

15 JAN. 1977

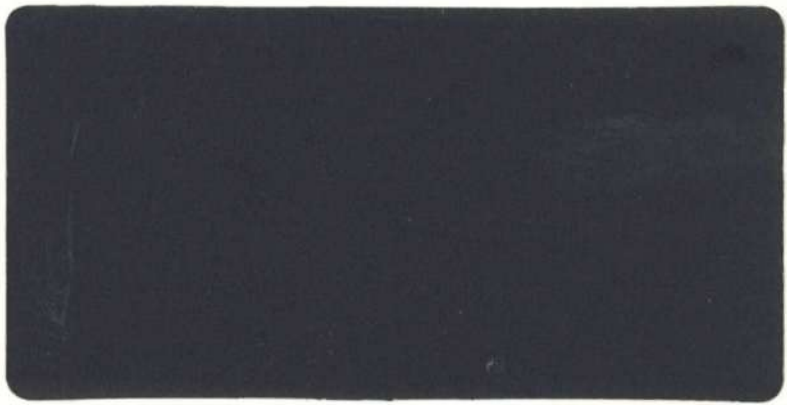


Transport  
Canada

Transports  
Canada

Air

Air



**AVIATION  
SAFETY BUREAU**

**AVIATION SAFETY  
INVESTIGATION**

**BUREAU DE LA SÉCURITÉ  
AERONAUTIQUE**

**ENQUÊTE SUR LA SÉCURITÉ  
DE L'AVIATION**

Transport Canada

Transports Canada

AVIATION SAFETY BUREAU

BUREAU DE LA SECURITE AERONAUTIQUE

Aviation Safety Investigation

Enquête sur la sécurité de l'aviation

R E P O R T

R A P P O R T

Report # P70004  
Rapport

Aircraft Accident Report  
de Havilland DHC-6 C-GNTB  
Terrace, British Columbia

14 January 1977  
15

This report is prepared for  
accident prevention purposes only

*Le présent rapport est rédigé a seule  
fin de contribuer à la prévention des  
accidents*

14 December, 1977

<u>Aircraft Make and Model</u>	<u>Registration</u>	<u>Date/Time</u>
de Havilland DHC-6-300	C-GNTB	15 January 1977 0131 hours GMT
<u>Place</u>	<u>Latitude</u>	<u>Longitude</u>
Terrace, British Columbia	54°25'N	128°34'W
<p>The aircraft was on the final phase of a night instrument approach when it struck the side of a mountain. There were no survivors.</p>		

- 1 -

### 1.1 History of Flight

The aircraft took off from Prince Rupert at 0054 GMT\* (1654 PST) enroute to Prince George with scheduled stops at Terrace and Smithers. At 0117 the pilot contacted Terrace Aeradio, said they were about 8 minutes away from the range and requested the weather. Terrace Aeradio issued the latest weather which indicated that the ceiling and visibility were below published minima for an approach and landing. At 0118 the Flight contacted Terrace Operations and advised that they would be overhead in 5 minutes and on the ramp 11 minutes later. At 0131 the Flight reported by the range inbound at which time a final wind check was given to the Flight and acknowledged. There was no further transmission from the aircraft.

The Rescue Co-ordination Centre was alerted at 0146 when it was evident the aircraft had not landed. A search was initiated and at 0515 the wreckage was found scattered along the eastern slope of Little Herman Mountain. The aircraft had crashed on the final approach track to the runway, 3 miles short of the threshold at latitude 54°25'N longitude 128°34'W.

### 1.2 Injuries to Persons

Injuries	Crew	Passengers	Others
Fatal	3	9	
Serious			
Minor/None			

### 1.3 Damage to Aircraft

The aircraft was destroyed on impact and scattered over 250 feet of the mountain slope.

\* All times in this report are in GMT.

#### 1.4 Other Damage

There was no damage sustained by other objects.

#### 1.5 Personnel Information Pilot-In-Command

The pilot-in-command (Captain) was 41 years old, and held an Airline Transport Licence valid for aeroplanes single and multi-engine land and sea with a Class I instrument rating. He joined the company in 1971 and held a number of responsible positions with the company as well as line pilot. Check rides flown with MOT examiners and company pilots consistently assessed him as a competent IFR pilot. His log book was not located but available records indicate that his total flying time was in excess of 15000 hours obtained over the past 20 years. He had 3000 hours on DHC-6 aircraft of which 117 hours were flown in the past 90 days. He had 12 hours rest time prior to commencement of this duty period and had been on duty 7 hours prior to the accident. His last examination had been completed on 21 September 1976 at which time his medical profile was assessed 1-1-1-1 with no restrictions.

#### 1.6 Co-Pilot

The co-pilot (First Officer) was 24 years old, and held a Commercial Pilot Licence valid for aeroplanes single and multi-engine land and sea with a Class II instrument rating. His licence was valid for the DHC-6 and was type endorsed for the DC-3. He had joined the company 1 October 1976 and was employed as First Officer on the DC-3 and DHC-6. His last proficiency check was carried out on 12 October 1976 and was assessed as satisfactory. He had accumulated a total of 760 hours of which 286 hours were on the DHC-6. He had flown 135 hours on the DHC-6 in the past 90 days. His last medical examination had been completed on 30 September 1976 at which time his medical profile was assessed 1-1-1-1 with no restrictions.

### 1.7 Other Crew (Cabin Attendant)

The Cabin Attendant (Stewardess) was qualified to undertake her duties on the flight.

### 1.8 Aircraft Information

The aircraft, a de Havilland DHC-6 Twin Otter series 300, serial number 463, was manufactured in 1975. It was powered by two Pratt and Whitney PT6A-27 turbo-prop engines. The aircraft was equipped with an electrically heated windshield.

The aircraft was maintained in accordance with the approved Company Air Maintenance Manual and de Havilland Equalized Maintenance System. Total time on the airframe and engines at the time of the accident was 1852.2 hrs. The aircraft Journey Log indicated that all routine flight snags had been corrected with exception of the left wing de-icer boot which, due to numerous small holes, would not fully inflate when cycled during flight. It was scheduled to be replaced on the weekend following the accident.

The Aircraft Certificate of Airworthiness had expired on November 6, 1976 when the Condition and Conformity Inspection (CCI) procedure was not complied with. When entering the Aircraft Status information for C-GNTB, the company's chief engineer had mistakenly looked at the first entry line in the Technical Log where the aircraft is shown as "New" on 21 May 1975. It was this May date that was entered as the CCI renewal date instead of November 1975 which is the C of A itself. With the exception of the expiry of the C of A which lapsed as a result of non-compliance with the CCI procedure, there is no evidence to show that the aircraft was not properly maintained.

