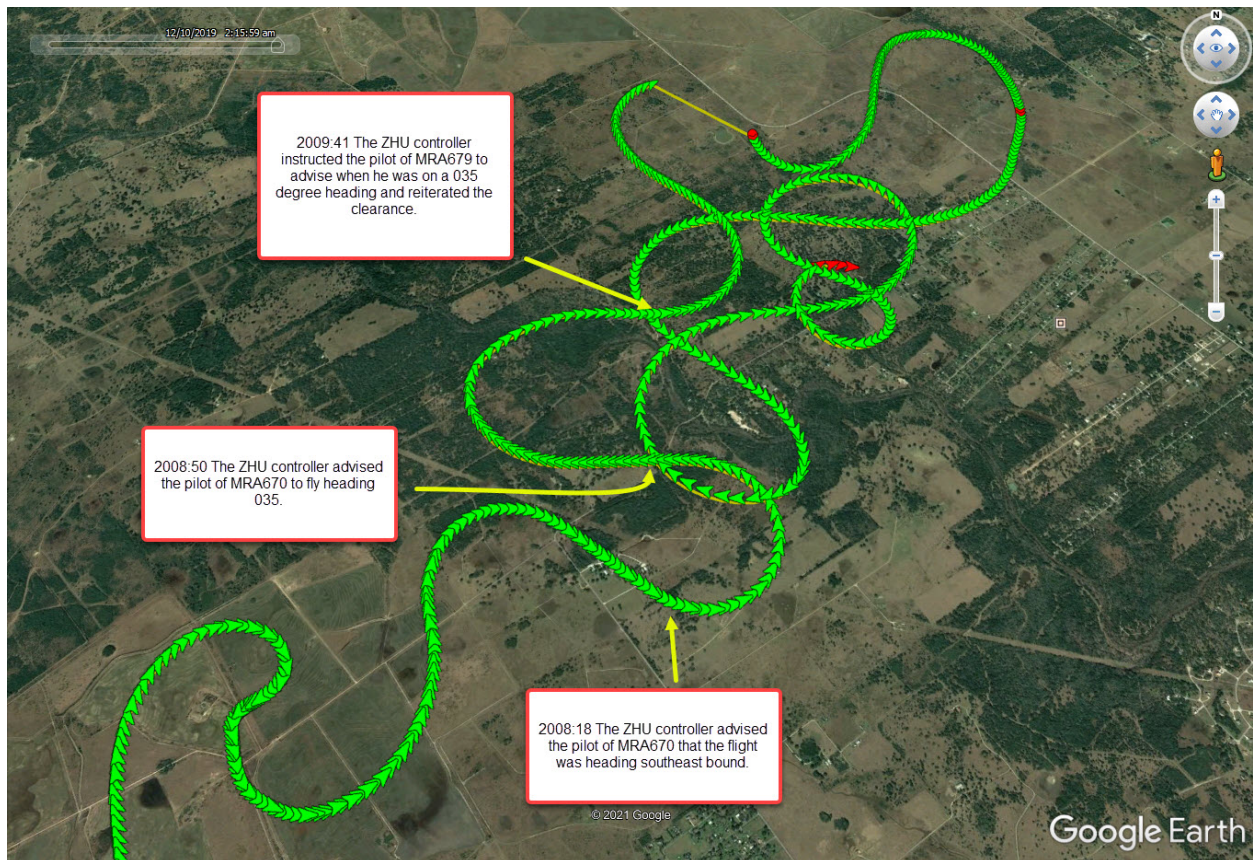


Figure 3 –Illustrates the location of the airplane when the ZHU controller reiterated the heading of 035 degrees.

