NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

May 5, 2020

Group Chairman's Factual Report

AIR TRAFFIC CONTROL

DCA19MA143

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A. AIRCRAFT ACCIDENT

Location: Jacksonville, Florida
Date: May 3, 2019
Time: 2142 eastern daylight time (EDT[1])
0142 coordinated universal time (UTC) (May 4, 2019)
Airplane: Boeing 737-800, N732MA, BSK293

B. AIR TRAFFIC CONTROL GROUP

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C. SUMMARY

On May 3, 2019, at 2142 eastern daylight time, Miami Air flight 293, a Boeing 737-81Q registration N732MA, was landing on runway 10 at Jacksonville Naval Air Station, Jacksonville, Florida, when it departed the end of the runway, contacted a stone embankment, and came to rest in shallow water in St. Johns River. The 2 pilots, 4 flight attendants, 1 mechanic, and 136 passengers were not seriously injured. The airplane was substantially damaged. Flight 293 was a non-scheduled passenger flight from Leeward Point Field, Naval Station Guantanamo Bay, Cuba, operating under the provisions of 14 *Code of Federal Regulations* Part 121 Supplemental. Instrument meteorological conditions prevailed at the time of the accident, and rain was occurring during the landing.

D. DETAILS OF THE INVESTIGATION

On May 3, a preliminary review of information was conducted, and decision made by management to launch air traffic control (ATC) with the Go Team in response to the accident. Preliminary findings provided to the NTSB Investigator in Charge (IIC).

On May 4, the ATC workgroup traveled to Jacksonville, Florida and arrived on site at the command post located in hangar 117 at Naval Air Station Jacksonville (KNIP) and checked in with the IIC. The group attended a short organizational meeting conducted by the IIC along with the other group chairmen, and parties to the investigation. The group also met with the KNIP radar air traffic control facility (RATCF) Leading Chief Petty Officer (LCPO) to request data and coordinate controller interviews.

[1] All times are in eastern daylight time (EDT) unless otherwise noted.

On May 5, the group attended the IIC organizational meeting with all investigative groups and parties to the investigation, then accompanied the meteorology group chairman in conducting interviews[2] with the two contract weather office meteorologists that were working at the time of the accident. After conducting interviews, collected and began review of some of the data that was being provided by the ATC facility. After review of data received, it was determined we would also need to gather data and conduct interviews at Jacksonville Air Traffic Control Tower (KJAX ATCT) and Jacksonville Air Route Traffic Control Center (KZJX ARTCC). Coordinated the site visits for KJAX ATCT and KZJX ARTCC and received a request for party status from the National Air Traffic Controllers Association (NATCA) that was forwarded and approved by the IIC. Attended the evening progress meeting and finished on-site activities for the day.

On May 6, the group attended the morning planning meeting, reviewed more data, conducted interviews with the KNIP RATCF local (LC) controller, ground/clearance delivery (GC/CD) controller, arrival (AR) controller and radar final (RF) controller that provided services to the accident aircraft at KNIP. The group conducted operational tours of the control tower cab and radar control room. Further coordinated facility visits with the FAA, reviewed data provided by KNIP RATCF, and attended the evening progress meeting closing out on-site activities for the day.

On May 7, the ATC group traveled to KJAX ATCT and was provided an in-brief that included an event playback, and summary timeline of the services provided by KJAX ATCT to BSK293 on the day of the accident. Conducted an operational tour of the radar control room, then conducted an interview with the radar approach (RP) controller that provided services to BSK293 on the day of the accident. Attended the evening progress meeting and finished on-site activities for the day.

On May 8, the group attended the morning planning meeting, then met with the management team at KNIP RATCF to discuss the operation, and arranged operational tours of the facility for the FAA and NATCA group members that did not join the group until May 6. The group then traveled to KZJX ARTCC in Hilliard, Florida and was provided a playback of the services provided to BSK293 by KZJX ARTCC on the day of the accident. Conducted an operational tour of the radar control room and received a short briefing by the meteorologist on duty in the Center Weather Service Unit (CWSU). The group was also provided an ERAM[3] replay of the event. The group collected further data and travelled back to KNIP to attend the evening progress meeting before closing out on-site activities for the day.

On May 9, finished the group field notes, checked out with the IIC and traveled home.

[2] Transcriptions of recorded interviews conducted with meteorologists are provided in the Meteorology Factual Report, and summaries of interviews conducted with controllers are included in Attachment 1: Interview Summaries.

