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16. Abstract About 0126 e. d. t., on May 10, 1975, NAVIK Air, Inc., Flight 11, a scheduled air taxi courier service, crashed 3.3 nmi short of the runway while making a night approach to runway 5R at the Cleveland-Hopkins International Airport, Cleveland, Ohio. The pilot, the only crewmember, was killed during impact. The pilot's 14-year-old son, the only passenger, was seriously injured.

The accident went unnoticed for about 5 hours because the air traffic control procedures did not define the local controller's responsibility to monitor the radar display in a manner that would insure a positive transfer of control by rada: observation. In addition, the aircraft's emergency locator transmitter failed because of crash damage.

The National Transportation Safety Board determines that the probable cause of this accident was the pilot's failure to arrest the aircraft's descent during a landing approach inbound from the outer marker under nighttime VFR conditions. The Safety Board could not determine the reasons for his failure.

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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D. C. 20594

AIRCRAFT ACCIDENT REPORT

Adopted: March 10, 1976

NAVIK AIR, INC.
PIPER PA23-250, N644N
CLEVELAND-HOPKINS INTERNATIONAL AIRPORT
CLEVELAND, OHIO
MAY 10, 1975

SYNOPSIS

About 0126 e.d.t., on May 10, 1975, NAVIK Air, Inc., Flight 11, a scheduled air taxi courier service, crashed 3.3 nmi short of the runway while making a night approach to runway 5R at the Cleveland-Hopkins International Airport, Cleveland, Ohio. The pilot, the only crewmember, was killed during impact. The pilot's 14-year-old son, the only passenger, was seriously injured.

The fact that the aircraft did not complete the approach and landing was not detected by air traffic control personnel because the air traffic control procedures did not define the local controller's responsibility to monitor the radar display in a manner that would insure a positive transfer of control by radar observation. In addition, the aircraft's emergency locator transmitter failed because of crash damage.

The National Transportation Safety Board determines that the probable cause of this accident was the pilot's failure to arrest the aircraft's descent during a landing approach inbound from the outer marker under nighttime VFR conditions. The Safety Board could not determine the reasons for his failure.

1. INVESTIGATION

1.1 History of the Flight

On May 9, 1975, NAVIK Air, Inc., Flight 11 (NAVIK 11), a Piper PA23-250, N644N, operated as a scheduled air taxi courier service between Rochester, New York, and Cleveland, Ohio, with intermediate stops at

Buffalo, New York, Pittsburgh, Pennsylvania, Columbus, Ohio, and Cleveland, Ohio. The flight departed Rochester at 2120 1/ on an instrument flight rules (IFR) flight plan.

The pilot and his 14-year-old son were the only persons aboard. The aircraft carried about 300 pounds of cargo.

The flight departed Columbus, the last intermediate stop, on May 10, at 0100. At 0112:35, Cleveland Air Route Traffic Control Center (ARTCC) provided Cleveland approach control a radar handoff on NAVIK 11 and control was transferred. A few seconds later, the pilot contacted Cleveland approach control, identified himself, reported his altitude at 7,000 2/ feet, and informed the controller that he had the automatic terminal information service (ATIS) "Golf."

At the times indicated, the following communications were exchanged between NAVIK 11 and Cleveland approach control:

0113:04	(Cleveland APC) -	NAVIK Eleven, Cleveland Approach, squawk zero one two zero, maintain seven thousand, present heading vectors final approach.
0113:13	(NAVIK 11) -	Okay, maintain seven present heading and we're squawking zero one two zero.
0116:06	(Cleveland APC) -	NAVIK Eleven, present heading join the ILS, proceed inbound, descend to four thousand.
0116:12	(NAVIK 11) -	Okay, join the ILS, we're out of seven for four, NAVIK Eleven.
0119:28	(Cleveland APC) -	NAVIK Eleven, you're fifteen from Gilbert, 3/ cleared for ILS five right approach. Tower one two zero point niner. Gilbert inbound.

1/ All times herein are eastern daylight, based on the 24-hour clock.

2/ All altitudes herein are mean sea level unless otherwise noted.

3/ .Location of outer marker.

0119:47(Cleveland APC) - NAVIK Eleven, did you copy?

0119:50(NAVIK 11) - Yeah, that's affirmative, we're cleared for the approach, NAVIK Eleven.