It was determined that both engines were producing power at impact. There was no evidence of failure or malfunction of the engines, airframe, electrics or controls.

The aircraft's weight and balance was within prescribed limits at the time of the accident.

#### 1.9 Meteorological Information

##### AFTERCAST OVER FLIGHT ROUTE

By 2000 on January 14, an eastward moving frontal system lying over the Queen Charlottes had spread extensive layers of cloud eastward past Prince George.

From 2200 to 2300 all stations near the Prince George-Smithers route reported stratus ceilings from 5 to 15 hundred feet and visibilities near 2 miles. Over the Terrace terminal at 2327, the ceiling was 3 thousand feet, visibilities 2 to 3 miles obscured due to snow and a moderate northerly wind. When the flight departed Prince Rupert for Terrace (0054), heavier snowfall over the area caused conditions to deteriorate to precipitation ceilings as low as 12 hundred feet with visibilities as low as 1 1/4 miles.

##### AFTERCAST OVER TERRACE TERMINAL 1422 - 1502

From 142000 to almost 142300 Terrace Airport had reported a ceiling of about 2 thousand feet and visibilities from 5 to 8 miles in light snow. At 142300, the snow stopped with subsequent improvement in the ceiling to 38 hundred feet. The snow began again at 142327 and the visibility dropped to 2 1/2 miles. At 0000 the ceiling had lowered to 2 thousand feet with a visibility of 1 mile in light snow. This was the latest reported weather available to the crew prior to take-off. At 0100, the ceiling further deteriorated to 12 hundred feet with 1 1/4 miles visibility. By 150200, the ceiling had improved to 2 thousand feet and the visibility to 3 miles.

- 5 -

The actual Terrace weather at 0100 and assumed to be the same at the time of the accident was 500 feet scattered, precipitation ceiling 1200 feet, sky obscured, visibility 1 1/4 miles in light snow, temperature -2, dew point -3. wind 360 degrees magnetic at 14 mph, altimeter 29.96, clouds stratus fractus 4, snow 6, remarks: drifting snow. This weather was passed to the flight at 0117 by Terrace Aeradio and acknowledged without comment.

#### ICING

During the afternoon of January 14, warm air was flooding across B.C. ahead of the upper front over the Queen Charlottes. However, in the inland valleys, cold air was still trapped in the lower levels. For example, the Terrace airport was still reporting below freezing temperatures and snow. Although no freezing rain was reported, it was a distinct possibility on the approach to Terrace at lower levels. This could have caused a heavy clear icing situation. Noteworthy is the fact that freezing rain was mentioned as a possibility at the Terrace Airport on the 142300 terminal forecast.

#### TURBULENCE

Upper winds near the Prince Rupert to Terrace flight route were reported south to southwest 20 to 25 knots. However, the surface winds were reported northerly 15 with gusts to 25 knots. This demonstrates the presence of large vertical wind shear and the possibility of severe turbulence.

#### 1.10 Aids to Navigation

The Terrace Airport radio facilities consist of a radio range, a track guidance localizer, two NDB's, a fan marker on the airport and a second fan marker south of the range and a Z marker in conjunction with the Kitimat NDB. All facilities were operating and within tolerance at the time of the accident. (See appendix 4)

The aircraft was equipped with navigation equipment to current standards and these were serviceable.

#### 1.11 Communications

The communications equipment on the aircraft and on the ground was serviceable and was not a factor in the accident. Pertinent communications between the aircraft and Terrace Aeradio were recorded and are depicted on Appendix 6. The recorded voice <sup>DURING THE APPROACH</sup> was identified as that of the First Officer.

#### 1.12 Aerodrome Conditions

The Terrace Airport, operated by Transport Canada, is located in the valley of the Skeena River 65 nautical miles east of Prince Rupert. The valley is narrow and oriented east-west at Terrace. A second valley oriented southwards towards Kitimat and northward to Kitsumkalum Lake on to the valley of the Nass River. The valley floor is generally below 1000' ASL but there are numerous small peaks that rise above that level. Mountains surrounding the valleys rise steeply to elevations of 6000' ASL. The town of Terrace is on the banks of the Skeena River about 5 miles north of the airport. During the winter months, only runway 14/32 is used. It is 713 ASL, 6000 feet and 200' wide. Runway lights and centre row low intensity approach lights and runway identification strobes are installed.

At the time of the accident, the runway was snow covered but had been recently plowed and had a James Brake Index reading of .45. The approach strobe and runway lighting was serviceable and on. The runway lighting was set at "5", maximum intensity. (See appendix 4 and 5)

#### 1.13 Flight Recorders

The aircraft was not equipped with flight recorders.\*

\* Under existing regulations there is no requirement for aircraft in the DHC-6 category to be equipped with flight recorders.

#### 1.14 Wreckage and Impact Information

The accident site was on the eastern side of Little Herman Mountain 54°25'N 128°34"W; the average elevation of the wreckage trail was 1160 feet ASL and extended 565' from the initial contact point.

Little Herman Mountain lies on the approach to runway 32 at the Terrace Airport. It is a logged off area with isolated stands of burned and scrub timber around the top of the mountain. The terrain where the accident occurred is very uneven, the ground is rocky with numerous tree stumps and snags which were covered with two feet of snow at the time of the accident.

The aircraft initially struck three dry trees on a ridge, crossed a depression and struck a fourth dry tree before the left wing tip became detached on a stand of trees. The most severe ground strike was on a knoll 31 feet beyond the wing strike. At this point, the forward fuselage was demolished, both wings separated from the fuselage, the airstair door came off, the propellers separated from the engines at the reduction gear boxes, the right engine became detached from the right wing, the left engine remained with the left wing but the engine mounts were broken. The momentum carried the fuselage across another depression a further 130 feet to a second knoll where the forward fuselage again struck ground heavily, the tail came over and the fuselage continued tail first coming to rest in a depression 79 feet further on. The contents of the fuselage were scattered along the wreckage trail from the initial ground strike.

The wing and tail surface leading edges were iced approximately four inches back from the leading edge to a maximum depth of one eighth of an inch. The temperature in the area from the time of the accident to this inspection remained below freezing. The wing flaps had been extended to 10°.

