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NATIONAL
TRANSPORTATION
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AIRCRAFT ACCIDENT REPORT

ALII AIR HAWAII, INC.

BEECH D18S, N5642V, KALOHI CHANNEL

HAWAIIAN ISLANDS

FEBRUARY 22, 1972

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NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D. C. 20591

REPORT NUMBER: NTSB-AAR-72-23 C.2

FILE NO. 3-0002

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-Adopted: July 26, 1972

NATIONAL TRANSPORTATION SAFETY BOARD

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Report Number: NTSB-AAR-72-23

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. NTSB-AAR-72-23	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Aircraft Accident Report. Alii Air Hawaii, Inc., Beech D18S, N5642V, Kalohi Channel, Hawaiian Islands, February 22, 1972		5. Report Date July 26, 1972	
		6. Performing Organization Code	
7. Author(s)		8. Performing Organization Report No.	
9. Performing Organization Name and Address National Transportation Safety Board Bureau of Aviation Safety Washington, D. C. 20591		10. Work Unit No.	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address NATIONAL TRANSPORTATION SAFETY BOARD Washington, D. C. 20591		13. Type of Report and Period Covered Aircraft Accident Report February 22, 1972	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract Alii Air Hawaii, Inc., Flight 143, a Beech D18S, N5642V, was a scheduled visual flight rules air taxi passenger and cargo flight operating from Honolulu, Hawaii, to Lanai, Hawaii. The flight departed Honolulu at 0645 H.s.t., and crashed into the Pacific Ocean in the Kalohi Channel area at a point approximately 38 nautical miles southeast of Honolulu Airport. The accident occurred at approximately 0705 H.s.t. Seven revenue passengers and the pilot were aboard the aircraft, and all were fatally injured. The bodies of three of the passengers and the pilot were not recovered. The aircraft was destroyed and sank into the ocean. There were well-developed rain showers and thunderstorms, with associated turbulence, lightning, and hail in the area; however, visual flight could have been maintained by circumnavigation of this activity. The National Transportation Safety Board determines that the probable cause of this accident was flight into an area of known instrument meteorological conditions containing thunderstorm activity, which culminated in a collision with the water for unknown reasons.			
17. Key Words Aircraft accident; scheduled air taxi, rain showers, thunderstorms; turbulence; visual flight rules; rain; destroyed; fatal; lightning, hail; intentional flight into thunderstorms conditions, unauthorized		18. Distribution Statement Released to Public. Unlimited Distribution.	
19. Security Classification (of this report) UNCLASSIFIED	20. Security Classification (of this page) UNCLASSIFIED	21. No. of Pages 10	22. Price

ALII AIR HAWAII, INC.
BEECH D18S, N5642V, KALOHI CHANNEL
HAWAIIAN ISLANDS
FEBRUARY 22, 1972

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S P E C I A L N O T I C E

This report contains the essential items of information relevant to the probable cause(s) and safety messages to be derived from this accident/incident. However, for those having a need for more detailed information, the original factual report of the accident/incident is on file in the Washington office of the National Transportation Safety Board. Upon request, the report will be reproduced commercially at an average cost of 15¢ per page for printed matter and 85¢ per page for photographs, plus postage. (Minimum charge \$2.00.)

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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D. C. 20591
AIRCRAFT ACCIDENT REPORT

Adopted: July 26, 1972

ALII AIR HAWAII, INC.
BEECH D18S, N5642V, KALOHI CHANNEL
HAWAIIAN ISLANDS
FEBRUARY 22, 1972

SYNOPSIS

Alii Air Hawaii, Inc., Flight 143, a Beech D18S, N5642V, was a scheduled air taxi passenger and cargo flight operating under visual flight rules from Honolulu, Hawaii, to Lanai, Hawaii. The flight departed Honolulu at 0645 H.s.t., on February 22, 1972, and crashed into the Pacific Ocean in the Kalohi Channel area at a point approximately 38 nautical miles southeast of Honolulu International Airport and 8.5 nautical miles southwest of Laau Point, Molokai, Hawaii. The accident occurred at approximately 0705 H.s.t. All aboard, seven revenue passengers and the pilot, were injured fatally. The bodies of three of the passengers and the pilot were lost at sea and were not recovered. The aircraft was destroyed and sank into the ocean, the depth of which in that area varies from 1,200 feet to 6,000 feet.

