

DEPARTMENT OF TRANSPORT
INTRA-DEPARTMENTAL CORRESPONDENCE

8-57

Toronto 5, Ontario, December 11, 1959.

PLACE

DATE

YOUR LETTER DATED

May 13, 1959

YOUR FILE

5002-100

5002-4

5004-1-181

OUR FILE

TRANSPORT - RECORDS - 0

SUBJECT

SUMMARIES OF AIRCRAFT ACCIDENT REPORTS

DEC 15 AM.

File 5002-100

40692

MEMORANDUM: Director of Civil Aviation, Department of Transport,
#3 Temporary Building,
Wellington Street,
Ottawa, Ontario.

1. Reference is to your letter of May 13, 1959 of file numbers, enclosing Volumes 1 and 2 of file 5002-100, and a copy of R.C.A.F. Search and Rescue Report on Piper Apache NL44P.
2. The documents are now being returned, and I wish to thank you very much for the trouble which you took in forwarding this material.

Encls.

P. D. McTaggart-Cowan
P. D. McTaggart-Cowan,
Director.

COPY ON

5002-100

5004-1-181

ENTERED
DEC 15 1959

000394

WVG/MD


OTTAWA, Ontario, May 13th, 1959.

5002-7 5002-100
5004-1-181

REGISTERED

Dr. Andrew Thomson,
Director, Meteorological Branch,
Department of Transport,
315 Bloor Street, West,
Toronto 5, Ontario.

1. In reply to your memorandum of 27th April, 1959, to the Director, Civil Aviation concerning four Summary Reports on aircraft accidents, enclosed are three copies of the Summary Report on the Pacific Western Airlines' accident of 19th October, 1953.
2. Summary Reports have not been issued on the Canadian Pacific Air Lines' accident of 20th December, 1942, or on the presumed accident to Piper Apache NL444P of 6th November, 1958. However, we have enclosed file 5002-100, Volumes 1 and 2 on the Canadian Pacific Air Lines' accident and a copy the R.C.A.F., search and rescue report on Piper Apache NL444P, which may contain the information you require. It would be appreciated if the files and report could be returned to Records in Ottawa as soon as possible.
3. The accident which occurred to R.C.A.F., Dakota VC985 on 28th January, 1953, was not investigated by this Department as the aircraft was owned by the R.C.A.F., and information is therefore not readily available. However, we will ask the R.C.A.F., for such information as you may require if you will forward details to us.


Director of Civil Aviation.

Encls.

000395



5002-4

DEPARTMENT OF TRANSPORT
INTRA-DEPARTMENTAL CORRESPONDENCE

Toronto 5, Ontario, April 27, 1959.

PLACE

DATE

1-56

YOUR LETTER DATED

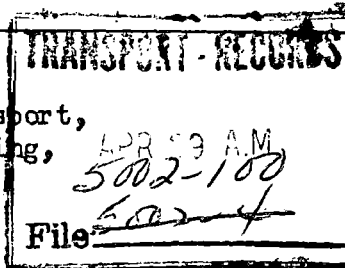
YOUR FILE

OUR FILE

5002-0

SUBJECT

SUMMARIES OF AIRCRAFT ACCIDENT REPORTS



MEMORANDUM: Director of Civil Aviation, Department of Transport,
#3 Temporary Building,
Wellington Street,
Ottawa, Ontario.

1. A research project is underway which involves a study of certain aircraft accident reports. Our files are missing reports on the following accidents:

4193

<u>Flight</u>	<u>Date</u>	<u>Route</u>	<u>Approximate Time of Crash</u>
Canadian Pacific Airlines Flight	20 December 1942	Prince George - Vancouver	Unknown
RCAF Dakota Flight VC 985	28 January 1953	Vancouver - Dog Creek - Puntzi Lake	2100Z (Near Hope B.C.)
Pacific Western Airlines Flight	19 October 1953	Pemberton - Vancouver	2330Z (Garibaldi)
Piper Apache N1444F	6 November 1953	Calgary - Kamloops	2300Z

2. I would be grateful if, at your earliest convenience, you could kindly forward to me copies of the above reports.

Andrew Thomson,
Director.



5004-1-181
5002-100

2
8-57

DEPARTMENT OF TRANSPORT
INTRA-DEPARTMENTAL CORRESPONDENCE

Toronto 5, Ontario, December 11, 1959.
PLACE DATE

YOUR LETTER DATED May 13, 1959	YOUR FILE 5002-100 5002-1-5004-1-181	OUR FILE 5002-100 5004-1-181
SUBJECT SUMMARIES OF AIRCRAFT ACCIDENT REPORTS		

DEC 15 A.M.
File 5002-100 40692

MEMORANDUM: Director of Civil Aviation, Department of Transport,
#3 Temporary Building,
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Ottawa, Ontario.