"There was no further contact with the aircraft. The approach controller stated that he monitored NAVIK 11 on his radar until it passed the outer marker (OM). His attention was then directed to other traffic. During an interview he said that he assumed the pilot had contacted the control tower as instructed." 2

The local controller on duty in the Cleveland-Hopkins Airport tower stated that NAVE-1.1 did not contact the tower. At 0126:56, he cleared an aircraft for takeoff from runway 5R after assuring that this aircraft had proper separation from other traffic by visually scanning and by looking at his radarscope (BRITE I). He did not see another aircraft on the approach path to runway 5R at this time, and he was not aware that NAVIK 11 was inbound to the airport for landing.

The aircraft crashed into pine trees 2.6 nmi inside the OM and 1.3 nmi left of the extended centerline of runway 5R. There were no witnesses.

For almost 5 hours, air traffic control personnel were unaware that an accident had occurred.

The pilot's son, who survived the crash, stated that he was asleep in the front seat and was not aware of anything that happened. He further stated that when he awoke he found himself outside the wreckage. He looked for his father but could not find him. When it became daylight, he walked until he found a road; a passing motorist provided assistance and took him to the police station. Cleveland Tower was notified of the accident at 0630.

1.2 Injuries to Persons

Injuries	Crew	Passenger	Other
Fatal	1	0	0
Nonfatal	0	1	0
None	0'	0	

1.3 Damage to Aircraft

The aircraft was destroyed by impact.

1.4 Other Damage

The aircraft crashed into a pine tree farm. The trees were about 30 feet high and 6 to 8 inches in diameter; several trees were severed.

1.5 Crew Information

The pilot was qualified and certificated for the flight. (See Appendix B.) The pilot flew the same scheduled courier flight five times a week, Monday through Friday. According to the pilot's wife, he returned from his previous flight about 0430 on Friday, May 9, 1975, completed his paperwork, and was in bed by 0630 that morning. He slept until 1400, rested the remainder of the afternoon, had dinner, and departed for the airport.

Another pilot had been accompanying the NAVIK air pilot on the courier flights at every opportunity lie had, for about a month before the accident, in order to build up his flying experience:' He stated that the NAVIK pilot had mentioned to him that he became progressively more tired toward the end of each week because of his regular night flying. According to the other pilot, on occasion the NAVIK pilot would doze off but would awaken when he heard his call sign on the radio. The other pilot did not notice anything unusual in the pilot's behavior when he last accompanied him--the day before the accident.

The Safety Board reviewed the air traffic control (ATC) tape to evaluate the pilot's response to ATC clearances during other landing approaches that night. We found that his' responses to ATC clearances were prompt and concise. We also found that during the approach to Columbus, Ohio, the elapsed time between the pilot's acknowledgement of the clearance to descend from 7,000 ft. to 4,000 ft. and the moment he reported level at 4,000 ft. was about 5.5 minutes.

1.6 Aircraft Information

N644N, a Piper PA23-250, serial No. 27-3116, was properly registered and certificated for the operation. The aircraft and engine logs revealed that it had been maintained and inspected as required by Federal Aviation Regulations.

At the time of the accident, the aircraft's gross weight and center of gravity (c.g.) were within prescribed limits. About 115 gallons of 100/130 octane aviation fuel were aboard when the aircraft departed Columbus; the plane had flown less than 1/2 hour when it crashed.

The aircraft was equipped with an autopilot. There were no entries in the aircraft's logbook to indicate that the autopilot was inoperable.

The aircraft's transponder was not equipped with a Mode C automatic altitude reporting capability.

1.7 Meteorological Information

At the time of the accident, weather in the Cleveland area was clear with 15-mile visibility and no wind. The altimeter setting was 30.13 in. The temperature was 46°F., and the dewpoint was 39°F. The accident occurred during hours of darkness.

1.8 Aids to Navigation

Runway 5R has a complete instrument landing system (ILS) which was operating when the aircraft crashed. The approach light system and the runway lights were operating on atep 1 (low intensity).

Flight and ground checks made after the accident showed that the ILS and radar systems were operating within prescribed limits.

About 0119, the ILS monitor panel for runway 5 had shown an abnormal light; the aural alarm remained silent. The monitor was reset and, about 1 minute later, the monitor panel showed normal operation.

The distance from the OM to runway 5R's threshold is 5.9 nmi. The ILS runway 5R approach plate showed an OM minimum crossing altitude of 2, 800 ft.