Pilots flying in the vicinity of the crash site at the time of the accident reported that there were well-developed rain showers and thunderstorms with associated turbulence, lightning, and hail in the area; however, visual flight could be maintained by circumnavigation of this weather activity.

The Federal Aviation Administration's Operations Specification for Alii Hawaii, Inc., does not authorize the airline to operate under instrument meteorological conditions.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of this accident was flight into an area of known instrument meteorological conditions containing thunderstorm activity, which culminated in a collision with the water for unknown reasons.

INVESTIGATION

On February 22, 1972, Alii Air Hawaii, Inc., Flight 143, a Beech D18S, N5642V, was scheduled for a 0600 H.s.t. 1/ departure from Honolulu International Airport en route to Lanai Airport, Lanai, Hawaii. The flight was delayed for 45 minutes by the Officer in Charge (OIC) of the airline. The delay was made to await daylight 2/ to afford the pilot adequate visual conditions to see and avoid the existing and forecast instrument meteorological conditions in the area.

Prior to the flight's departure, the OIC of the airline obtained the latest aviation weather forecast as issued by the Weather Service Forecast Office (WSFO) and posted it for flightcrew reference. The official forecast for offshore Oahu and the Kaiwi Channel was 1,800-foot ceilings with clouds in layers to 30,000 feet. Occasional thunderstorms which would lower ceilings to 1,000 feet and would reduce visibility to 2 miles were also forecast. Turbulence of moderate intensity was forecast to occur below 15,000 feet in the vicinity of mountains, and severe turbulence was forecast in the vicinity of thunderstorms. A local and international SIGMET 3/ mentioned that numerous thunderstorms were located between the Islands of Kauai and Oahu.

In preparation for the flight, the pilot of Alii Flight 143 checked the weather, preflighted the aircraft, and assisted the OIC in loading and securing the cargo and baggage. The passengers then boarded 4/ the aircraft, and takeoff was made at approximately 0645. The OIC and the pilot of Alii Flight 141 observed the takeoff and stated that the aircraft seemed to be operating perfectly and that the engines "sounded normal."

At 0648, Flight 143 contacted the Honolulu Flight Service Station (FSS) 5/ and activated a company prefiled flight plan: destination to Lanai with an estimated 35 minutes en route and 3 hours of fuel aboard. Flight 143 did not request weather information from the FSS nor was radar assistance requested from the Air Route Traffic Control Center (ARTCC); however, the FSS advised the pilot that the new Lanai forecast was for a ceiling of broken clouds at 1,000 feet with brief periods of the ceiling lowering to 500 feet overcast and of a reduced visibility of 3 miles in rainshowers. The acknowledgment of this information was the last known contact with Flight 143.

-
- 1/ All times used herein are Hawaiian standard, based on the 24-hour clock.
 - 2/ Official sunrise for February 22, 1972, in the 'Hawaiian area. was 0658. Twilight was at 0638.
 - 3/ A SIGMET is an advisory which warns airmen of potentially hazardous weather of significance to all aircraft. It includes reports of severe weather such as thunderstorms.
 - 4/ A male passenger occupied the right cockpit seat, otherwise passenger seating locations are unknown.
 - 5/ All references to FSS are to Honolulu FSS.

At 0724, upon being notified by Alii Flight 141 that Flight 143 had not arrived in Lanai, the FSS began preliminary search activities. At 0755, the Coast Guard Search and Rescue (SAR) unit was notified, and extensive search activities began.

At approximately 0740, the pilot of Royal Hawaiian Air Service, Flight 206, which was en route to Honolulu from the Island of Hawaii, observed an oil slick approximately 80 feet in diameter and some debris in the sea at a point 15 nautical miles (NM) west of Lanai Island on the 110° radial of the Honolulu VORTAC. 6/ Flight 206 had deviated to the southwest of its course to avoid a thunderstorm that had been centered in the Lanai-Molokai Channel. The sighting was reported to the FSS and, in turn, reported to the SAR unit.