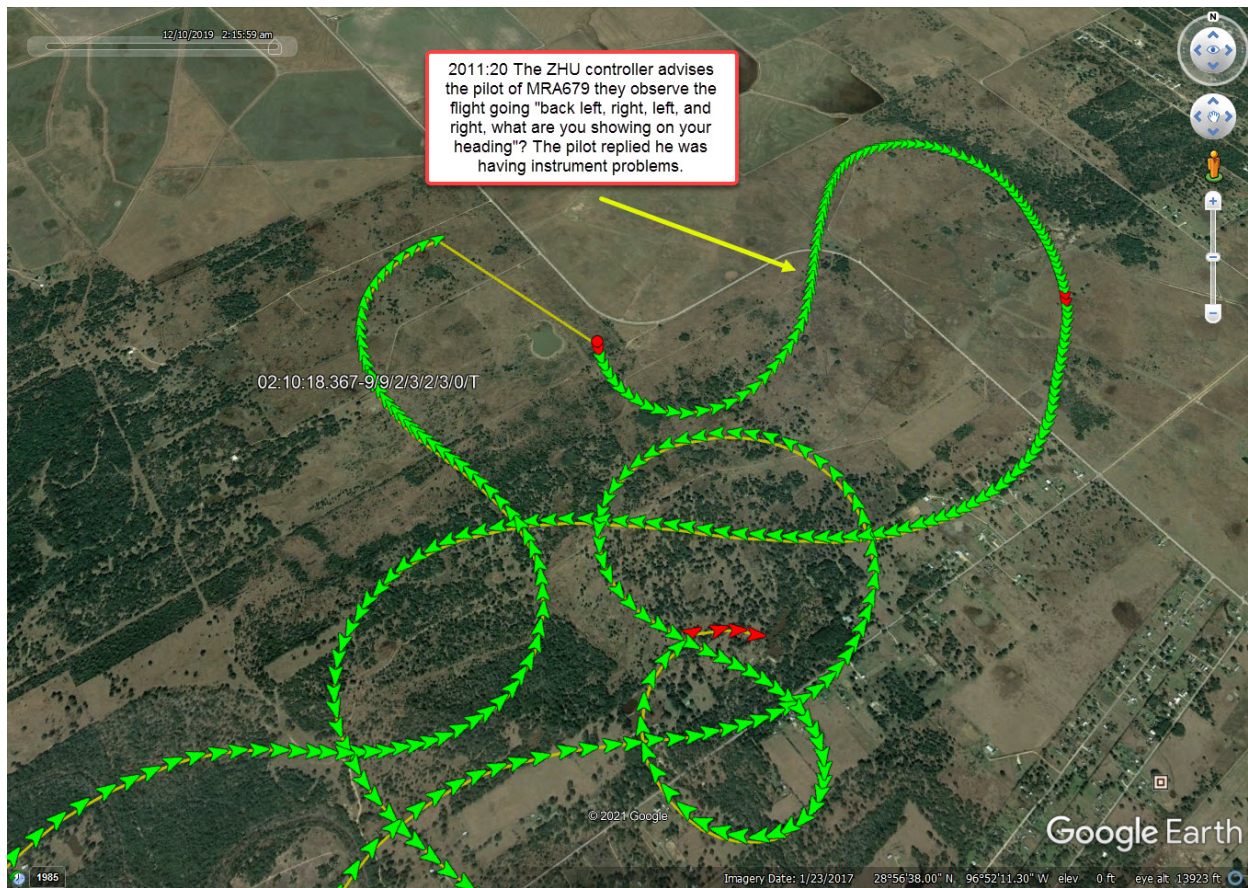


Figure 4 – Illustrates the location of the airplane when the ZHU controller advised the pilot of the course deviations left and right.