1.9 Communications

There were no reported difficulties in two-way radio communications between the pilot and approach control. The pilot acknowledged

the clearance to contact the tower when the flight was over the OM; however, there was no evidence to show that he called the tower.

The Cleveland Tower monitored 120.9 MHz as the primary VHF frequency, 123.85 MHz as the secondary VHF frequency, and 121.5 MHz as the emergency VHF frequency. The volume levels of these frequencies are adjusted simultaneously with one control. The local controller communicated with other aircraft on 120.9 MHz before and after the accident and had no difficulty hearing the transmissions.

The Safety Board audited the tower tape recording of communications for the time interval between 0118 and 0135 on May 10; the tape contained radio and telephone conversations which took place at the local controller's position. The tower communicated with only one aircraft which was a flight that took off from runway 5R about 0127. There was no evidence of the reception of a signal from an emergency locator transmitter (ELT).

1.10 Aerodrome and Ground Facilities

Cleveland-Hopkins International Airport is located 10 statute miles southwest of Cleveland, Ohio, at 41° 25' 5" N; 81° 51' W. The elevation of the airport is 792 ft. Runway 5R is 9.000 ft. long and 150 ft. wide.

1.11 Flight Recorders

No recorders were installed in the aircraft and none were required.

1.12 Wreckage

The aircraft cut a swath, about 160 feet long, through the trees and on a magnetic course of 050°. The heights of severed trees and deep cuts made by the propellers indicated that the aircraft was in wings-level flight and descending at an angle of about 3°.

Both wings separated from the fuselage and broke into several sections. The nose section, from the cockpit forward, was folded back underneath the bottom of the fuselage.

The empennage section was damaged extensively; however, the continuity of the flight control cables from the cockpit area to the empennage surfaces was established. The flight control cables in the wings separated; no rust, corrosion, or fraying was noted in the separated areas.

The right main landing gear was up and locked. The left main landing gear was in an intermediate position; the left wheel well area was deformed by heavy impact. The nose landing gear and wheel well area were destroyed. The landing gear selector and indicators were destroyed.

The flaps were in the "up" position; the flap selector and indicator were destroyed. The blades of both propellers were bent and twisted. One propeller remained attached to the engine crankshaft; the other had separated from its mounting flange on the crankshaft. The aircraft fuel tanks were destroyed and scattered along the flight-path. Gasoline was found within the fuel lines to each engine. There was no fire. Examination of the engines disclosed no evidence of malfunction.

The following components were examined and were found to indicate:

Communications Receiver No. 1	123.65 or 124.7 MHz
Communications Receiver No. 2	124.5 MHz (Approach Control)
Navigation Receiver No. 1	109.9 MHz (ILS)
Navigation Receiver No. 2	113.5 MHz
Altimeter	30.13 in. Hg--798 feet
Airspeed Indicator	137 mph
Vertical Speed Indicator	700 fpm down
Aircraft Clock	1:31 (stopped)

1.13 Medical and Pathological Information

Post-mortem examination of the pilot disclosed no evidence of incapacitating disease, drugs, carbon monoxide, or alcohol. He died of impact injuries.

1.14 Fire

There was no fire in flight or on the ground.

1.15 Survival Aspects

This was not a survivable accident for cockpit occupants. The passenger in the right front seat was thrown clear before the cockpit was folded underneath the fuselage. His seatbelt was found unbuckled and intact. He does not remember whether he was using his seatbelt.

The aircraft's ELT remained in its mounting bracket during the crash. However, its antenna lead-in wire (a 4-foot-long shielded cable which connects the ELT to the aircraft's outside antenna) had separated from the antenna connection point at the fuselage. Approximately 1 inch of bare wire was exposed beyond the shield. This resulted in an effective antenna length of only 1 inch. Consequently, a weak ELT signal was produced which could be received for only a short distance. The ELT and its lead-in wire remained inside the aircraft's metal fuselage which further reduced the range of the ELT signal.

1. 16 Tests and Research

None.

1. 17 Other Information

1. 17. 1 ATC Facility Equipment

Cleveland Tower has airport surveillance radar (ASR-6) equipment which is located on the airport. The radar is programmed to incorporate automated radar terminal service III (ARTS 111), and the system was in operation at the time of the accident.

The Cleveland terminal radar approach control (TRACON) facility has seven radar displays--six vertical and one horizontal. All are equipped to use available ARTS III options. During periods of light traffic, the functions of approach and departure control are displayed on two vertical radarscopes. The TRACON was configured in this manner at the time of the accident.