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- The documents are now being returned, and I wish to thank you very much for the trouble which you took in forwarding this material.

Encls.

P. D. McTaggart-Cowan
for P. D. McTaggart-Cowan,
Director.

COPIES ON
5002-100
5004-1-181

REMOVED
OF 1959
1-1-181

000397

In pursuance of the powers vested in me under the Air Regulations, 1938, I, the Honourable Clarence Decatur Howe, Minister, do hereby appoint T.M. Shields, District Inspector of Air Regulations, Winnipeg, President; J.R.K. Main, Inspector of Airways, Ottawa, Member; and K.F. Saunders, Acting District Inspector, Air Regulations, Edmonton, Member, of a Board of Enquiry for the purpose of investigating the circumstances under which aircraft CF-CPD failed to arrive at its destination - Vancouver - on the night of December 20th, 1942.

Dated at Ottawa this 22nd day of December, 1942.

MINISTER

1. REPORT

Conduct of Investigation.
Narrative-Description of Flight Covering Known Facts.
General Description of Route and Operations.
Summary of Evidence.
Findings.
Recommendations.

2. WITNESSES

1. E. C. F. Williams, 1984 W. 6th Avenue, Vancouver,--employed as Radio Operator by C. P. A., in Vancouver. 1
2. R. N. Raine 8233 Hudson St., Vancouver,--Radio Technician employed by C. P. A., in Vancouver. 5
3. William Andrew Boyd, 1326 East 24th Ave., Vancouver,--employed as Radio Operator, in Vancouver, by the Department of Transport. 7
4. J. H. McKenzie, 2033 W. 58th Avenue, Vancouver employed by the Department of Transport as Sr. Traffic Control Officer, Vancouver Airport. 9
5. T. S. Finnie, 8362 E. Boulevard, Vancouver,--employed by C. P. A., and in charge of Vancouver maintenance base at the seaplane hangar. 10
6. George C. Wilson, 2599 W. 34th Ave., Vancouver, --employed as Chief Engineer with C. P. A. 14
7. Walter E. Gilbert, 7866 Hudson St., Vancouver, --Senior Officer of the Company in Vancouver district. 16
8. C. G. Ballentine, 1760 W. 60th Ave., Vancouver, --employed as Captain by C. P. A. 20
9. H. Hollick-Kenyon, 10016 - 146th St., Edmonton, --Operations Supervisor, Western District, C. P. A. 26
10. W. J. Brady, 6992 Angus Drive, Vancouver, Captain on T. C. A. Trip 3 on December 19. 34
11. Ben McGrath, Rosedale, B. C. 35
12. Spr. W. D. Cole, R. C. E., Vedder Crossing, B. C. 36
13. Frederick William Whitwick, Chilliwack, B. C. 37
14. Spr. H. O. Beck, R. C. E., Vedder Crossing, B. C. 38
15. Capt. A. Rankin, 6155 McKenzie St., Vancouver, --Captain on T. C. A. Trip 4, December 20. 39
16. H. W. Edwards, 8408 Hudson St., Vancouver, --Department of Transport Meteorologist. 40
17. H. D. Cameron, 1356 W. 12th Avenue, Vancouver,--employed with Department of Transport Meteorological Division. 44
18. A. R. McCauley, 7837 Angus Ave., Vancouver,--Meteorologist in charge Vancouver Station. 45
19. Gus Armstrong, Chief Operator, Canadian Pacific Air Lines Limited, Fort St. John, B. C. 47
20. Thomas McLaughlin, 12123-122nd Street, Edmonton, --employed as Crew Chief for C. P. A., at Edmonton. 49
21. Norman Edmund Dennison, 9928-107th Street, Edmonton, --Superintendent of Maintenance, Canadian Pacific Air Lines, Edmonton. 50
22. H. G. Hardham, 12142-122nd Street, Edmonton, Alberta. 52

3. EXHIBITS

- Flight Plan- Trip 4-17, Aircraft Lockheed 14 H2 CF-CPD, Dec. 20/42
- Exhibit A Message Reports as received by Canadian Pacific Air Lines, Vancouver, B.C., pertaining to trip 4-17
- Exhibit B Actual Radio Messages received by Canadian Pacific Air Lines radio operator, Vancouver, B.C., pertaining to Trip 4-17, Dec. 20 1942

3. EXHIBITS

Exhibit C Statement of weather reports from 12:30 hrs. to 18:30 hrs. December 20th, 1942, received by Canadian Pacific Air Lines Vancouver from weather office, Vancouver.