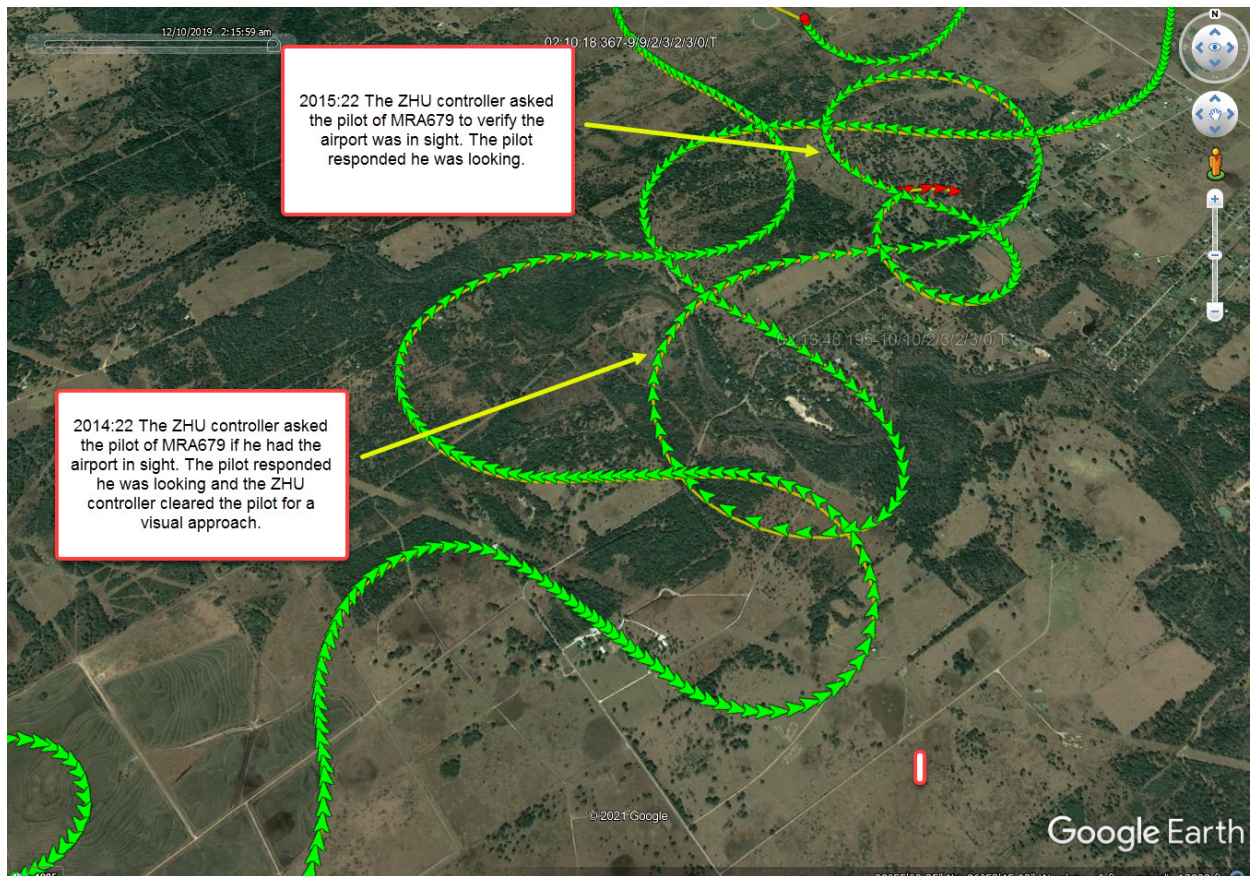


Figure 5 – Illustrates the location of the airplane when the ZHU controller asked the pilot the second time if the airport was in sight