The tower cab has a BRITE I, repeater radar display mounted vertically about 6 feet above the floor and adjacent to the local controller's console.

The BRITE I display is set to a 10 nmi range. When ARTS III is operational, the data within the last 10 nmi on the approach control scope

are repeated on the BRITE I display. The display includes the alphanumeric data block and shows a video map overlay of the approaches to the primary instrument runways--5R and 23L. With the BRITE range set to 10 nmi, the video presentation extends about 3.5 nmi beyond the OM.

1.17.2 Automated Handoff Procedures

The procedures used by TRACON personnel to hand off arrival traffic to the Cleveland Tower on the night of the accident are authorized by and defined in paragraph 1262c *(2)* of Federal Aviation Administration (FAA) Handbook 7110.8D, "Terminal Air Traffic Control." These paragraphs permit the transfer of target identity when utilizing BRITE displays with ARTS data displayed by:

> "Using the 'Modify' function or 'Quick Look' provided specific procedures for transfer of identity using one or both of these functions are established in a facility directive, and both the transferring and receiving controllers' displays are served by the same ARTS computer complex."

Specific procedures to establish changeover of communications and control jurisdiction using ARTS track data displayed on the tower BRITE I radar instead of verbal coordination between the exchanging controllers are set forth in Cleveland Tower Notice CLE ATCT N 7110.46, dated May 2, 1974.

1.17.3 Tower Operations

When the midnight shift began, two controllers were on duty in the tower cab; this was a normal staff for the existing traffic conditions. One controller was assigned to the local control position and the other to the ground control position. Traffic conditions before and at the time of the accident were described as light.

ARTS III was in use, and the "Quick Look" handoff procedures were in effect. Under these circumstances no verbal communications are required between the approach controller and the local controller concerning an inbound aircraft on an approach to a landing. In accordance with prescribed procedures, the approach controller releases the arriving aircraft to the local controller's frequency between 4 and 10 miles from

the runway threshold. (NAVIK 11 was cleared to contact the tower over the OM.) The local controller uses his BRITE I equipment to identify the flight and assumes control responsibility.

On the night of the accident, flight progress strips on arrivals were not used in the tower cab and none were required. Thus, the local controller had to acquire all data on arrival aircraft by monitoring the BRITE I display and through air-to-ground radio communications.

At 0120, about 6 minutes before the accident, the local controller assumed the added duties of the ground controller to allow that individual to assist a team supervisor investigate and correct an abnormality on the ILS monitor panel in the tower cab. At 0125, a flight contacted the tower and requested a clearance to taxi to runway 5R. The clearance was issued and was followed, at 0126:56, by a clearance for takeoff. According to the local controller no traffic was observed in the approach sector to runway 5R or near the OM at that time.

1.17.4 Amended ATC Procedures

Four days after the accident, the FAA issued Notice N7110.403 (GENOT 5/88) to all facilities. The notice contained the following instructions:

> Authorize the use of the ARTS modify and quick look functions for transferring aircraft identification from the radar controller to the tower local controller provided that a facility directive specifies communications and control jurisdiction change over points. At facilities where the provisions of paragraph 1262c(2) are employed, it is the responsibility of the local controller to monitor the BRITE sufficiently to accept data transfers on arrivals via the Modify or Quick **Look** functions within the confines of the facility directive or, take action to require some other mode of data transfer. Factors which may cause the local controller to require another mode of data transfer are not limited to but include inability to read data on the BRITE because of light on the face of the indicator, traffic volume, other duties requiring his attention, and reduced number of control personnel assigned to the tower. Facility chiefs shall insure that all personnel are familiar with the above.

2. ANALYSIS AND CONCLUSIONS

2.1 Analysis

The aircraft was certificated, equipped, and maintained in accordance with FAA requirements and regulations. The gross weight and center of gravity were within the prescribed limits during the flight and on the approach to Cleveland. Weather was not a factor in the accident.

The pilot was certificated and qualified for the operation. Since the passenger was asleep during the approach, he could offer the Safety Board no assistance in the analysis of the accident. However, it can be inferred that nothing in the aircraft's movements or sounds was unusual to the extent that it disturbed his sleep.

The damage to the propellers and the manner in which they cut several trees indicate that both engines were developing power when the aircraft descended into the trees. There was no evidence that the aircraft's flight controls and systems contributed to the accident.