Exhibit D Report of message as received by Witness R. Raine, at Vancouver, B. C. Pertaining to Trip 4-17, December 20th, 1942.

Exhibit E Extracts from Vancouver Radio Range Station Log, pertaining to Canadian Pacific Air Lines Trips 4-16 and 4-17, December 20th, 1942.

Exhibit F Aircraft and Engine and Radio Inspection Report Carried out at Vancouver, December 19th and 20th, 1942.

Exhibit G C. G. Ballentine's Report of Trip 4-16 of December 20th, Prince George to Vancouver, Via Princeton.

Exhibit H

Exhibit I Department of Transport Meteorological Division, Vancouver, B. C. Weather Map. Dec. 20, 1942.

Exhibit J Special Weather, Vancouver - Princeton, from 12:30 hrs to 18:30 hrs. Dec. 20, 1942.

Exhibit K Weather Reports received at Fort St. John from Vancouver and Quesnell, 13:30 hrs - 19:30 hrs.

Exhibit L Aircraft and Engine Inspection Reports, December 9th and December 12th, covering Nos. 1, 3 and 5 checks.

4. APPENDICES

A. Discussion.

B. Map.

C. Statement filed on behalf of Canadian Pacific Airlines Ltd. in re aircraft Lockheed 14 H2 CF-CPD

PRELIMINARY REPORT OF BOARD OF
ENQUIRY

Appointed to investigate the circumstances attending the accident (non-appearance) of Lockheed aircraft CF-CPD, missing on December 20th, 1942. This aircraft having now (January 4th, 1943) been missing for a period of over two weeks, lost in a mountainous country in the dead of winter, the Board has assumed that the aircraft is wholly or partly destroyed and that the entire company of ten passengers and three crew are dead.

CONDUCT OF INVESTIGATION

Aircraft CF-CPD was officially reported overdue at about 7 P.M. on the evening of December 20th to an official of the Department by an official of C.P.A. On the morning of December 21st, the Minister appointed a Board consisting of Inspector T.M. Shields of Winnipeg, Assistant Inspector K.F. Saunders of Edmonton, and Inspector K. R. Main, with instructions to investigate and report upon the accident, (non-appearance of the aircraft constitutes an accident). Two members of the Board immediately proceeded to Vancouver, arriving there on the afternoon of December 22nd. On December 23rd the Board participated in the search for the missing aircraft. On December 24th inhabitants of the Chilliwack, B.C. area were questioned with indecisive results regarding the reported appearance or hearing of an aircraft on the afternoon of December 20th. The search from the air continued on December 25th with a member of the Board participating. On December 26th, 27th and 28th, an open hearing was conducted in which evidence was taken relating to the reported movements and general conduct of the flight of Lockheed CF-CPD. One member of the Board then proceeded to Fort St. John where a number of witnesses were questioned and documents examined. The Board then resumed its sitting in Edmonton on

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January 2nd, 1943, where further evidence was taken. At this time also a general discussion was conducted with officials of C.P.A., the Senior officer of the Meteor Branch in Edmonton, and representatives of the Airline Pilots Association, regarding ways and means of assuring safe flying operations on the Fort St. John-Vancouver route.

The Board has every reason to believe that a diligent search has been made for the missing aircraft during the two weeks that it has been missing; since no sign of it has been found, it is assumed that the aircraft may not be located for a very long time or that it may never be found. All the available documentary evidence having been obtained, and all known material and expert witnesses having been heard and questioned, the Board then adjourned sine die to prepare this preliminary report.

NARRATIVE DESCRIPTION OF FLIGHT COVERING
KNOWN FACTS

Lockheed 14HI aircraft CF-CPD was dispatched as Trip No. 4-17 out of Fort St. John bound for Vancouver at 14:40 hours, on December 20th, 1942. The flight plan called for intermittent instrument flying between Fort St. John and Prince George and contact operation between Prince George and Vancouver. Six passengers and 241 lbs. of baggage were enplaned at Fort St. John. At Prince George the plane landed at 15:05 hours. Four passengers and 115 lbs. of baggage and 3 lbs. express were enplaned at this point. The records show that the aircraft left Prince George with 355 gallons of gas. It took-off from Prince George at 15:21 hours. The distance between Prince George and Vancouver on the direct route is approximately 320 miles; and the pilot gave an E.T.A. at Vancouver of 2 hrs. 25 mins. The pilot reported at Quesnel at 15:50 hrs; Stum Lake at 16:20 hrs; Bridge River at 16:50 hrs; Gunn Lake at 16:50 hrs; and reported being on the North leg of the Sidney range at 17:27 hrs. There appears to have been interference