[3] ERAM – En Route Automation Modernization - The NextGen system designed to replace the En Route Host and backup system previously utilized at Air Route Traffic Control Centers and allows for faster processing of route requests and in-flight route changes.

E. Factual Information

1.0 History of Flight

The following is a timeline and sequence of events leading up to the accident. Information was obtained from United States Navy (USN) and FAA certified audio re-recordings, and interviews conducted with air traffic controllers at both KJAX ATCT and KNIP RATCF. All times are rounded to the nearest minute and altitudes are in feet above mean sea level (msl) in this timeline. Control positions referenced are the KJAX ATCT radar approach (RP) controller, KNIP ATCT local (LC), radar arrival (RA), and radar final (RF) controllers.

2122 The pilot of BSK293 checked in with KJAX ATCT level at 13,000 feet msl. The RP controller acknowledged and advised the pilot to expect the RNAV[4] runway 28 approach to KNIP. The pilot acknowledged.

2123 The RP controller advised the pilot of BSK293 of moderate to heavy precipitation on the final to runway 28. The pilot acknowledged and said that he could not pick up the ATIS.

The RP controller called KNIP tower and asked for the current winds and how the precipitation looked in relation to runway 28. The LC controller advised the winds were from 350 degrees at 4 knots, with 5 miles visibility, heavy thunderstorms, and rain.

The RP controller advised BSK293 that the winds were 350 at 4.

2124 The pilot of BSK293 asked if there was any chance of runway 10 that he thought it looked a lot better. The RP controller advised he showed moderate to heavy precipitation affecting that runway as well, building and starting on about a 5-mile final to the airport. The pilot acknowledged and said, “let’s stick with two eight.”

The RP controller instructed the pilot of BSK9293 to descend and maintain 5,000 feet msl. The pilot acknowledged.

2125 The RP controller called KNIP tower and asked if runway 28 or 10 looked better. The LC controller advised they both looked rough and would not be easy either way. The winds were favoring runway 28, but they were socked in no matter what. The RP controller acknowledged.

2126 The RP controller advised the pilot of BSK293 that both runways at KNIP looked pretty bad and were socked in, and that he observed moderate to heavy precipitation both east and west of the airport, and asked if he still wanted the RNAV approach to runway 28. The pilot responded, “whichever looks better” and advised they would monitor as they got closer. The RP controller then instructed BSK293 to turn right heading 010 and descend and maintain 3,000 feet msl. The pilot acknowledged with a correct readback.

[4] RNAV – Area Navigation - A non-precision approach procedure that provides lateral guidance only to an appropriately equipped aircraft approaching and landing on a runway.

2128 The RP controller instructed the pilot of BSK293 to turn right heading 040. The pilot acknowledged with a correct readback.

2129 The RP controller called the KNIP RA controller and advised that BSK293 was 15 miles southwest of KNIP for the RNAV approach to runway 28. The RA controller advised that BSK293 was radar contact.

2130 The RP controller advised the pilot of BSK293 that the previously mentioned precipitation was moving eastbound and asked if he wanted to change to runway 10 because it looked like it might be better. The pilot responded, "yeah go ahead, let's do it."

The RP controller instructed the pilot of BSK293 to turn left heading 270. The pilot acknowledged with a correct readback.

2131 The RP controller instructed the pilot of BSK293 to turn left heading 250. The pilot acknowledged with a correct readback.

2132 The RP controller called the KNIP RA controller and advised that BSK293 wanted the RNAV approach to runway 10.

2133 After coordinating the runway change with the LC controller, the RA controller called the KJAX RP controller and advised that runway 10 was approved, and advised they were changing the PAR runway, would turn on the PAPI lights, and confirmed the pilot still wanted the RNAV approach.

2134 The RP controller instructed BSK293 to turn right heading 290. The pilot acknowledged with a correct readback.

The LC controller instructed the RA controller to advise the pilot that the short field arresting gear was rigged, and they had not had a chance to derig it due to the weather, and that BSK293 would have to land long.

[the short field arresting gear on runway 10 is located 1,190 feet from the approach end, leaving 7,813 feet of usable runway on runway 10 when landing beyond the gear]

2136 The RP controller instructed the pilot of BSK293 to turn right heading 010. The pilot acknowledged with a correct readback.

2137 The RP controller instructed the pilot of BSK293 to turn right heading 080 to join the final approach course. The pilot acknowledged with a correct readback.

2138 The RP controller advised the pilot of BSK293 that he was 7 miles from the final approach fix and cleared him for the RNAV runway 10 approach. The pilot acknowledged.