When NAVIK 11 was about 20 nmi southwest of the airport and proceeding toward the OM, the ILS monitor panel for runway 5 showed an abnormal light; the light remained illuminated for about 1 minute. Although the reason for this momentary irregularity was not established, the ILS monitor panel indicated normal operation before NAVIK 11 could have reached the OM. Furthermore, the weather and visibility conditions were such that even a complete ILS failure would not have accounted for the aircraft's descent to the ground 2.6 nmi inside the OM.

Since the landing gear and flaps were still retracted at ground impact and since the pilot did not call the tower when he passed the OM, the Safety Board examined two possible explanations: (1) An emergency situation forced the pilot to land the aircraft immediately, or (2) the pilot was not aware of the aircraft's progress and flightpath.

Since we found no evidence to indicate that an in-flight emergency prompted the pilot to make an immediate forced landing, we believe that the pilot was not aware of the aircraft's progress and flightpath for reasons that he either was subtly or completely incapacitated or that he was asleep. The results of the autopsy and toxicological tests do not support the likelihood of incapacitation.

There are indications that he may have become drowsy after he acknowledged the approach controller's clearance to descend from 7,000 to 4,000 feet and to "join the ILS." Up to that time, he had responded promptly to traffic control clearances. However, about 3 minutes later when he was cleared to make the ILS approach and to contact the tower, he did not answer until he was queried by the controller; in addition, he did not repeat the radio frequency as he had done after previous clearances. This was also the pilot's last recorded transmission.

The pilot probably started the descent from 7,000 ft. at 0116:12 when he acknowledged the clearance to do so. Based on the aircraft's descent rate on the approach to Columbus, Ohio, the pilot probably trimmed the aircraft for an average rate of descent of 600 fpm. If this sink rate continued unchanged, it would have taken about 10 minutes to descend from 7,000 ft. to ground level (800 ft.). Based on these figures, the aircraft would have crashed at 0126, rather than at 0131--the time at which the aircraft's clock stopped. Two factors support the computed accident time of 0126.

First, when the local controller cleared an aircraft for takeoff from runway 5 at 0126:56, he did not see other traffic in the approach zone. By this time NAVIK 11 should have been well within the 10 nmi range of the BRITE display in the Cleveland Tower. Since the aircraft's data block was not observed by the controller, it must have crashed before 0126:56.

Second, at 0119:28, the approach controller told the pilot that he was 15 nmi from the OM; the accident occurred 2.6 nmi inside the outer marker. Using the aircraft's clock as the accident time, the aircraft would have traveled this distance at an average speed of 92 kn. Using the computed accident time, the average speed would have been 162 kn. The latter seems the most likely because the pilot would not have reduced power and changed configuration at lower altitudes if he was not aware of the aircraft's progress.

It could not be determined whether the pilot used the autopilot during the descent. However, the aircraft's wings-level attitude at impact, the 700 fpm reading of the vertical speed indicator, and the descent angle of about 3° suggest that the autopilot was in use and had a stabilizing effect on the aircraft's flightpath.

Combined with the relaxed atmosphere in the cockpit and the pilot's light workload, the evidence suggests that the pilot was not aware of the aircraft's progress and flightpath because he was asleep.

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The observations of another pilot who had accompanied him on previous flights support this hypothesis since the accident occurred during the pilot's last courier flight of that week. However, since this hypothesis cannot be substantiated, the Safety Board is unable to determine the reason for the pilot's failure to arrest the aircraft's descent. In addition, the Safety Board cannot determine what effect a radio call from the approach or local controller might have had on the level of the pilot's awareness. Since the aircraft's data block did not contain altitude information, deviations in that regard would have been unknown to the controller and would not have prompted him to make queries until the data block had disappeared from the radarscope.

ATC Handling of Flight

During the investigation of this accident, it became apparent that there was a breakdown in the services provided by the ATC system since the aircraft did not complete the approach and its disappearance was not detected by ATC. As a result, search and rescue efforts that should have been afforded the occupants of NAVIK 11 were delayed. Although this shortcoming in the ATC system did not contribute to the cause of the accident or to the loss of life, the Safety Board is concerned that an IFR aircraft under radar control can disappear from a radarscope, crash in the approach sector of a major air terminal, and remain undetected.