At 1126, a small portion of the wreckage 7/ and four of the bodies were sighted and recovered by the U. S. Coast Guard. The major portion of the wreckage and the remaining bodies, including the body of the captain, were not recovered. Further recovery efforts were not considered feasible because of the extreme depth (1,200 to 6,000 feet) of the ocean in the area of the accident. Formal search activities were discontinued at 2007, February 22, 1972; however, informal search was continued until March 5, 1972.

Within an hour before and an hour after the accident, numerous interisland airline flights were being conducted under Visual Flight Rule (VFR) or Instrument Flight Rule (IFR) weather conditions at altitudes varying from 500 to 19,000 feet above sea level. The crews of 12 flights stated that they had either encountered or observed instrument weather conditions or light to heavy rain in the vicinity of the accident site. Seven of these flights had been subjected to light to severe turbulence. None of the flights that were conducted under VFR conditions observed heavy sea conditions or waterspouts in the area. 8/

At 0658, Aloha Airlines, Inc., Flight 904 was at 14,000 feet, 5 NM east of Palmtree 9/ Intersection and was on an IFR flight plan southeast, bound on Victor 2-Airways. Upon encountering turbulence, the flight contacted Honolulu ARTCC. The Federal Aviation Administration (FAA) Air Traffic Control Specialist controlling it stated that he diverted Flight 904, because the radar at Honolulu Center indicated an area of heavy precipitation that was approximately 25 miles wide and was located on Victor 2 from a point approximately 10 miles southwest of Palmtree Intersection to approximately 5 miles northwest of Lanai VORTAC.

6/ VORTAC - A colocated VOR and Tactical Air Navigation Aid. These facilities are capable of providing distance information as well as azimuth to aircraft having Distance Measuring Equipment (DME) on board.

7/ Based on computations of the sea currents prevailing on the day of the accident, the accident location and the position at which the wreckage was recovered is considered to be the same.

8/ Refer to Attachment No. 2 for details regarding in-flight weather observations.

9/ Palmtree Intersection--13 NM west of the accident site.

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At 0705, an Air Molokai, Ltd., aircraft which was operating VFR at 700 feet and which was 3 or 4 NM southwest of Lanai Point experienced moderate rain and moderate to severe turbulence. The pilot observed lightning and more severe weather conditions toward the south and in the direction of the accident site, approximately 6 NM away.

Following the accident, the Honolulu and Lanai VORTAC's were flight- and ground-checked by the FAA and found to be within specified tolerances.

Post-mortem and toxicological examination of the four recovered bodies revealed that their seatbelts had not been fastened at the time of the impact. The injuries sustained by these bodies were consistent with deceleration trauma, usually experienced in similar accidents. There was no evidence of fire or explosion.

The captain, ^{10/} aged 41, was certificated and qualified in accordance with existing FAA and company regulations. He was reported to have been a methodical pilot and to have been very precise in preflight of an aircraft. He was also known to have a habit of trimming his aircraft to a nosedown condition.

The aircraft was certificated and maintained in accordance with applicable regulations, and, although the company was restricted to visual flight rule operations, the aircraft was equipped for instrument flight at the time of the accident. It was loaded within allowable weight and center of gravity limits and had a total of 156 gallons of 80/87 octane aviation gasoline on board for the flight.

The parts of the aircraft recovered were a 68-inch structural segment of the inboard right wing section, the attached right wing flap and jackscrew, and small pieces of carpeted wood cabin flooring. Examination revealed that the wing section had been torn from the center wing structure as the result of impact overload forces. There was no evidence of fatigue fractures, fire, or explosion. The wing flap jackscrew remained attached to the flap and was found in the retracted or full, flap-up position.

Two comprehensive inspections of the airline were made by the FAA, one in December 1970, and the other in February 1972. No company records were found during these inspections to indicate that the pilots were receiving the required training as prescribed by Part 135 of the Federal Aviation Regulations and the Company Flight Operations Manual, and none were found during the investigation. The company OIC stated that the prescribed training was being accomplished, but on an informal basis.

^{10/} See Attachment 1.