The RP controller called the KNIP RA controller and confirmed they were set up for runway 10.

The RP controller instructed the pilot of BSK293 to contact KNIP GCA on frequency 363.0. The pilot requested a VHF frequency and the RP controller gave him 127.7. The pilot acknowledged.

2139 The pilot of BSK293 checked on with KNIP RATCF *(initially identifying them as "tower" rather than "GCA[5]")* and reported on the RNAV approach to runway 10. The RA controller issued the KNIP altimeter and advised that it would be a RNAV approach using PAR[6] monitoring and provided roll-out instructions. The RA controller also issued missed approach instructions and advised the pilot that the short field arresting gear was rigged. The pilot acknowledged saying "we understand, two nine three", and then asked to confirm that it was the first thousand feet and the RA controller responded in the affirmative. The pilot acknowledged.

2140 The RA controller transferred control of BSK293 to the RF controller. The RF controller identified himself, asked how the pilot could hear him and advised him that his wheels should be down. The pilot acknowledged, and advised he heard the controller loud and clear.

The RF controller issued the landing runway 10, advised the winds were 240 at 10 knots and cleared the pilot of BSK293 to land runway 10. The pilot acknowledged.

2141 The RF controller instructed the pilot of BSK293 to report the field in sight and a few seconds later the pilot reported it in sight.

2142 An ELT[7] could be heard over the guard frequencies in the KNIP RATCF.

2.0 Surveillance Data Sources and Radar Playback Information

2.1 Airport Surveillance Radar

Radar detects the position of an object by broadcasting an electronic signal that is reflected by the object and returned to the radar antenna. These reflected signals are called primary returns. Knowing the speed of the radar signal and the time interval between when the signal was broadcast and when it was returned, the distance, or range, from the radar antenna to the reflecting object can be determined. Knowing the direction that the radar antenna was pointing when the signal was broadcast, the direction (or bearing, or azimuth) from the radar to the object can be determined. Range and azimuth from the radar to the object define the object's position.

[5] GCA – Ground Controlled Approach – A legacy term describing services provided by air traffic controllers whereby Precision Approach Radar (PAR), and Airport Surveillance Radar (ASR) are used to provide landing guidance to arriving aircraft. This term is still commonly used in the Navy and Marine Corps for those facilities that provide radar arrival and final approach services.

[6] PAR – Precision Approach Radar - The AN/FPN-63(V) PAR is used at Navy and Marine Corps air installations in conjunction with an airport surveillance radar system to provide air traffic control services for Navy, Marine Corps, and other military and civilian aircraft as required. The PAR is the Navy and Marine Corps' fixed-based primary approach aid used during conditions of poor visibility to provide radar guidance to an aircraft on final approach.

[7] ELT – Emergency Locator Transmitter – A radio transmitter attached to the aircraft structure which operates from its own power source on 121.5 MHz and 243.0 MHz. It aids in locating downed aircraft by radiating a downward sweeping audio tone, 2-4 times per second. It is designed to function without human action after an accident.

To improve the consistency and reliability of radar returns, aircraft are equipped with transponders that sense beacon interrogator signals broadcast from radar sites, and in tum broadcast a response signal. Even if the radar site is unable to sense a weak reflected primary return, it will sense the response signal broadcast by the transponder and be able to determine the aircraft position. The response signal can also contain additional information, such as the identifying "beacon code" for the aircraft, and the aircraft's pressure altitude (also called "Mode C" altitude). Transponder signals received by the radar site are called secondary returns. BKS293 was assigned a beacon code of 2651.

Radar data was provided by the USN and FAA and the source radar was the Jacksonville ASR-11, located on the airfield at KNIP. The radar was located at an elevation of 4 feet msl and had a 6° westerly magnetic variation. The KNIP plot playback (PPB) was of good quality and was part of the STARS[8].

2.2 Automatic Dependent Surveillance – Broadcast (ADS-B)[9]

Automatic dependent surveillance—broadcast (ADS–B) is a surveillance technology in which an aircraft determines its position via satellite navigation and periodically broadcasts it, enabling it to be tracked. The information can be received by ATC ground stations as a replacement for secondary surveillance radar, as no interrogation signal is needed from the ground. It can also be received by other aircraft to provide situational awareness and allow self-separation. ADS–B is "automatic" in that it requires no pilot or external input. It is "dependent" in that it depends on data from the aircraft's navigation system.