At the time of the accident, it was the local controller's responsibility to monitor his BRITE radar display to assure that NAVIK 11 was identified as an arrival aircraft. The controller knew that any arriving flight would be required to call the tower no less than 4 miles from the runway threshold. Although he had assumed the added duties of the ground controller, the workload in the tower cab was light and should have not interfered with adequate monitoring of the BRITE display.

Before NAVIK 11's data block disappeared from the BRITE scope, it should have been displayed for 2 to 3*minutes--thetime period NAVIK 11 should have been within range of the BRITE display. It must be concluded that the local controller was not monitoring the BRITE display effectively and that, instead, he relied on the pilot's call near the OM to alert him to his control responsibilities.

The Safety Board believes that under these light workload conditions the "Quick Look" procedure for arriving aircraft should have

been terminated; instead, nonautomated handoff procedures, which require verbal coordination for transfer of aircraft from approach to local controller, should have been used. The local controller would then have known that NAVIK 11 was inbound and failure of the pilot to communicate or failure of a controller to see a radar target on the approach path to the runway would have prompted immediate action to locate the aircraft.

When NAVIK 11 was cleared for the approach, Cleveland Tower was operating under the provisions of paragraph 1262c(2) of Handbook 7110.8D. Also applicable was a facility directive which sets forth communications transfer points.

ARTS facilities have considered the provisions of paragraph 1262(1) and (2) most appropriate to their operations and facility directives had been written along these lines. Unfortunately, these facility directives did not define clearly the responsibilities of the local controller, and they did not give him the prerogative of using procedures other than 1262c(2). Therefore, an amendment of Handbook 7110.8D or the Facility Directive was needed to clarify the local controller's responsibilities.

On May 14, 1975, FAA issued Notice N7110.403, which charges the local controller with the responsibility "to monitor the BRITE sufficiently to accept data transfer on arrivals via the Modify or Quick Look functions within the confines of the facility directive or take action to require some other mode of data transfer.. ..''

The notice gives the local controller the prerogative to use any handoff procedure he deems operationally advantageous under given conditions. Furthermore, it defines his responsibility when the "Modify or Quick Look" functions are being utilized. He must monitor his BRITE display sufficiently to accomplish his duties under these procedures.

The Safety Board believes that the action taken by the FAA to define the local controller's responsibilities in using automated handoff procedures as intended will serve to prevent the undetected disappearance of an IFR aircraft on approach under conditions similar to those during NAVIK 11's approach. However, the Safety Board also believes that the notice would have been more effective had it been explained to all controller personnel that the procedural changes are

intended to prevent the undetected disappearance of aircraft under ATC control.

The Safety Board concludes that damage to the ELT antenna prevented the transmission of audible distress signals that might otherwise have alerted the tower personnel.

2.2 Conclusions

(a) Findings

1. There was no evidence that any malfunction in the aircraft or any of its systems contributed to the accident.

2. There was no evidence that malfunctioning navigational aids contributed to the accident.

3. Weather was not a factor in the accident.

4. There was no evidence that medical or toxicological factors incapacitated the pilot.

5. The pilot's workload was light, and the cockpit conditions were conducive to drowsiness.

6. The pilot did not contact the tower when he passed the OM.

7. The aircraft crashed 2.6 nmi inside the OM with flaps and landing gear retracted.

8. The Cleveland Tower local controller failed to monitor the BRITE radar display in a manner that would assure data transfer on NAVIK 11 as required by the automated handoff procedures in use; as a result the aircraft disappeared, crashed, and remained undetected by ATC.

9. The local controller's responsibilities when using "Quick Look" handoff procedures were not clearly defined at the time of the accident, which contributed in part to **his** failure to comply with the intent of the procedures.

10. Crash damage prevented the transmission of an audible ELT signal.

(b) Probable Cause

The National Transportation Safety Board determines that the probable cause of this accident was the pilot's failure to arrest the aircraft's descent during a landing approach inbound from the outer marker under nighttime VFR conditions. The Safety Board could not determine the reasons for his failure.

3. RECOMMENDATIONS

As a result of this accident, the National Transportation Safety Board has recommended that the Federal Aviation Administration:

"1. Inform all Tower/Approach Control personnel of the facts and circumstances surrounding the NAVIK 11 accident, placing special emphasis on the local controller's responsibilities when utilizing the 'Quick Look' function to acquire data transfer on arriving aircraft.