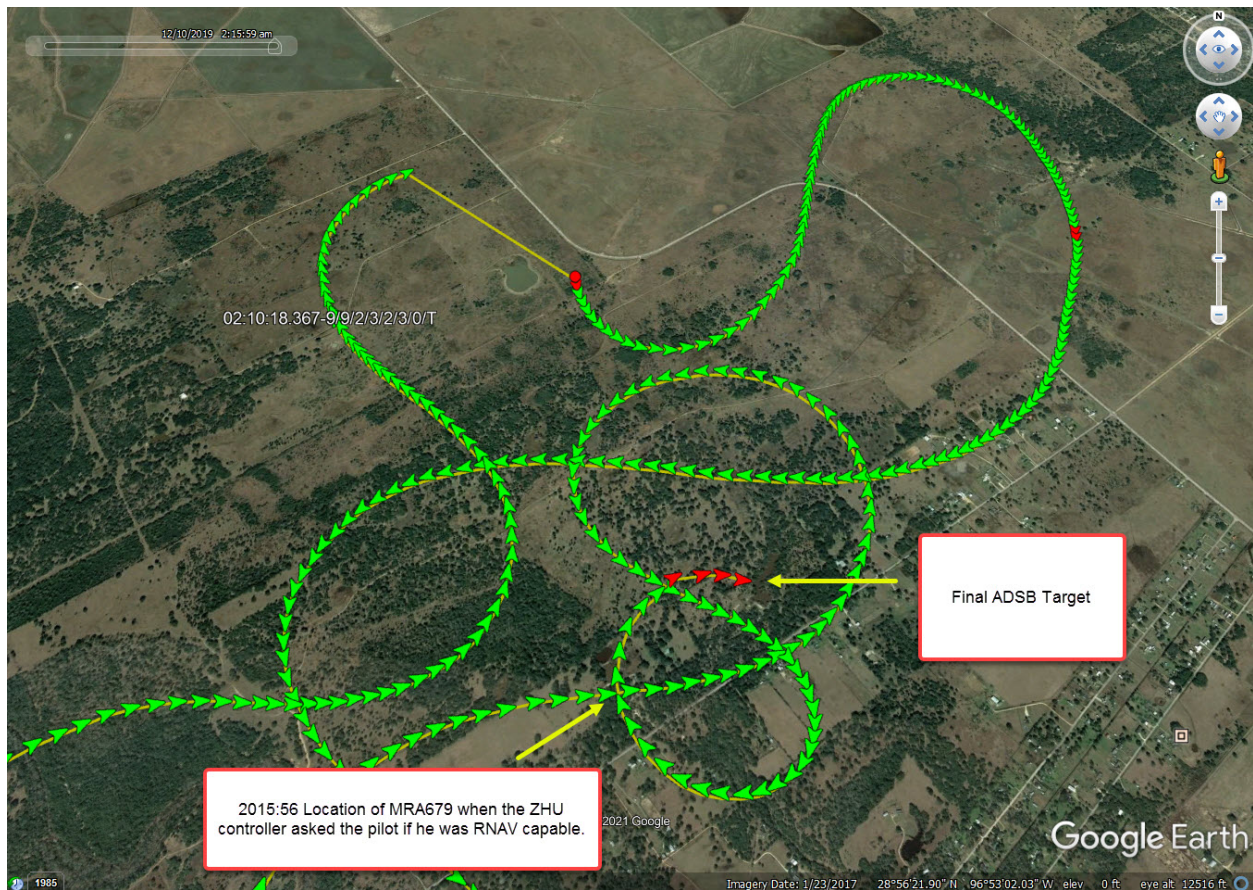


Figure 6 – Illustrates the location of the airplane when the ZHU controller asked the pilot if he was RNAV capable.

2.0 Radar Data

In general, two types of radar are used to provide position and track information for aircraft cruising at high altitudes between airport terminal airspaces, and for those operating at low altitude and speeds within terminal airspaces. Additional surveillance data may be obtained through Automatic Dependent Surveillance-Broadcast (ADS-B).

ADS-B data is aircraft global positioning system (GPS) derived position reports and other aircraft information transmitted by the airplane and received through a ground infrastructure and shared with other users within the national airspace system (NAS). Air traffic controllers across the nation are able to monitor aircraft using either ground-based radar or ADS-B.

Airport surveillance radars (ASRs) are short range (60 nm) radars used to provide air traffic control services in terminal areas. ASR antennas rotate at 13 to 14 rpm, resulting in a radar return every 4.6 to 5 seconds. Data for this report was obtained from the FAA ZHU area Air Route Surveillance Radars (ARSRs) and was of good quality and utilized by air traffic control.

To improve the consistency and reliability of ADS-B and radar returns, airplanes are equipped with transponders. For ADS-B equipped airplanes, the transponders are assigned a unique Mode-S address for each airplane. The accident airplanes assigned Mode S transponder

address was A59C3B and the accident airplane was assigned a transponder beacon code of 4650. The ADS-B data for this report was obtained from the FAA and was of good quality and utilized by air traffic control.

3.0 Weather Data

The Victoria Airport meteorological aerodrome report (METAR) issued on the 10th of May at 0151 UTC was reporting wind from 140° degrees at 6 knots, visibility 6 statute miles, few clouds at 2,800 feet, overcast at 4,700 feet, temperature 23°C (73°F), dew point 19°C (66°F), altimeter 29.82 inHg (1010 hPa).

METAR KVCT 100151Z 14006KT 6SM HZ FEW028 OVC047 23/19 A2982
RMK A02 SLP097 T02280194=

4.0 MRA679 Flight Plan Information

Martinaire Aviation dispatchers filed an instrument flight plan for MRA679 using the airplane equipment suffix “/A”¹¹. The equipment suffix “/A” indicated the airplane was equipped to utilize distance measuring equipment (DME)¹² in addition to conventional navigation equipment like Very High-Frequency (VHF) Omnidirectional Range (VORs)¹³ for navigation and had a transponder with a Mode C. The airplane was capable of navigating between VOR’s and could determine a position from a fix or along a route utilizing the DME equipment. The route of flight filed by Martinaire was Victoria direct to the Palacios VORTAC¹⁴ (PSX) to join victor airway¹⁵ 13 (V13) to the fix GMANN direct to the fix DUUUK and join the DUUUK3 arrival (see figure 9) into IAH.