ADS-B data was also provided by the FAA. The ADS-B data was of excellent quality and provided more finite flight track information than radar data and was used in producing the flight track graphics in figures[10] 1-5.

2.3 Radar Maintenance Playbacks

Air traffic control facilities that provide radar services record every position in a radar facility for training, quality assurance, and investigative purposes. These recordings capture exactly what was being displayed on the controller workstation to include the controller display settings, keystrokes, as well as displayed weather information (precipitation only).

STARS playbacks of the services provided by KNIP RATCF and KJAX ATCT to BSK293 on the day of the accident were reviewed by the ATC group. Several screen captures were taken at one-minute intervals from both playbacks and illustrate the precipitation that was displayed to the controllers surrounding the time services were being provided to BSK293.

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[8] STARS – Standard Terminal Automation Replacement System – A system that receives radar data and flight plan information and presents the information to air traffic controllers on high resolution, 20" x 20" color displays allowing the controller to monitor, control, accept hand-off of air traffic, and assist with weather avoidance.

[9] ADS-B – Automatic Dependent Surveillance-Broadcast - 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.

[10] Figures 1-4 are included in Attachment 2: Flight Track Graphics

An ERAM playback of the services provided by KZJX ARTCC to BSK293 on the day of the accident were reviewed by the ATC group as well. Several screen captures were taken at one-minute intervals from this playback and illustrate the precipitation that was being displayed to the controller while providing services to the accident aircraft.

ERAM and STARS processed precipitation is derived from different sources, and therefore results in variances in displayed precipitation to the controller. In this case it was our observation that the difference was significant. The screen captures that were taken from both ERAM and STARS playbacks covered the same time frame for comparative analysis and results are included in the Meteorology Factual Report.

3.0 Weather Information

The area surrounding the accident site was documented using official Meteorological Aerodrome Reports (METARs) and Specials (SPECIs). The following observations were taken from standard code and are provided in plain language.

KNIP had the closest official weather station to the accident site. Mayport Naval Station (KNRB) had an official weather observer documenting the weather conditions. KNIP had an Automated Surface Observing System (ASOS[11]) whose reports were supplemented by official certified contract weather observers. The KNIP ASOS site was located between both runways at the centerfield location approximate 0.75 miles west-northwest of the accident site, at an elevation of 23 feet, and had a 6° westerly magnetic variation. The following observations were taken and disseminated during the times surrounding the accident:

[2053 EDT] METAR KNIP 040053Z 00000KT 10SM -RA SCT010 BKN030 BKN045 BKN250 25/22 A2997 RMK AO2 RAB52 SLP143 OCNL LTGIC DSNT SW CB DSNT SW T2 SET P0000 T02500222 $=

[2103 EDT] SPECI KNIP 040103Z 06003KT 10SM -RA SCT008 BKN030CB BKN250 25/23 A2997 RMK AO2 OCNL LTGIC DSNT SW CB DSNT SW T2 SET P0000 T02500228 $=

[2105 EDT] SPECI KNIP 040105Z 08003KT 10SM -TSRA SCT008 BKN030CB BKN045 BKN250 25/23 A2997 RMK AO2 TSB04 OCNL LTGIC VC W TS W MOV E T2 SET P0000 T02500228 $=

[2122 EDT] SPECI KNIP 040122Z 35004KT 5SM +TSRA BR SCT008 BKN018CB OVC030 24/22 A2998 RMK AO2 TSB04 FRQ LTGIC OHD TS OHD MOV E T1 SET P0010 T02440222 $=

ACCIDENT TIME 2142 EDT

[11] ASOS – Automated Surface Observing System - Automated sensor suites that are designed to serve meteorological and aviation observing needs. There are currently more than 900 ASOS sites in the United States. These systems generally report at hourly intervals, but also report special observations if weather conditions change rapidly and cross aviation operation thresholds.

[2145 EDT] SPECI KNIP 040145Z 29008G16KT 3SM +TSRA BR SCT008 BKN015CB OVC032 24/22 A2999 RMK AO2 TSB04 FRQ LTGIC OHD TS OHD MOV E T1 SET P0063 T02440222 $=

KNIP weather at 2122 EDT (last METAR observation before accident time), wind from 350° at 4 knots, 5 miles visibility, heavy rain and thunderstorms, mist, scattered clouds at 800 feet above ground level (agl), broken ceiling of cumulonimbus clouds at 1,800 feet agl, overcast skies at 3,000 feet agl, temperature of 24° Celsius (C), dew point temperature of 22° C, and an altimeter setting of 29.98 inches of mercury. Remarks: automated station with a precipitation discriminator, thunderstorms began at 2104 EDT, frequent lightning overhead, thunderstorm overhead moving east, thunderstorm conditions are forecasted within 10 miles of KNIP, 0.10 inches of precipitation since 2053 EDT, temperature 24.4° C, dew point temperature 22.2° C, maintenance is needed on the system.