ANALYSIS AND CONCLUSIONS

The forecast for the area, including the direct route for the flight from Honolulu to Lanai, indicated that thunderstorm activity and instrument meteorological conditions could be expected. Subsequent pilot reports corroborated the forecast and further showed that flight in accordance with visual flight rules was possible by circumnavigation of the thunderstorm activity as required by the company's operation specification. At the time of the accident, there was thunderstorm activity in the Kalohi Channel where the aircraft wreckage and bodies were recovered.

There is insufficient evidence to enable the Board to determine the exact sequence of events that took place from the time of the thunderstorm area penetration to water impact. The circumstances that caused the aircraft to crash into the sea are unknown. However, it is likely that impact resulted from either the pilot's lack of instrument proficiency or an unrecognized descent.'

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of this accident was flight into an area of known instrument meteorological conditions containing thunderstorm activity, which culminated in a collision with the water for unknown reasons.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD:

/s/ JOHN H. REED
Chairman

/s/ FRANCIS H. McADAMS
Member

/s/ LOUIS M. THAYER
Member

/s/ ISABEL A. BURGESS
Member

/s/ WILLIAM H. HALEY
Member

July 26, 1972

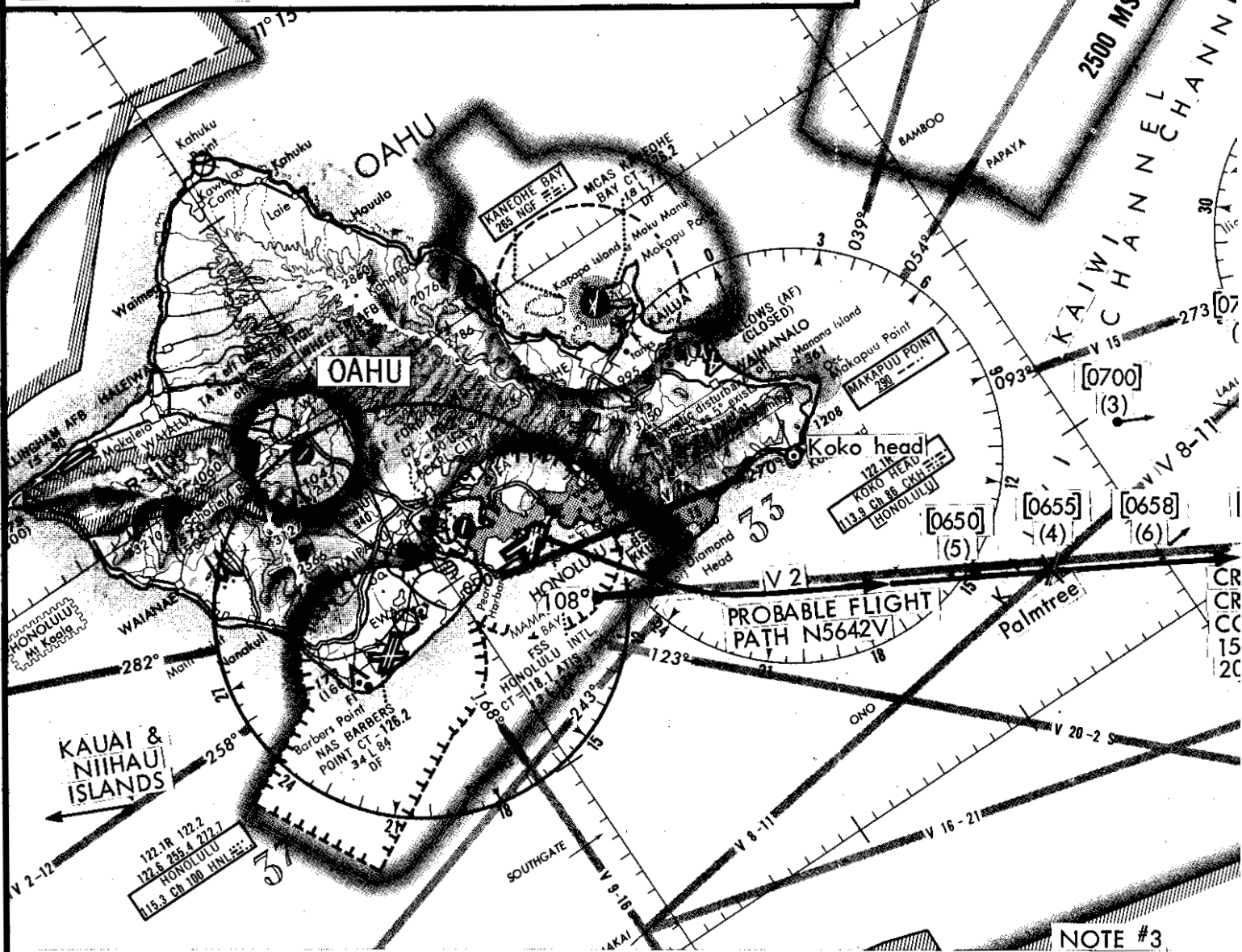
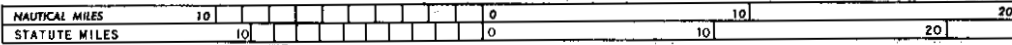
CREW INFORMATION