VCT..PSX.V13.GMANN..DUUUK..DUUUK3..IAH

5.0 Adapted Departure/Arrival Routes (ADARs)

As part of the ZHU Adapted Departure/Arrival Routes (ADARs) program from the VCT airport, the ZHU ERAM system autonomously modified MRA679’s flight plan to a new routing of VCT direct to the RNAV fix GMANN, direct to the fix DUUUK to join the DUUUK3 arrival into IAH. An ADAR is used to control the flow and separation of traffic departing and arriving between specific pairs of airports. Based on information about the flight and restrictions encoded

¹¹ Denotes the airplanes navigational capabilities.

¹² DME is a navigation beacon, usually coupled with a VOR beacon, to enable an aircraft to measure their position relative to that beacon. Aircraft send out a signal which is sent back after a fixed delay by the DME ground equipment. An aircraft can compute its distance to the beacon from the delay of the signal perceived by the aircraft's DME equipment using the speed of light.

¹³ VOR is a ground-based electronic system that provides a azimuth information for high and low altitude routes and airport approaches.

¹⁴ VORTAC is a radio-based navigational aid for aircraft pilots consisting of a co-located VOR beacon and a tactical air navigation system (TACAN) beacon.

¹⁵ A victor airway is a low altitude airway below 18,000 feet and comprised of one or more VORs.

in ADAR adaptation data by the ZHU airspace and procedures specialist, an ADAR may be applied automatically to the flight during the route conversion process.

VCT..GMANN..DUUUK..DUUUK3..IAH

As a result of the NTSB's investigation, the FAA modified both the ADARs and ADARs departing from VCT so that airplanes with conventional navigation equipment like VOR's, may either join a radial or first proceed direct a NAVAID. For airplanes flying VCT to IAH the ADAR now reflects VCT direct to the Palacios VORTAC and join the DUUUK 3 arrival into IAH. (see attachment 2)

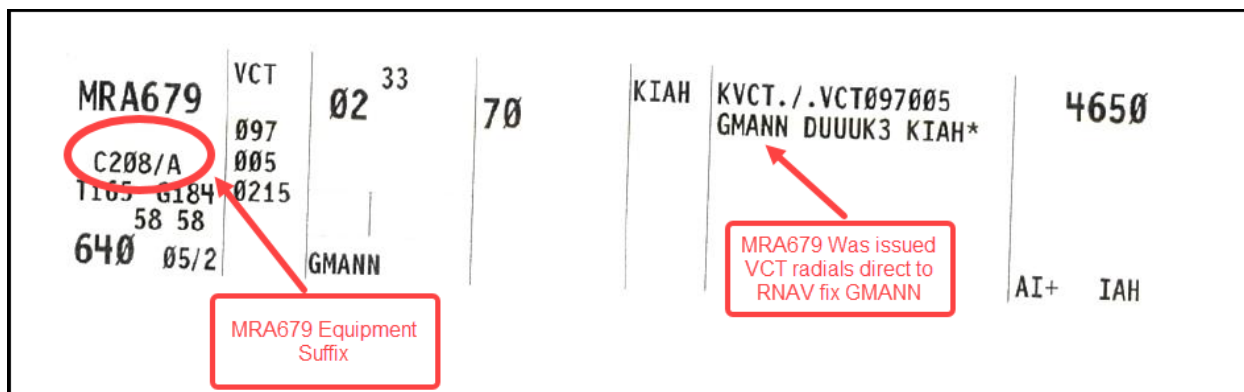


Figure 7 – ZHU flight progress strip indicating the ADAR direct to the RNAV fix GMANN.