KNIP weather at 2145 EDT (first observation valid after the accident time, wind from 290° at 8 knots with gusts to 16 knots, 3 miles visibility, heavy rain and thunderstorms, mist, scattered clouds at 800 feet agl, broken ceiling of cumulonimbus clouds at 1,500 feet agl, overcast skies at 3,200 feet agl, temperature of 24° C, dew point temperature of 22° C, and an altimeter setting of 29.99 inches of mercury. Remarks: automated station with a precipitation discriminator, thunderstorms began at 2104 EDT, frequent lightning in cloud and overhead, thunderstorm overhead moving east, thunderstorm conditions are forecasted within 10 miles of KNIP, 0.63 inches of precipitation since 2053 EDT, temperature 24.4° C, dew point temperature 22.2° C, maintenance is needed on the system.

The observations from KNIP surrounding the accident time indicated MVFR[12] conditions with heavy rain and thunderstorms and a gusty west-northwest wind reported after the accident time. A "T1[13] SET" thunderstorm warning was issued for KNIP at 2122 EDT.

There were no pilot reports (PIREPs) entered into the national airspace within 75 miles of the accident site from about two hours prior to the accident time to two hours after the accident time.

There were convective Significant Meteorological Information (SIGMET[14]) advisories 3E and 25E and valid for the accident site at the accident time. SIGMET 3E was issued at 2055 EDT and valid through 2255 EDT and it warned of an area of thunderstorms moving little with tops above flight level (FL) 450. SIGMET 25E was issued at 1955 EDT and valid through 2155 EDT and it warned of an area of thunderstorms with the SIGMET 25E box movement from 250° at 10 knots with thunderstorm tops above FL450:

[12] MVFR – Marginal Visual Meteorological Conditions (MVFC / MVFR) - Ceiling greater than or equal to 1,000 feet to less than or equal to 3,000 feet and/or visibility greater than or equal to 3 to less than or equal to 5 miles.
[13] T1 – Thunderstorm/Tornado Warning - Destructive wind and accompanying thunderstorms are within 10 nm or expected within 1 hour. Associated lighting/thunder, torrential rain, hail, severe down bursts, and sudden wind shifts are possible.
[14] SIGMET – Significant Meteorological Information - A weather advisory issued concerning weather significant to the safety of all aircraft. SIGMET advisories cover severe and extreme turbulence, severe icing, and widespread dust or sandstorms that reduce visibility to less than 3 miles.

CONVECTIVE SIGMET 3E
VALID UNTIL 0255Z
FL GA AND FL CSTL WTRS
FROM 50N CTY-10NE CRG-20SSE OMN-10ESE CTY-50N CTY
AREA TS MOV LTL. TOPS ABV FL450.

CONVECTIVE SIGMET 25E
VALID UNTIL 0155Z
FL GA AND FL CSTL WTRS
FROM 20N CRG-20NW OMN-10WSW CTY-50SSE TLH-20E TLH-20N CRG
AREA TS MOV FROM 25010KT. TOPS ABV FL450.

More detailed weather is provided in the Meteorology Factual Report in the public docket.

4.0 TALON27 Flight

It was learned after returning from the field phase of the investigation that there had been a previous arrival on the evening of the accident flight. A Navy P8 (B737 military variant) operating under the callsign TALON27 had landed on runway 28 at about 2108, less than 30 minutes before BSK293. Crew statements[15] were provided via email on May 23, 2019. Additionally, a phone conversation was held between NTSB Staff and the crew of TALON27 on June 4, 2019. This conversation was recorded and a transcription[16] provided.

According to the crew, TALON27 was returning to KNIP from pilot proficiency training at Tallahassee International Airport (KTLH), Tallahassee, Florida. The KNIP ATIS was reporting variable winds and scattered clouds, so they had requested the visual approach to runway 28. While being vectored for the visual approach however, they were unable to get consistent visual contact with KNIP and therefore requested the RNAV runway 28 approach. They encountered precipitation while on final, peaking at moderate intensity between 800-600 feet in their descent. They broke out at 600 feet and said that while they had the runway environment in sight, their vision was severely hindered by the precipitation.