Captain M. C. Alexander held airline transport pilot certificate No. 1242951, with ratings in airplane multiengine land, rotorcraft (helicopter), DC-3, and the S-55 (VFR). He passed his last examination for an FAA first-class medical certificate on September 1, 1971, without limitations. He had a rest period of over 10 hours prior to the flight on which the accident occurred. He was employed by Alii Air Hawaii, Inc., on March 10, 1970. At the time of the accident, his accrued flight time was 7,323 hours with 764 hours in Beech D18S aircraft. He had approximately 241 simulated instrument hours and 43 actual instrument hours. There **was** no record to indicate that he had accrued any instrument flight time within the last 90 days prior to the accident.

NOTES:

1. AIRCRAFT POSITIONS AND ACCIDENT SITE ARE APPROXIMATE
2. LEGEND FOR AIRCRAFT POSITIONS, TIME, AND FLIGHT DIRECTION
 - A. [] BRACKETS HAWAIIAN STANDARD TIME
 - B. () ENCLOSES ASSIGNED DESIGNATION NO. LISTED BELOW
 - C. → DENOTES DIRECTION OF FLIGHT OF OBSERVING AIRCRAFT
3. ALTITUDE IN FEET OF OBSERVING AIRCRAFT

SCALE:



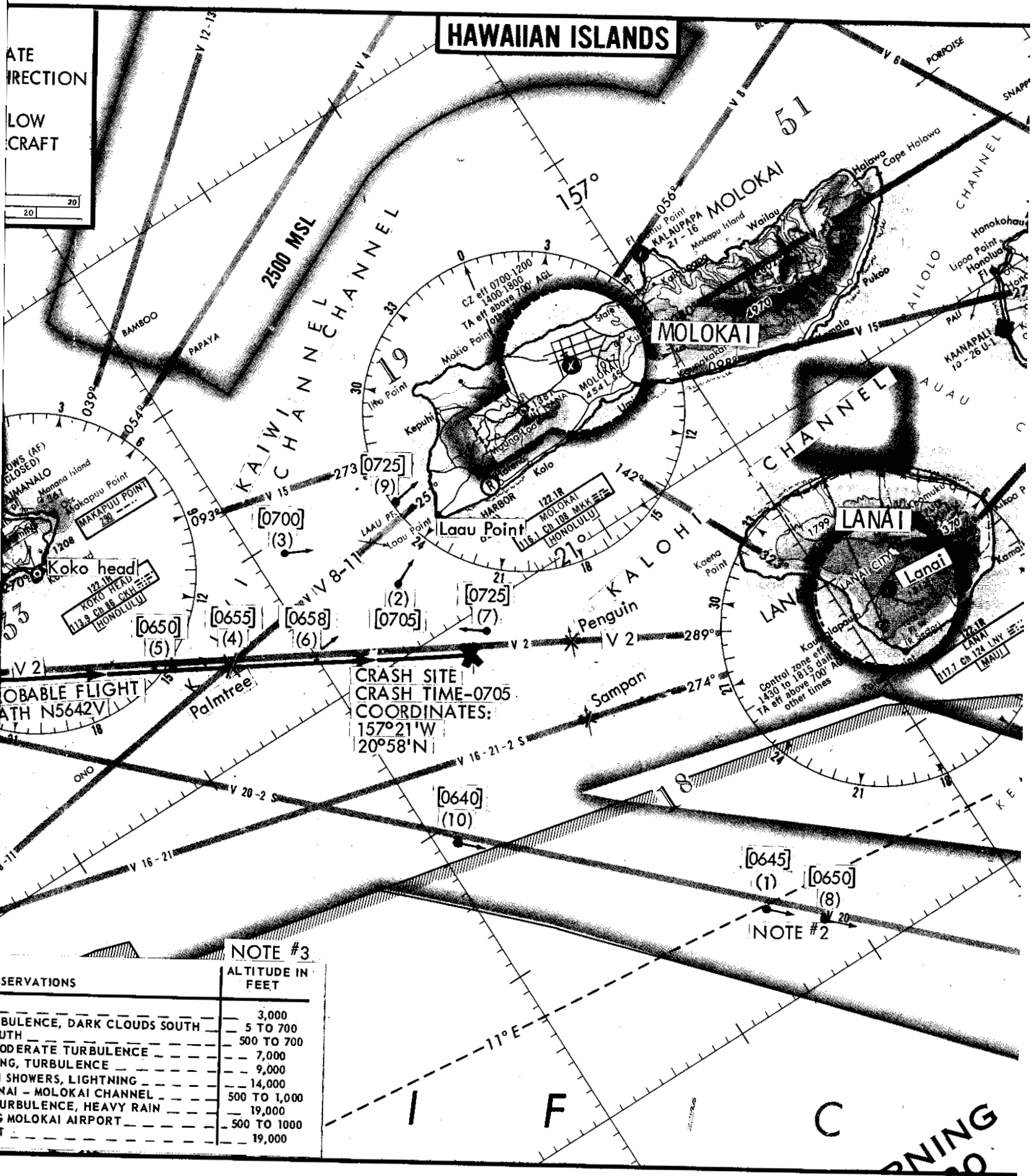
NOTE #3

NO.	AIRLINE	FLIGHT	EXTRACTS FROM OBSERVATIONS	ALTITUDE IN FEET
(1)	ROYAL HAWAIIAN AIR SERVICE	1	LIGHT RAIN AND TURBULENCE	3,000
(2)	AIR MOLOKAI, LTO.		ENCOUNTERED RAIN AND SEVERE TURBULENCE, DARK CLOUDS SOUTH	500 TO 700
(3)	ALU AIR HAWAII, INC.	141	HEAVY RAIN AND DARK CLOUDS TO SOUTH	500 TO 700
(4)	HAWAIIAN AIRLINES	100	ENCOUNTERED RAIN WITH LIGHT TO MOOERATE TURBULENCE	7,000
(5)	ALOHA AIRLINES, INC.	304	FREEZING RAIN. HAIL, WINDSHIELD ICING, TURBULENCE	9,000
(6)	ALOHA AIRLINES, INC.	904	MODERATE TURBULENCE, HEAVY RAIN SHOWERS, LIGHTNING	14,000
(7)	ROYAL HAWAIIAN AIR SERVICE	206	THUNDERSTORM AND LIGHTNING IN LANAI - MOLOKAI CHANNEL	500 TO 1,000
(8)	ALOHA AIRLINES, INC.	380	ENCOUNTERED LIGHT TO MODERATE TURBULENCE, HEAVY RAIN	19,000
(9)	ROYAL HAWAIIAN AIR SERVICE	105	OBSERVED RAIN SHOWER APPROACHING MOLOKAI AIRPORT	500 TO 1000
(10)	HAWAIIAN AIRLINES	308	LARGE AREAS OF HEAVY RAIN TO LEFT	19,000