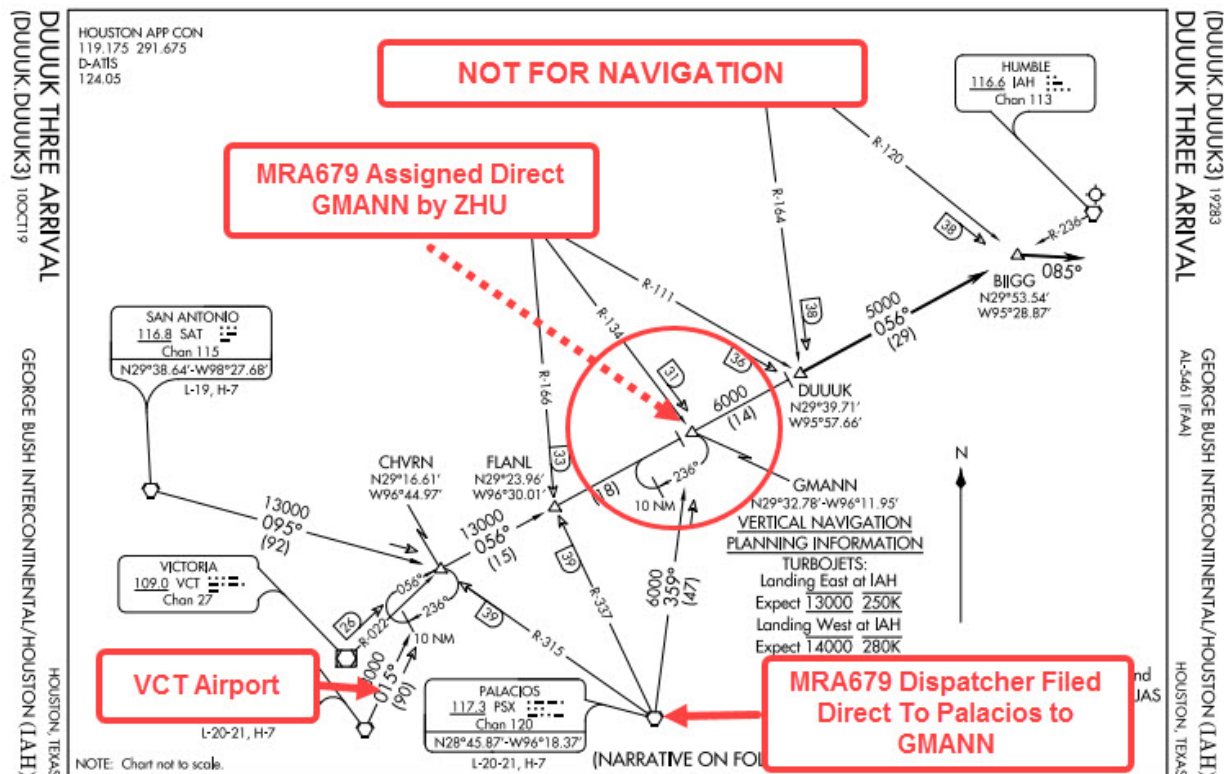


Figure 8 – Illustrates the DUUUK Three standard terminal arrival route (STAR).

6.0 Air Traffic Control Personnel¹⁶

6.1 Houston Air Route Traffic Control Center

6.1.1 ZHU Corpus Christi Specialty Controller (R58)

The R58 controller began working for the FAA in March 2016. He graduated from the FAA training facility in Oklahoma City OK in July 2016, and immediately reported to ZHU. He certified as a radar controller on the Brownsville, Three Rivers, and Randolph sectors in the Corpus Specialty. He had been certified on all three sectors for about three months. He was a recreational pilot but had not exercised those privileges for the past eight years. His ATC medical was current with no restrictions.

6.1.1 ZHU Corpus Christi Specialty Controller Assisting During the Accident

The controller assisting the R58 controller began working for the FAA in December 2007. He graduated from the FAA training facility in Oklahoma City OK in March 2008 and reported to ZHU. He was qualified in the Corpus Christi specialty and certified on all sectors. He earned an instrument pilot rating from Central Missouri State University in 2005 but was not current. He maintained his private pilot's currency through 2017 but it had since lapsed. His ATC medical was current with no restrictions.

6.1.2 ZHU Corpus Christi Specialty Radar Associate Controller (D58)

The D58 controller began working for the FAA in December 2005. He graduated from the FAA training facility in Oklahoma City OK in March 2006 and reported to the Cleveland Air Route Traffic Control Center (ZOB). The D58 controller transferred from ZOB to ZHU in May 2017. He was qualified in the Corpus Christi specialty and certified on all sectors. His ATC medical was current with a restriction to have eyeglasses or contact lenses in his possession while performing duties. He reported he was wearing corrective lenses when the accident occurred.

6.1.3 ZHU Acting Support Manager of Training

The acting support manager of training began working for the FAA in September 1982. He graduated from the FAA facility in Oklahoma City OK in December 1982 and reported to ZHU in January 1983. While at ZHU, he had been certified in the Lake Charles, Ocean, New Orleans, and other specialties that no longer existed due to facility airspace changes. He did not have an ATC medical certificate and was not required to.

6.1.4 ZHU Corpus Christi Specialty Operations Supervisor (OS)

The OS began working for the FAA in January 2009. He graduated from the FAA training facility in Oklahoma City, OK in May 2009 and reported to ZHU. He was certified in the New Orleans specialty. In 2016, the OS began working in the traffic management unit (TMU) and in 2019 became an operations supervisor in the Corpus Christi specialty. His ATC medical was current with no restrictions.