### 1.15 Fire

There was no evidence of pre or post impact fire.

### 1.16 Pathological Data

*f the flight crew*  
*The pathological report stated that:*

~~Lactate profiles of the crew revealed the following information:~~

- the Captain experienced at least one minute of anxiety followed by 12 seconds of acute stress immediately prior to impact.
- the First Officer, unlike the Captain, did not experience any anxiety prior to the onset of an acute stress reaction 10 seconds before impact.

These results would appear to indicate that just prior to the accident, the Captain was aware of a situation which caused some anxiety on his part but none in the First Officer.

Both the Captain and First Officer became aware of imminent danger almost simultaneously.

### 1.17 Survival Aspects

Terrace Airport does not have a Control Tower, however, the Aeradio operator initiated a radio search for the aircraft 3 minutes after the aircraft should have landed. The Rescue Co-ordination Centre was alerted 9 minutes later (0146) when radio contact could not be re-established with the aircraft. An unsuccessful ground search was made of accessible terrain south of the airport. At 0355 a locally based helicopter joined the search and located the crash site 20 minutes later. On subsequent flights, the helicopter transported paramedics and doctors to the scene. Rescue operations were suspended until daylight when it became evident that there were no survivors.

The aircraft was equipped with an ELT which functioned on impact but was ineffective because the radiated signal was attenuated when the antenna was torn off at the fuselage during the crash.

This was a non-survivable accident during which the aircraft sustained severe to extreme impact damage.

#### 1.18 Tests and Research

The cockpit instruments were subjected to laboratory analysis to establish their respective indications at impact.\*

The following was determined:

- The altimeter had a barometric pressure setting between 29.94 and 29.98 inches of Hg and an indicated altitude between 1170 and 1180 feet.
- The airspeed indicator was indicating between 95 and 115 knots.
- The transponder was "ON" and selected to 1300.
- The Distance Measuring Equipment was "ON".
- The left and right fuel gauges indicated 1130 and 990 lbs respectively.
- The fuel selectors were normal.
- The left and right VHF transceivers were both "ON" and selected to 130.80 Mhz and 119.20 Mhz respectively.
- Both VHF localizers were "ON" and selected to 109.90 Mhz.
- The left Radio Compass was tuned to 331 Khz with "ADF" selected.
- The right Radio Compass was tuned to 256 Khz with "ANT" selected.
- The left and right fuel emergency shut off switches were "NORMAL".

It was also determined that electrical power was available at impact.

\* *Laboratory Report LP20/77, LP24/77, LP55/77 refers.*

## 2.0 ANALYSIS

### 2.1 Meteorological Factors

<sup>THE</sup>  
The ~~Captain's~~ decision to proceed with the flight to Terrace was based upon the weather information available ~~to him~~ prior to departure from Prince Rupert. Ceilings and visibilities were variable from above approach minima to below minima at the time of the accident. (Thirty minutes after the accident the surface weather had improved to well above approach minima.)

Under such varying conditions, the <sup>CREW</sup> ~~Captain~~ elected to fly the scheduled route. When 8 minutes west of the Terrace range, the flight was issued the latest Terrace weather sequence that indicated a 1200' ceiling existed, 420' below the minima required to complete a published approach. Additionally, the reported visibility was 1 1/4 miles, 3/4 below the minima required for an approach and landing. Nevertheless the <sup>CREW</sup> ~~Captain~~ decided to carry out an instrument approach, <sup>THIS</sup> decision to do so probably influenced by the variable nature of the surface conditions.

The possibility of freezing rain being encountered at lower levels during the approach would certainly influence the <sup>CREW DECISIONS</sup> ~~Captain~~, particularly in light of the unserviceable wing de-icer boot. An abbreviated approach would serve to minimize flight in the lower levels and simultaneously expedite the approach.

Wreckage information revealed an accumulation of 1/8 inch of airframe ice. This amount is not considered sufficient to have caused the pilot any problems. The Flight Manual does not call for the de-ice boots to be operated until 1/4 inch of ice has built up. The aircraft was fitted with an electrically heated windscreen therefore impairment of forward visibility by ice accumulation was improbable.

The presence of icing in any amount, would however, induce a degree of psychological stress on the Captain under these circumstances.

## 2.2 Initial Approach Phase

The normal approach procedure for an arrival from Prince Rupert would be to proceed to the range at cruise altitude at or above 9000' ASL. The outbound sector is along the south course of the range descending 6500' ASL to the Kitimat NDB. Procedure turn to the right is carried out at 6500 ASL to Kitimat NDB where a descent to 3500' ASL may be commenced to Iron Fan Marker inbound. Track guidance is provided by the south course of the range and/or the Track Guidance Localizer (TGL) which coincide at this point to as far as the range site. Descent to 2100' ASL from Iron Fan marker to the radio range, a distance of 7.6 NM is permitted. After passing the radio range, descent to a minimum of 1620' ASL is authorized provided TGL is being used for tracking. This altitude to be maintained to the missed approach point at the airport, 5.8 NM from the range. The north course of the radio range and TGL diverge by 3° with the range leg going directly over centre of the airport and the TGL slightly to the right of the runways. There are several small mountains between the range and the airport (the Herman Mountains) which rise to approximately 1200' and 1700' ASL and are marked by hazard beacons. The larger Herman Mountain is left of the centreline while Little Herman is more or less on the centreline.

The total distance for a full approach is at least 44 miles plus procedure turn. The time to carry out a full published approach at normal approach speeds, would take not less than 27 minutes. From the estimates passed to Terrace Operations it is evident that the Captain intended to carry out an abbreviated non-standard approach. He estimated it would take 11 minutes from overhead the range to the ramp. Based on his last estimate the aircraft is presumed to have been overhead the range outbound at 0123. In actuality the approach took

- 12 -

9 minutes from overhead to the impact point which was 2 minutes from the runway threshold. To descend from 9000 MSL, the minimum enroute altitude, to the airport ramp in 11 minutes as estimated, would require a rate of descent in excess of 1100 feet per minute from outbound the range to inbound. The actual time element from overhead to impact would have necessitated a 900 FPM rate of descent, almost double the normal rate. (See appendix 1)

#### Final Approach Phase

It is reasonable to assume that the aircraft was successfully manoeuvred to cross the range station on the inbound track of 340°m. The distance from the range to the threshold as depicted on the RKG/NDB-1 approach plate is 5.1 NM.