HAWAIIAN ISLANDS

WIND DIRECTION
LOW CRAFT

20 20

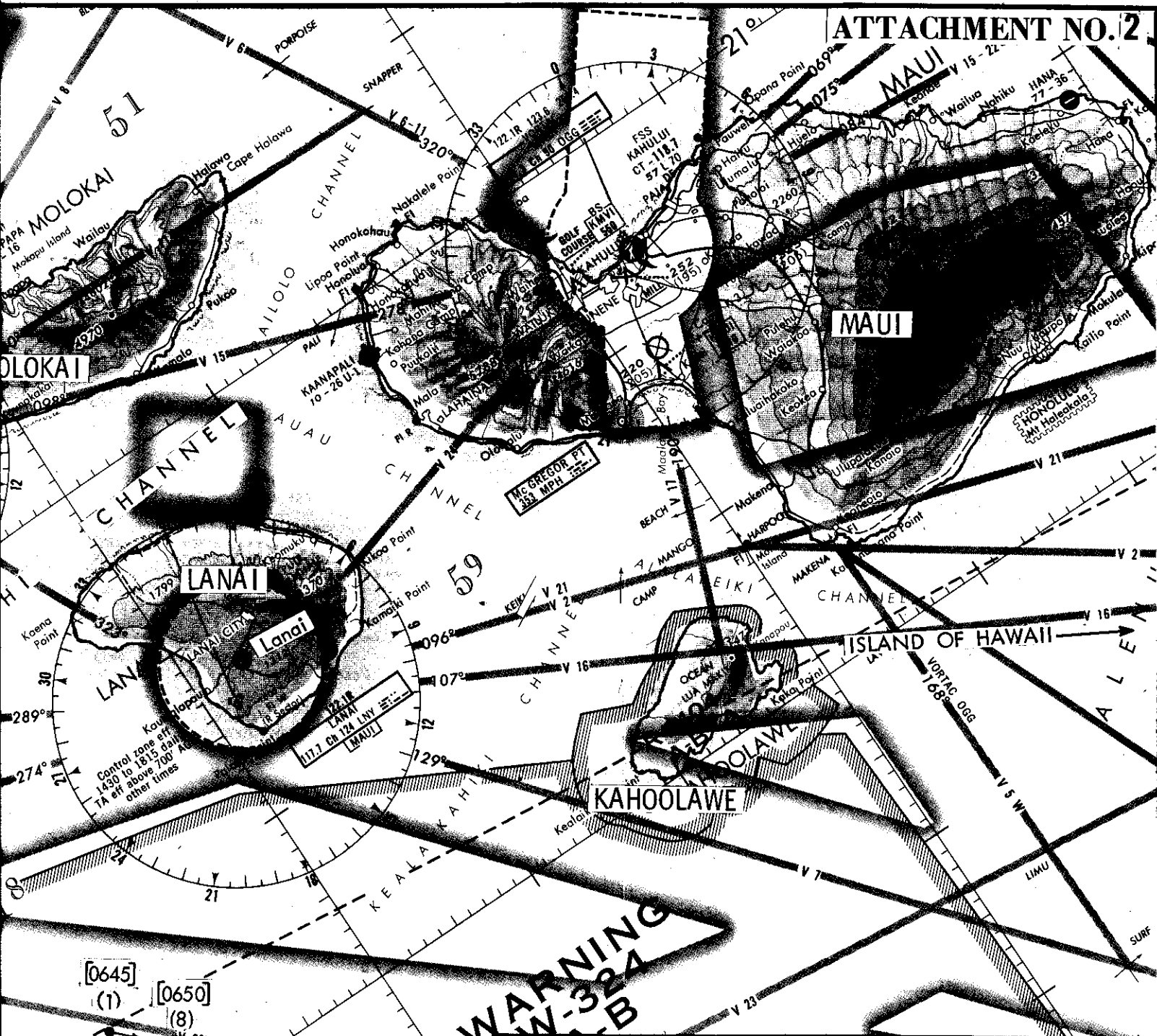


CRASH SITE
CRASH TIME-0705
COORDINATES:
 157°21'W
 20°58'N

NOTE #3

OBSERVATIONS	ALTITUDE IN FEET
—	3,000
—	5 TO 700
—	500 TO 700
—	7,000
—	9,000
—	14,000
—	500 TO 1,000
—	19,000
—	500 TO 1000
—	19,000

[0645] (1) [0650] (8)
 NOTE #2



WARNING
 W-324
 B

[0645]

(1)

[0650]

(8)

NOTE #2

NATIONAL TRANSPORTATION SAFETY BOARD
 Washington, D.C.

**WEATHER OBSERVATIONS
 IN AREA OF CRASH SITE
 ALII AIR HAWAII, INC.
 BEECH D18S, N5642V**

KALOHI CHANNEL, HAWAIIAN ISLANDS February 22, 1972