¹⁶ See ATC attachment 1 Controller interview summaries.

6.2 Victoria Air Traffic Control Tower

6.2.1 VCT Local Controller (LC)

The LC began working for the CI2 Aviation Inc. in April of 2017 as an air traffic controller. Prior to CI2, the LC worked for Serco North America (NA) from July 2016 through March 2017 in Bethel, Alaska and for DynCorp in Jalalabad, Afghanistan from June 2015 through July 2016. Prior to that, the LC was an air traffic controller in the United States Navy from June 1994 through July 2014 and worked at Naval Air station Corpus Christi (NGP) and the USS John F. Kennedy. The LC was qualified as a Controller in Charge (CIC), and maintained a current Limited Aviation Weather Reporting Stations (LAWRS)¹⁷ certificate (see attachment 3). His ATC medical was current with a restriction to wear corrective lenses. He reported he was wearing them on the day of the accident.

7.0 Air Traffic Control Procedures and Guidance

7.1 National Orders

7.1.1 FAA Job Order (FAA JO) 7110.65Y Air Traffic Control

Chapter 1, Section 1, paragraph 1-1-1 Purpose of this Order, prescribes the purpose and expectation of FAA JO 7110.65Y, *Air Traffic Control*, and states [in part]:

1-1-1. PURPOSE OF THIS ORDER

This order prescribes air traffic control procedures and phraseology for use by persons providing air traffic control services. Controllers are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations that are not covered by it.

Chapter 2, Section 3, paragraph 2-3-8 Aircraft Equipment Suffix, prescribes what equipment suffix should be included on the flight progress strip to assist air traffic controllers with identifying airplane navigation capabilities and states [in part]:

2-3-8. AIRCRAFT EQUIPMENT SUFFIX

a. Indicate, for both VFR and IFR operations, the aircraft's radar transponder, DME, or navigation capability by adding the appropriate symbol, preceded by a slant.

¹⁷ A facility where observations are taken, prepared, and transmitted by National Weather Service (NWS) certified FAA control tower personnel or Flight Service station personnel on a limited basis to support aviation requirements.

TBL 2-3-10
Aircraft Equipment Suffixes

	Navigation Capability	Transponder Capability	Suffix
RVSM	Any	Failed transponder or Failed Mode C capability	/H
	No GNSS, No RNAV	Transponder with Mode C	/W
	RNAV, No GNSS	Transponder with Mode C	/Z
	GNSS	Transponder with Mode C	/L
No RVSM	No DME	No transponder	/X
		Transponder with no Mode C	/T
		Transponder with Mode C	/U
	DME	No transponder	/D
		Transponder with no Mode C	/B
		Transponder with Mode C	/A
	TACAN	No transponder	/M
		Transponder with no Mode C	/N
		Transponder with Mode C	/P
	RNAV, No GNSS	No transponder	/Y
		Transponder with no Mode C	/C
		Transponder with Mode C	/I
	GNSS	No transponder	/V
		Transponder with no Mode C	/S
		Transponder with Mode C	/G

Chapter 2, Section 9, Automatic Terminal Information Service (ATIS) procedures, paragraph 2-9-2 Operating Procedures, prescribes the procedures used to assist air traffic controllers with ensuring the ATIS is properly updated and disseminated and states [in part]:

2-9-2. OPERATING PROCEDURES

Maintain an ATIS message that reflects the most current arrival and departure information.

a. Make a new recording when any of the following occur:

1. Upon receipt of any new official weather regardless of whether there is or is not a change in values.

c. Controllers must ensure that pilots receive the most current pertinent information by taking the following actions, as applicable:

1. When a pilot does not state the appropriate ATIS code on initial contact, ask the pilot to confirm receipt of the current ATIS information.

Chapter 7, Section 4, Approaches, paragraph 7-4-1, Visual Approach, describes what a visual approach is and states [in part]:

7-4-1. VISUAL APPROACH

A visual approach is an ATC authorization for an aircraft on an IFR flight plan to proceed visually and clear of clouds to the airport of intended landing. A visual approach is not a standard instrument approach procedure and has no missed approach segment. An aircraft unable to complete a landing from a visual approach must be handled as any go-around and appropriate IFR separation must be provided until the aircraft lands or the pilot cancels their IFR flight plan.