The published minimum for crossing the range is 2100 MSL. With a calculated ground speed of 80K, it would require 3 min. 50 sec. to reach the threshold, at which point the minimum descent altitude (MDA) of 1620' is depicted as being attained. Straight in approaches are not authorized. To fly the depicted profile with an 80K groundspeed would require a 125 feet per minute (FPM) rate of descent from the range.

The aircraft struck trees in a shallow descent, wings level 440' below MDA at a point 2 miles beyond the range. To attain this level would have required an excessive final rate of descent (approximately 750 FPM), had the aircraft crossed the range at 2100' MSL.

It is unlikely that a highly experienced pilot would initiate a high rate of descent in close proximity to known obstructions such as the Herman Mountains - let alone the 400' below published minimum. To facilitate a shallow descent it is probable that the aircraft descended below 2100 MSL before crossing the range.

Three minutes before crossing the range inbound, the First Officer queried the Aeradio on the status of the localizer, to which the Aeradio responded that it was functioning normally. (See appendix 2) This transmission was significant for it implied that the

aircraft's localizer had broken lock and was displaying an "off flag". The aircraft's position at this time would have been 5 NM south of the range. Pre and post accident flight checks of the localizer confirmed adequate reception of signals to maintain position lock at 2100' MSL as far south as the Iron Marker 7.6 NM south of the range. It is reasonable therefore, to assume that when the query pertaining to the localizer was made, the aircraft was below the minimum reception altitude of localizer signals. These signals were, in all probability, being shielded to some degree by the Herman Mountains which were between the aircraft and the localizer transmitter site.

The Captain, familiar with the Terrace instrument approach and terrain features, was aware that descent to an altitude substantially below published minimums was possible between the Iron Marker and the Terrace Range Station. In this area flight below the field elevation is possible.

Localizer shielding was temporarily experienced, however, the southern leg of the range was available for alternative tracking in conjunction with ADF tracking.

In all probability the aircraft was at or below final approach minimums when it crossed the range inbound.

Communications from the aircraft during the approach was handled by the First Officer which indicates that the Captain was at the controls.

*REPORT STATED*  
~~THE~~ Pathological data established that the Captain experienced at least 1 minute 12 seconds of anxiety and stress before the crash. Using a computed 80K groundspeed, the elapsed time from the range to the impact point would have been 1 minute 15 seconds.

It appears that after crossing the range inbound the Captain elected to descend below minimums in order to successfully complete the approach. He was ~~fully~~ aware of the massive obstruction in the immediate vicinity. <sup>AS STATED IN THE PATHO REPORT</sup> The onset of the Captain's pathologically determined anxiety and stress period commenced when flight below final approach minimums was continued, or initiated, when by the range inbound and terminated upon impact, 75 seconds later.

The aircraft struck the side of Little Herman Mountain at the 1180' MSL level, 20' below the crest, on a heading of 340°m. The point of initial impact was 440' below the published minimum descent altitude for the type of approach attempted.

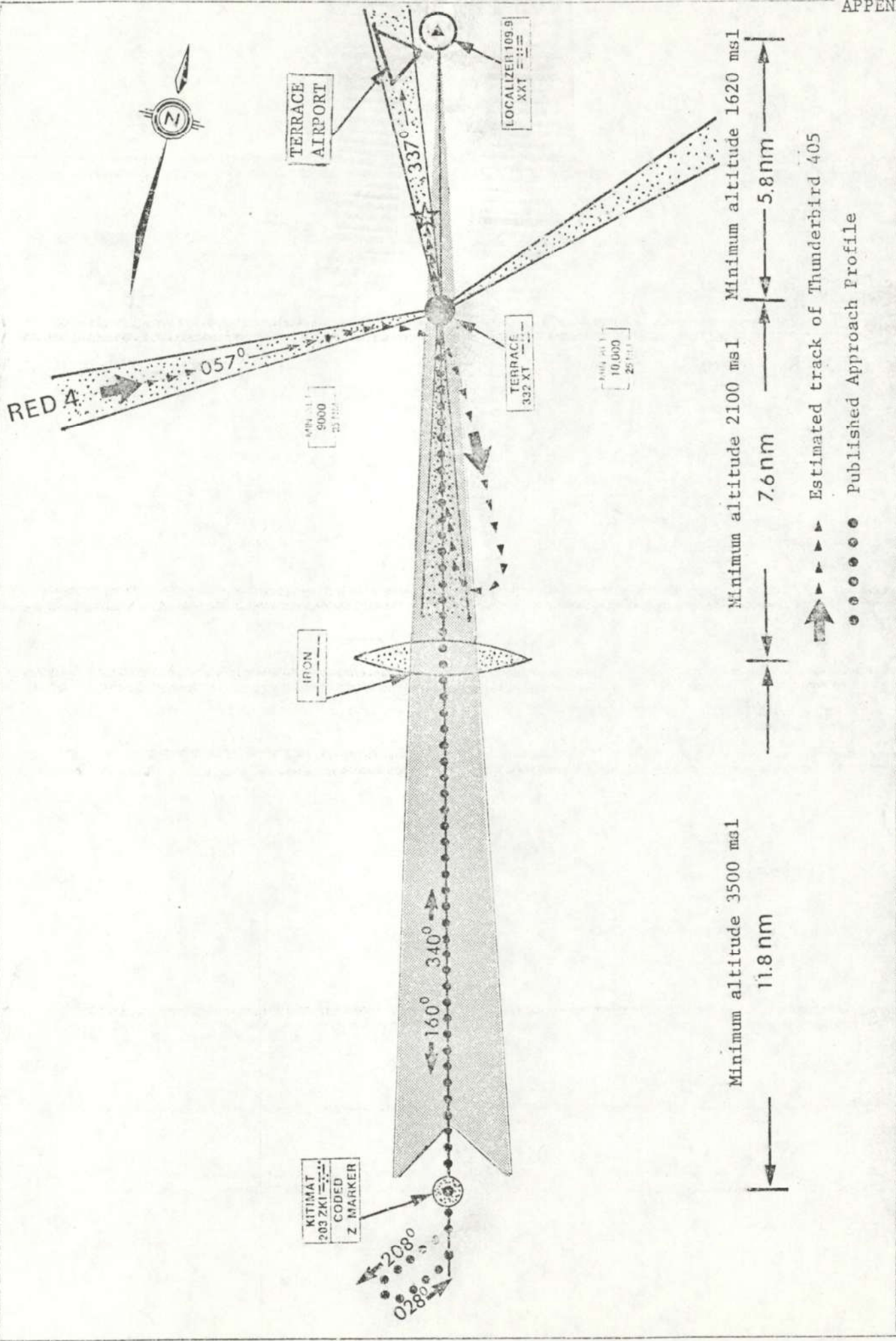
The obstruction which the aircraft struck is clearly depicted on both published approach charts for Terrace Airport.