"2. Assure that all Tower/Approach Control personnel understand the circumstances of the undetected disappearance of this aircraft and encourage them to make use of the options available to effect transfer of control, including verbal communications, at any time conditions are encountered that do not justify reliance on the 'Quick Look' procedure."

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ WEBSTER B. TODD, JR.
Chairman

/s/ FRANCIS H. McADAMS
Member

/s/ LOUIS M. THAYER
Member

/s/ ISABEL A. BURGESS
Member

/s/ WILLIAM R. HALEY
Member

March 10, 1976

APPENDIX A

INVESTIGATION AND HEARING

Investigation

The Safety Board was notified of the accident at 0730 e. d. t., on May 10, 1975. The Safety Board dispatched investigative personnel from its Chicago, Illinois, Field Office and the Board's headquarters in Washington, D. C., to the scene. Parties to the investigation were the Federal Aviation Administration and NAVIK Air, Inc.

Hearing

No public hearing was held.

APPENDIX B

CREW AND CONTROLLER INFORMATION

Pilot William J. Coleman

Pilot Coleman, 36, held commercial pilot certificate No. 1689008 with airplane, multi-and single-engine land and instruments ratings. He also held a certified flight instructor's certificate. He held no type ratings and none was required for the aircraft he was operating. His last 6-month proficiency check was completed satisfactorily on March 13, 1975.

The pilot's personal flight log was not located in the wreckage and its whereabouts are unknown.

The pilot's last application for an FAA medical certificate, dated June 28, 1974, listed 5,500 flight-hours, 450 of which were flown during the 6 months before the date of the application. He held a first-class medical certificate issued .on June 28, 1974. without limitations or waivers.

The aircraft's operator, NAVIK Air, Inc., stated that their records reveal that the pilot had accumulated 6,705 flight-hours, 862.4 of which were flown as pilot-in-command in a Piper PA23-250.

Air Traffic Control Specialist Thomas F. Dundr (Local Controller)

ATC Specialist Dundr. 29, was working the local controller and tower cab coordinator positions in the Cleveland Tower at the time of the accident. Mr. Dundr was hired by the FAA and assigned to the CLE facility on April 13. 1970. He is a fully qualified journeyman controller, and has a Control Tower Operator's Certificate (CTO). Mr. Dundr has a current second-class medical certificate with no limitations. Mr. Dundr had been on duty about 2 hours before the accident, and had been off duty for 16 hours before reporting for duty that day. He has no pilot experience.

ATC Specialist Richard D. Berry (Ground Controller)

ATC Specialist Berry, 32. was working the ground controller, flight data, and clearance delivery positions in the Cleveland Tower at the time of the accident. Mr. Berry was hired by the FAA on October 22, 1969, and assigned to the Cleveland facility on the same date. He is a fully qualified journeyman controller, has a CTO certificate, and a current second-class medical certificate with no

APPENDIX B

limitations. He has no pilot experience. His duty and off-duty times were identical to those of Mr. Dundr's.

ATC Specialist Paul M. Mayhew

ATC Specialist Mayhew, 28, was working the arrival radar position in the IFR room. He was hired by the FAA September 23, 1968, and assigned to the Cleveland TRACON March 21, 1971. Mr. Mayhew is a fully qualified journeyman controller, has a CTO certificate, and a current second-class medical certificate with no limitations. He has no pilot experience. His duty times are the same as those of Mr. Dundr.

ATC Specialist Ted E. Van Meter

ATC Specialist Van Meter, 29, was working the arrival and departure radar position in the approach control IFR room at the time of the accident. He is a trainee controller and was under the supervision of Paul M. Mayhew. Mr. Van Meter was hired by the FAA on May 18, 1970, and assigned to the Cleveland TRACON January 5, 1975. He is a developmental controller, but was a fully qualified journeyman controller at another facility before his transfer to Cleveland. Mr. Van Meter has a CTO certificate and a current second-class medical certificate with no limitations. He has no pilot experience. His duty times were the same as those of Mr. Dundr.

APPENDIX C

AIRCRAFT INFORMATION

The NAVIK Air, Inc., aircraft was a Piper PA23-250, twin engine aircraft. It was powered by Lycoming 10-540-C4B5 engines. Total aircraft flight time was 9,068 hours. The last annual inspection was completed on May 9, 1975. The last 100-hour inspection of the engines was completed on the same date.

	Total Time	Time Since Overhaul
No. 1 Engine	7,478	1,826
No. 2 Engine	7,237	1,773