Chapter 7, Section 4, Approaches, paragraph 7-4-3, Clearance for Visual Approaches, prescribes the procedures used by ZHU controllers to clear an airplane for a visual approach and states [in part]:

7-4-3. CLEARANCE FOR VISUAL APPROACH

ARTCCs and approach controls may clear aircraft for visual approaches using the following procedures:

a. Controllers may initiate, or pilots may request, a visual approach even when an aircraft is being vectored for an instrument approach and the pilot subsequently reports:

1. The airport or the runway in sight at airports with operating control towers.

7.1.2 FAA JO 7210.3 BB Facility Operation and Administration

Chapter 1, Section 1, paragraph 1-1-1 Purpose of this Order, prescribes the purpose and expectation of FAA JO 7210.3 BB, *Facility Operation and Administration*, and states [in part]:

1-1-1. PURPOSE OF THIS ORDER

This order provides instructions, standards, and guidance for operating and managing air traffic facilities.

Chapter 18, Section 16 Preferred IFR Routes Program, paragraph 18-16-3 Development Procedures, prescribes how adapted ADAR's should be defined and states [in part]:

18-16-3. DEVELOPMENT PROCEDURES

a. Routes and route segments must be defined by any combination of the following:

1. DPs/SIDs/STARs if applicable
2. NAVAID identifier, intersection name, fix name, RNAV Waypoint or Navigation Reference System Waypoints (NRS) (e.g., FUZ, ZEMMA, KK45G).
3. Type and number of the airway (e.g., J87 M201 Q40 T295 V16)

b. When establishing or amending Preferred IFR Routes the following rules must be applied:

1. When including a DP/SID/STAR use a published transition fix or the common fix for the procedure.
2. When describing an airway include a published entry and exit point (e.g., CVE J87 BILEE).

c. Other considerations should include:

1. Terminal/en route traffic flows
2. Radar coverage
3. SAA/SUA
4. Adapted Arrival (AARs), Adapted Departure (ADRs) and Adapted Departure and Arrival Routes (ADARs).

7.2 Local Orders

7.2.1 ZHU VCT Letter of Agreement (LOA)

Section 1, Purpose, defines each facilities responsibilities and procedures for aircraft arrival and departure operations and states [in part]:

1. **PURPOSE.** This agreement between Houston ARTC Center and Victoria Air Traffic Control Tower defines responsibilities and procedures for aircraft operations at and in the vicinity of the Victoria Regional Airport. This agreement is supplementary to the procedures contained in appropriate air traffic control handbooks.

Section 5, Procedures, denotes the specific responsibilities of each facility to conduct an IFR departure from VCT that will enter ZHU airspace and states [in part]:

b. IFR Departures.

(1) Center must:

- (a) Furnish IFR clearances to the Tower via verbal communications.
- (b) Release all departures. This authorization is given when Center issues the following, "**(Aircraft ID) released.**"

(2) Tower must:

Issue departure clearances to IFR aircraft as follows:

- (c) Clear aircraft via the IFR clearance provided by the Center.

7.3 Airman's Information Manual (AIM)

The AIM is designed to provide the aviation community with basic flight information and ATC procedures for use in the NAS of the United States. Chapter 5, Air Traffic Procedures, Section 1 Preflight, paragraph 5-1-8 Flight Plan (FAA Form 7233-1) Domestic IFR Flights, identifies the procedures for filing an IFR flight plan and what should be expected by air traffic control and states [in part]:

AIM 5-1-8

A. General

1. Prior to departure from within, or prior to entering controlled airspace, a pilot must submit a complete flight plan and receive an air traffic clearance, if weather conditions are below VFR minimums. Instrument flight plans may be submitted to the nearest FSS or ATCT either in person or by telephone (or by radio if no other means are available).

2. When filing an IFR flight plan, identify the equipment capability by adding a suffix, preceded by a slant, to the AIRCRAFT TYPE, as shown in TBL 5-1-3, Aircraft Suffixes.

NOTE-

1. ATC issues clearances based on filed suffixes. Pilots should determine the appropriate suffix based upon desired services and/or routing. For example, if a desired route/procedure requires GPS, a pilot should file /G even if the aircraft also qualifies for other suffixes.

F. LIST OF ATTACHMENTS

Attachment 1 Controller interviews
Attachment 2 Email reflecting the changes made because of the investigation
Attachment 3 VCT controller LAWRS certificate
Attachment 4 ZHU covered event review
Attachment 5 ZHU mandatory occurrence review
Attachment 6 ZHU communications
Attachment 7 VCT communications
Attachment 8 FAA ADS-B data.

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