*which is consistent with the patho report*

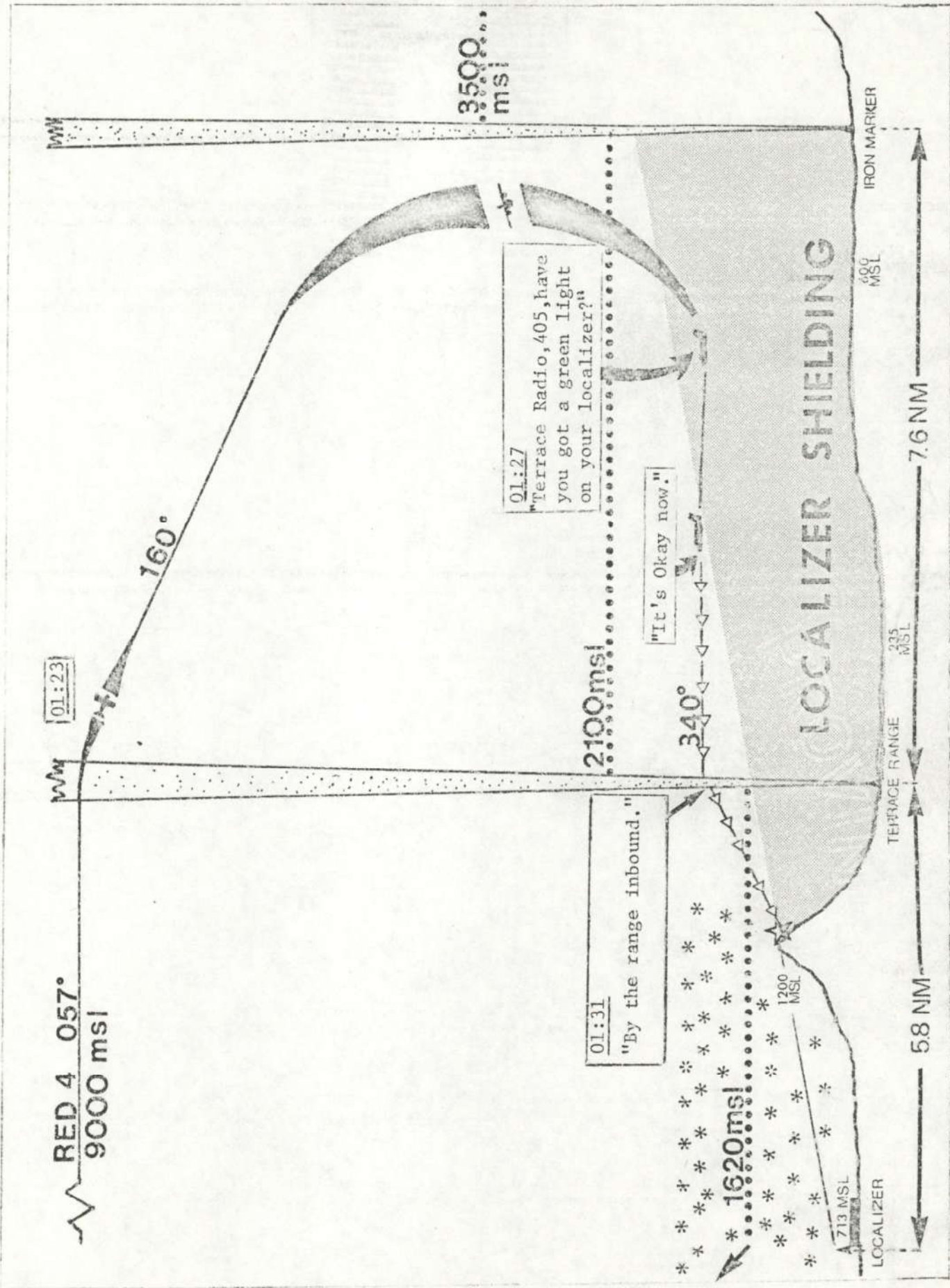
- 15 -

*FINDINGS*  
CONCLUSIONS

- The ceiling and visibility were reported to be below published minima for landing when the approach was initiated.
- The Flight <sup>CREW</sup> carried out a non-standard abbreviated approach.
- The Flight <sup>CREW</sup> descended below the published minimum altitude of 1620 feet MSL.
- The Captain was at the controls throughout the approach. *THE APPROACH WAS* He continued the approach below the authorized minimum altitude for undetermined reasons.