Their gross weight was approximately 125,000 pounds, and no degradation in braking action was observed. While slowing down to exit the runway, they noticed the depth of standing water on the runway and taxiways having to slow to nearly a complete stop in order to see taxiway centerline markings. As they concluded their mission and were parking, they noticed that lightning and storm conditions were intensifying to the West.

According to audio recordings, at about 2108 the crew of TALON27 passed a PIREP to the KNIP RF controller reporting they had broken out at 600 feet, 2 miles east of the field.

5.0 ATC Procedures

FAA Order 7110.65X, Air Traffic Control, outlined procedures for air traffic controllers in providing approach arrival information to arriving pilots. FAA Order JO 7110.65X stated in part:

[15] Statements provided by the crew of TALON27 are included in Attachment 3: TALON27 Crew Statements
[16] A transcription of the phone conversation between NTSB Staff and the crew of TALON27 is included in Attachment 4: TALON27 Phone Conversation Transcription.

4−7−10. APPROACH INFORMATION

a. Both en route and terminal approach control sectors must provide current approach information to aircraft destined to airports for which they provide approach control services. This information must be provided on initial contact or as soon as possible thereafter. Approach information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code. For pilots destined to an airport without ATIS, items 3-5 below may be omitted after the pilot advises receipt of the automated weather; otherwise, issue approach information by including the following:

1. Approach clearance or type approach to be expected if two or more approaches are published and the clearance limit does not indicate which will be used.

2. Runway if different from that to which the instrument approach is made.

3. Surface wind.

4. Ceiling and visibility if the reported ceiling at the airport of intended landing is below 1,000 feet or below the highest circling minimum, whichever is greater, or the visibility is less than 3 miles.

5. Altimeter setting for the airport of intended landing.

KNIP Facility Manual (FACMAN) dated Dec 12, 2018 and FAA Order 7110.65X, Air Traffic Control, outlined requirements for air traffic controllers use of PAR for approach monitoring. FAA Order JO 7110.65X stated in part:

KNIP FACMAN, dated Dec 14, 2018 stated in part:

7−2−2. Duties and Responsibilities

3. Final Controller. Primary duties and responsibilities are IAW NAVAIR 00-80T-114 in addition to the following:

a. Ensure that all inbound aircraft are tagged up.

b. Monitor aircraft conducting RNAV/GPS approaches when conditions dictate per 7110.65(series).

FAA Order JO 7110.65X stated in part:

5−13−1. MONITOR ON PAR EQUIPMENT

USAF not applicable. Aircraft conducting precision or non-precision approaches must be monitored by PAR equipment if the PAR final approach course coincides with the NAVAID final approach course from the final approach fix to the runway and one of the following conditions exists:

NOTE−

1. The provisions of this section do not apply to monitoring simultaneous approaches.

2. This procedure is used in PAR facilities operated by the FAA and other military services at joint-use civil/military locations and military installations during the operational hours of the PAR.

a. The reported weather is below basic VFR minima.

b. USA Not applicable. At night.
c. Upon request of the pilot.

NOTE−
Approach monitoring is a vital service, but during the approach, the controller acts primarily as a safety observer and does not actually guide the aircraft. Loss of the radar monitoring capability (and thus availability) is no reason to terminate an otherwise good instrument approach. Advise the pilot that radar contact has been lost (or other reason as appropriate), that radar monitoring is not available, and of actions for the pilot to take in either proceeding with or breaking off the approach; i.e., contact tower, remain on PAR frequency, etc.

FAA Order JO 7110.65X, Air Traffic Control outlines the requirements for ATC personnel to inform civil aircraft whenever the arresting gear is rigged. In this case, KNIP RATCF correctly applied the requirements of this regulation. FAA Order JO 7110.65X stated in part:

5−3−6. ARRESTING SYSTEM OPERATION

a. For normal operations, arresting systems remotely controlled by ATC must remain in the retracted or down position.
d. Inform civil and U.S. Army aircraft whenever rubber supported cables are in place at the approach end of the landing runway and include the distance of the cables from the threshold. This information may be omitted if it is published in the "Notices to Airmen" publication/DOD FLIP.

F. LIST OF ATTACHMENTS

Attachment 1: Interview Summaries
Attachment 2: Flight Track Graphics
Attachment 3: TALON27 Crew Statements
Attachment 4: TALON27 Phone Conversation Transcription

Submitted by:

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Brian Soper
Senior Air Traffic Investigator