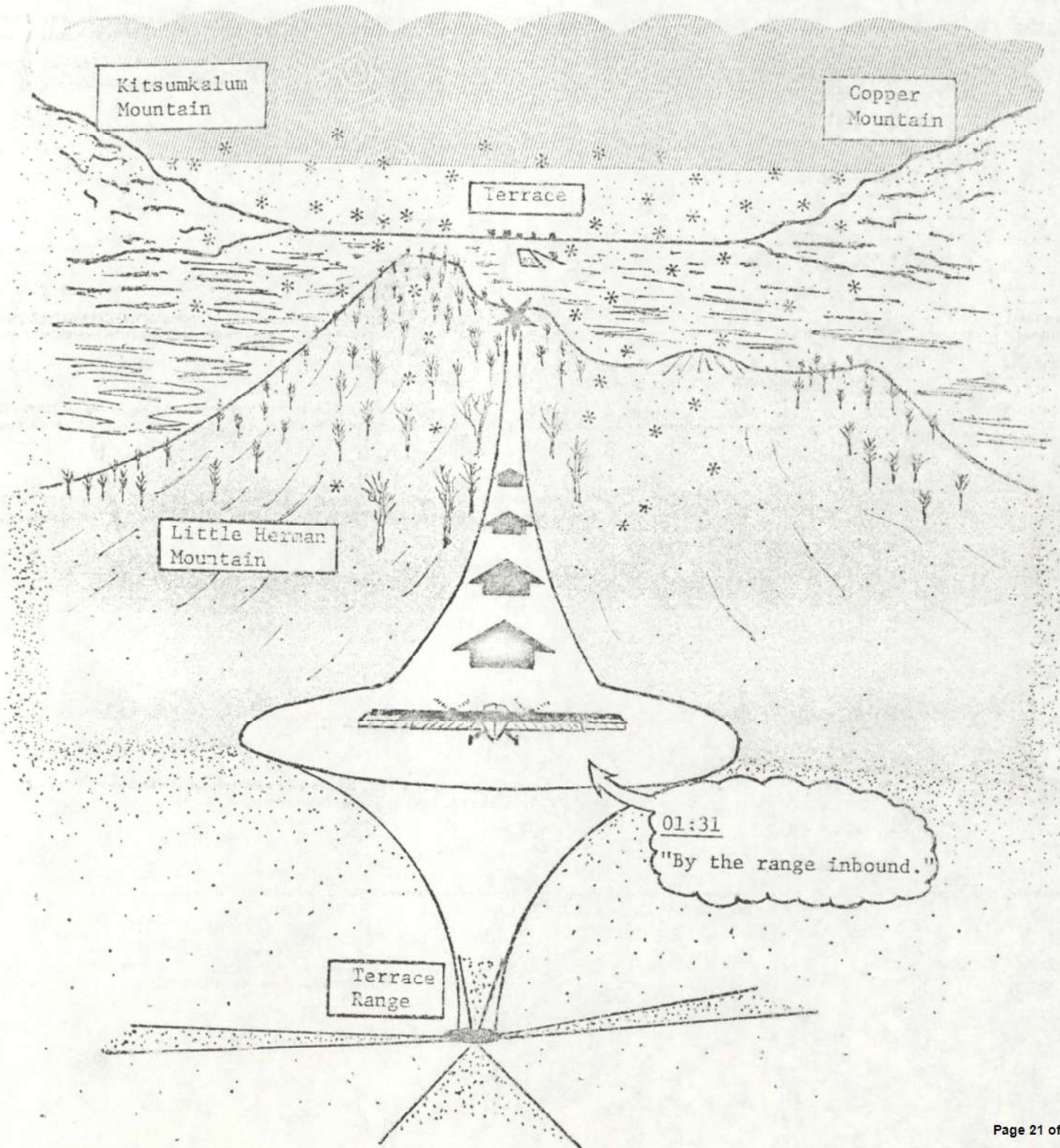


# ESTIMATED FLIGHT PROFILE

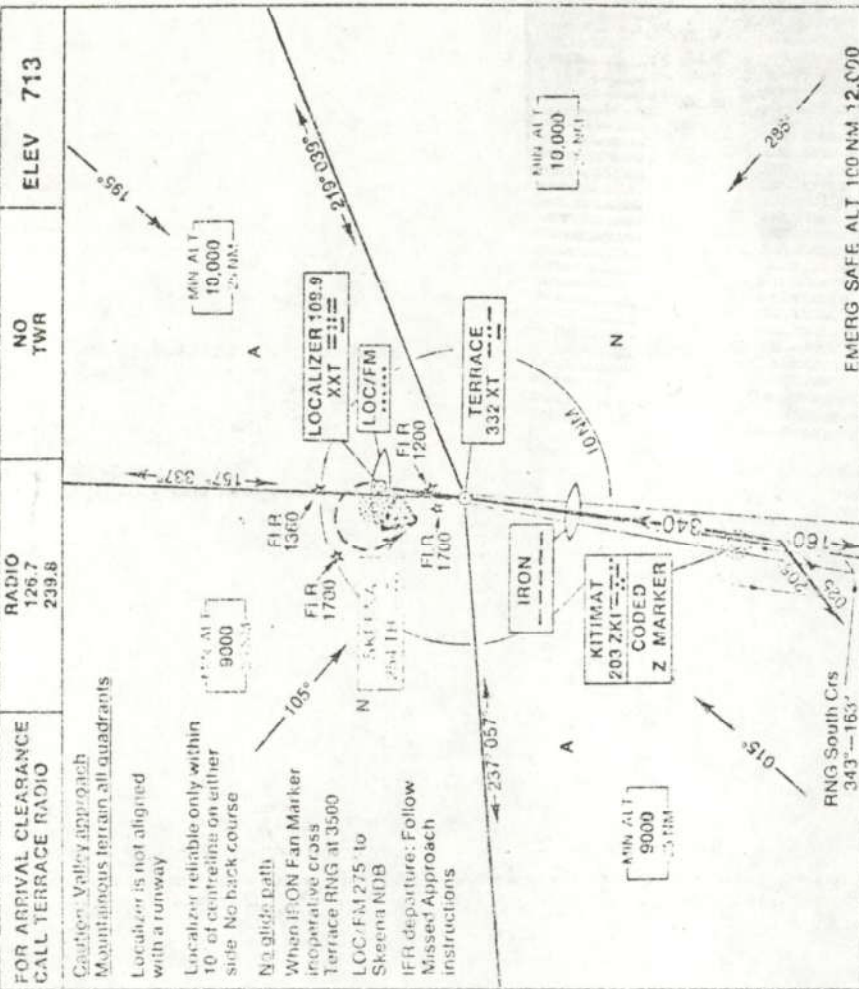


ESTIMATED FLIGHT PROFILE

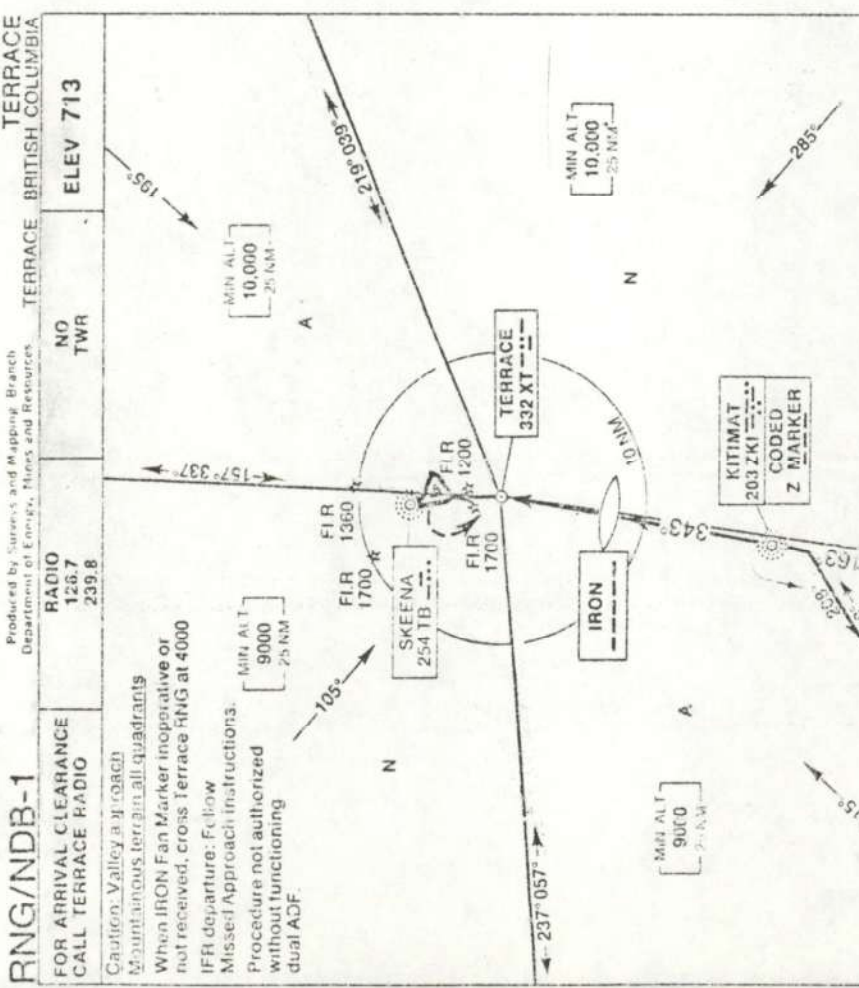
(GRAPHIC DEPICTION)  
FINAL FLIGHT PATH



**LOC/NDB/RNG-1** TERRACE BRITISH COLUMBIA



**RNG/NDB-1** TERRACE BRITISH COLUMBIA



**FOR ARRIVAL CLEARANCE CALL TERRACE RADIO**  
 RADIO 126.7  
 239.8  
**NO TWR**  
**ELEV 713**

**Caution:** Valley approach  
 Mountainous terrain all quadrants  
 Localizer is not aligned with a runway  
 Localizer reliable only within 10 of centreline on either side. No back course  
 No glide path  
 When IRON Fan Marker inoperative cross Terrace RNG at 3500  
 LOC/FM 275 to Skeena NDB  
 IFR departure: Follow Missed Approach instructions

**LOCALIZER 109.9**  
**LOC/FM**  
**TERRACE 332 XT**  
**IRON**  
**KITIMAT 203 ZKI**  
**CODED Z MARKER**  
**SKEENA 254 TB**  
**MIN ALT 9000**  
**MIN ALT 10,000**

**MISSED APPROACH**  
 Immediate left turn climbing direct to XT RING. Continue climb Southbound on localizer to cross ZKI 4000 at or above 5500 Shuttle climb to 6500 and hold south of ZKI NDB 340 inbound all turns left

**EMERG SAFE ALT 100 NM 12,000**

Category	A	B	C	D
STRAIGHT IN	NOT AUTHORIZED			
CIRCLING	1620	(907)	2	2020 (1307) 2

**LOC/NDB/RNG-1** 54°28'N-128°35'W  
 EFF 26 FEB 76  
 CHANGE LOC/FM note added  
 VAR 27 E

**FOR ARRIVAL CLEARANCE CALL TERRACE RADIO**  
 RADIO 126.7  
 239.8  
**NO TWR**  
**ELEV 713**

**Caution:** Valley approach  
 Mountainous terrain all quadrants  
 When IRON Fan Marker inoperative or not received, cross Terrace RNG at 4000  
 IFR departure: Follow Missed Approach instructions  
 Procedure not authorized without functioning dual ADF.

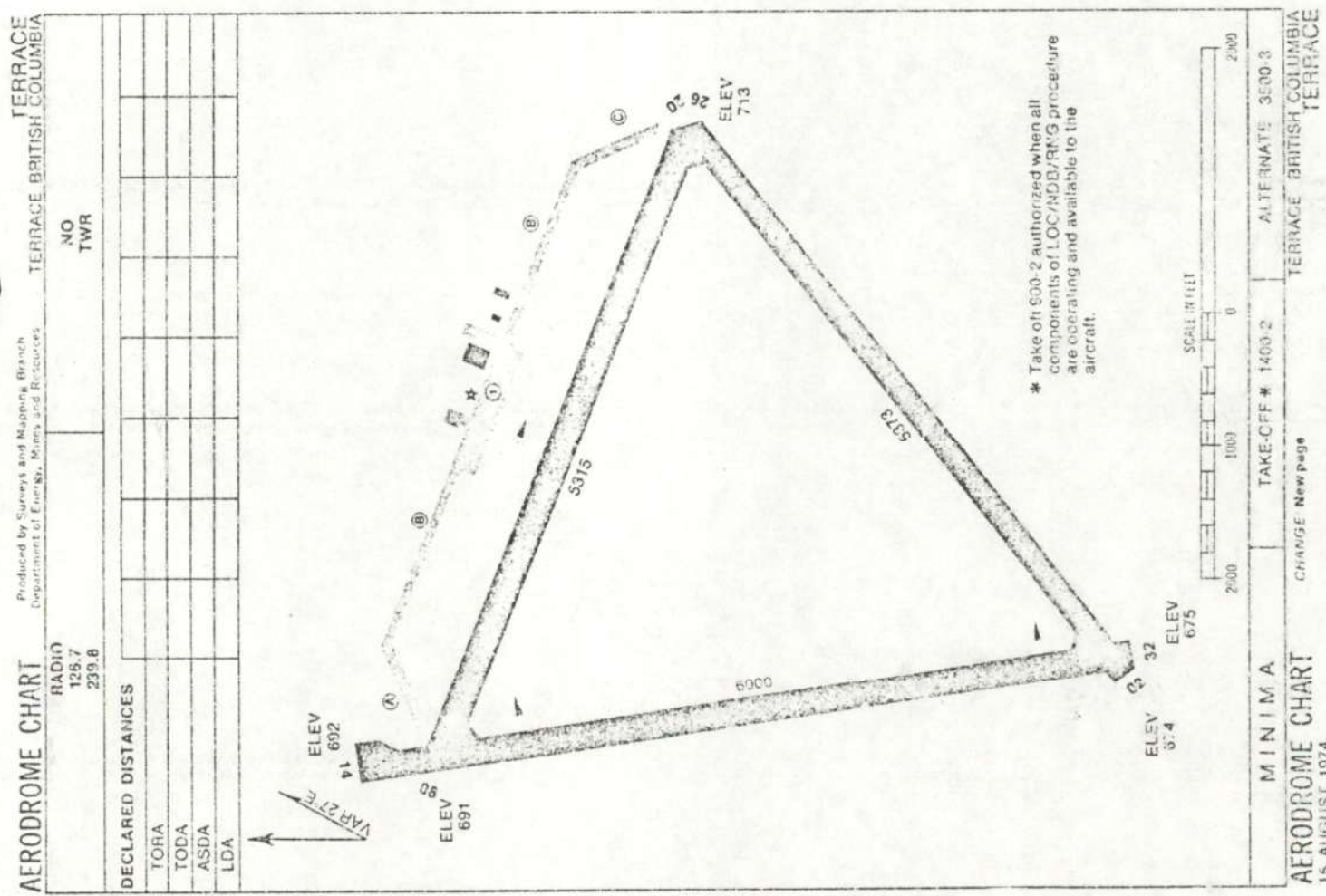
**SKEENA 254 TB**  
**IRON**  
**KITIMAT 203 ZKI**  
**CODED Z MARKER**  
**TERRACE 332 XT**  
**MIN ALT 9000**  
**MIN ALT 10,000**

**MISSED APPROACH**  
 Immediate left turn climbing direct to XT RING. Continue climb Southbound on South Crs of Ring to cross ZKI 4000 at or above 5500 Shuttle climb to 6500 and hold south of ZKI NDB 340 inbound all turns left

**EMERG SAFE ALT 100 NM 12,000**

Category	A	B	C	D
STRAIGHT IN	NOT AUTHORIZED			
CIRCLING	2100	(1387)	2	3140 (2427) 2

**RNG/NDB-1** 54°28'N-128°35'W  
 EFF 26 FEB 76  
 CHANGE Nil  
 VAR 27 E



## TRANSCRIPT - COMMUNICATIONS - TERRACE AERADIO/THUNDERBIRD 405

1501:17 GMT - 1501:38 GMT

<u>TIME</u>	<u>SOURCE</u>	
01:17	TB 405	TERRACE RADIO THUNDERBIRD 405.
	T/R	THUNDERBIRD 405 TERRACE RADIO GO AHEAD.
	TB 405	ROGER WE'RE ABOUT 8 MINUTES AWAY FROM THE RANGE, GO AHEAD YOUR LATEST SEQUENCES.
	T/R	405 ROGER, TERRACE SPECIAL ON THE HOUR 500 SCATTERED, PRECIPITATION, CEILING 1200 SKY OBSCURED VISIBILITY 1 $\frac{1}{2}$ LIGHT SNOW, TEMPERATURE. -2, DEW POINT -3, WIND 360 DEGREES MAGNETIC AT 14. THE ALTIMETER 29.96, CLOUDS STRATUS FRACTUS 4, SNOW 6, REMARKS DRIFTING SNOW, OVER.
	TB 405	OKIE DOCKIE.
	TB 405	WE'LL GIVE YOU A CALL LATER FOR THE LIGHTING OF THE RUNWAY 32 ANY HOW. AND YOUR WIND AGAIN?
	T/R	OKAY, WIND PRESENTLY 340 DEGREES MAGNETIC AT 9 AND IF YOU HAVE TIME NOW WILL YOU GIVE ME A RADIO CHECK AT 121.5.
01:18	TB 405	WILL DO, TERRACE RADIO THUNDERBIRD 405, 121.5, 12345.
	T/R	405 TERRACE LOUD AND CLEAR HOW ME 12345.
	TB 405	LOUD AND CLEAR.
	T/R	THANK YOU, AND 405, TERRACE WE'LL PUT THE LIGHTS ON STRENGTH 5 FOR RUNWAY 32.
	TB 405	YEAH, MAYBE I COULD GET YOU TO TURN THEM ON NOW AND WHEN WE'RE OVERHEAD WE'LL BE ABLE TO SEE.
	T/R	OKAY, ROGER THEY ARE ON NOW, STRENGTH 5, STROBES ALSO.
	TB 405	AND THE APPROACH?
	T/R	ROGER EVERYTHING IS ON 5.
	TB 405	OKAY YOU CAN TURN THE METER ON THEN.
	TB 405	TERRACE OPERATIONS, THUNDERBIRD 405.
	CP/A	405 TERRACE OPS.
	TB 405	WE'LL BE OVERHEAD THERE IN ABOUT 5 MINUTES, WE'RE PLANNING AN APPROACH, ON THE RAMP AT AROUND 34 OR 35.
01:19	CP/A	O.K. COPY THAT, 35 AND WE HAVE 3 PEOPLE FOR YOU.

TIME      SOURCE  
TB 405      OKIE DOKE.

01:20  
01:21  
01:22

T/R      405 THE LAST JBI WERE ISSUED AT 2250 GREENWICH WERE .45  
AND THEY WERE DOING SOME PLOWING ON THE RUNWAY SINCE THEN  
BUT NO NEW JBI'S, OVER.

TB 405      CHECK ALL O.K.

T/R      AND THE WIND 350 DEGREES MAGNETIC AT 15 FAVORING RUNWAY 32  
THE KOLLISMAN ALTIMETER IS NOW 29.96 AND NO REPORT LOCAL  
TRAFFIC.

01:23

01:27

TB 405      TERRACE RADIO 405, HAVE YOU GOT A GREEN LIGHT ON YOUR LOCALIZER?

T/R      405 TERRACE, ROGER WE HAVE A GREEN.

TB 405      THANK YOU.

T/R      ARE YOU NOT PICKING IT UP?

TB 405      YEAH IT'S OKAY NOW.

T/R      OKAY, ROGER, WIND 340<sup>0</sup> MAGNETIC AT 13 FAVORING 32 AND KOLLISMAN  
STILL 2992, NO REPORTED LOCAL TRAFFIC.

01:28

TB 405      405

01:29  
01:30  
01:31

TB 405      THUNDERBIRD 405 BY THE RANGE INBOUND.

T/R      THUNDERBIRD 405 ROGER CHECK YOU BY THE RANGE INBOUND, WIND 360  
DEGREES MAGNETIC AT 16.

TB 405      ROGER OR 405 (NOT CLEAR)

01:32  
01:33  
01:34  
01:35  
01:36  
01:37  
01:38

T/R      405 TERRACE SAY YOUR POSITION NOW.