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at that time and the full text of this message was not received. At 1734 hours he reported on the North leg of the Vancouver range, the text of the message being: "Trip 4-17 North Leg VR (Vancouver) Range 12000 ETA VR 1745 letting down on east and west leg". The evidence shows that approval was given for a let-down on the E-W leg of Vancouver Range and that the pilot acknowledged receipt of the message. No further message was received from the aircraft until 1805 hours at which time the following message was received: "4 Vancouver Range what is Vancouver ceiling and visibility". C.P.A. radio was the only station hearing this message. The signal at this time is reported to have been decidedly faint and the pilot was advised to try to get through on 3105 K.C. Previous to this the aircraft had been transmitting on C.P.A. company frequency of 5390 Kc.

In view of the fact that the aircraft was already twenty minutes overdue, steps were taken to broadcast on both Company and range frequencies in hopes of obtaining contact. This was continued for the next hour and a half without success. The message at 1805 hrs. was the last received.

The records show that the emergency procedure prepared by C.P.A. to meet a contingency of this sort was put into effect at 1940 hours, 1 hour and 55 minutes beyond the E.T.A. at Vancouver.

GENERAL DESCRIPTION OF ROUTE AND OPERATIONS

The Vancouver-Fort St. John stage of the Y.S.A.T. Ltd. operations is conducted under authority of Licence C-57 issued by the Department. The licence as originally issued authorizes daylight contact operations only; but an endorsement, dated July 28th, 1941, states:

"This letter will be your authority to permit your aircraft to fly from Williams Lake to Vancouver, B.C., following the north leg of the Princeton Range to Princeton, providing that

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Princeton is reached not later than 30 minutes after sunset, and providing further that:-- the weather at Princeton shows scattered clouds or better; that the ceiling at both Vancouver and Seattle is not less than 5000 feet, with a visibility of not less than six miles; that no icing conditions are reported, and that the weather is stable along this entire section of the route.

It must be understood that night flying is not to be carried out as a regular practice, and that a night flight must not be undertaken if it can be avoided."

Limited night flying is also permitted in and out of Fort St. John; and this implies, although it is nowhere stated, approval to operate under instrument flying conditions on those portions of the route that are properly lighted, and adequately equipped with airports and ranges.

This licence as stated therein provides for the operation of a "reasonably regular" schedule. This, to distinguish it from first-class airlines operations that are expected to maintain a percentage of schedules of 95% or better. In order to maintain a high percentage of schedules it is necessary to have:

- (a) Adequate flying equipment.
- (b) Highly skilled and trained personnel.
- (c) A reliable and smooth working communication system.
- (d) Adequate aids to navigation, i.e. radio ranges, et cetera.
- (e) Airports of a type suited to the flying equipment and the nature of the service, i.e. lighted for night flying and provided with winter treatment of runways for all year flying on wheels and,
- (f) A closely integrated Company organization.

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The Y.S.A.T. Ltd. has been responsible for pioneering this route and has necessarily had to conduct its operations with considerably less than the requirements given above. It is now in the process of transition from what is commonly known as a "Bush service" to a first class airline service. Its flying equipment, i.e. Lockheed 14's and Lodestars, is adequate for first class operation. Its flying personnel appears to be good; and a determined and apparently reasonably successful effort is being made to train them in instrument operations and airline procedure.

The airports at Fort St. John and Vancouver are adequate; and it is anticipated that a new first class airport will be in use at Prince George in the near future. Between Prince George and the Trans-Continental Airways System from Lethbridge and Vancouver, there are fields at Williams Lake and Kamloops that can be used in emergency; and in addition a first class airport is being constructed at Dog Creek. When this latter airport is completed this route can be regarded as being provided with the necessary minimum of airports.

There are no radio ranges between Prince George and Princeton, a distance of approximately 315 miles. This is considerably below the minimum standard set for a first class airline operation which in Canada requires the installation of a range at approximately over normal terrain and at closer intervals as may be found necessary in mountain terrain. The terrain between Prince George and Princeton can best be described as a rolling plateau with a mean elevation of 3000' to 5000'. It is on the whole dry; and is only lightly timbered, with occasional patches of prairie interspersed. The weather conditions in this area are reported to be quite favourable to flying.

On the so-called "direct route" which departs from this plateau in the neighborhood of Dog Creek, the country is exceedingly rough and mountainous between that point and the head of Howe Sound and there are no landing fields in this area.

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The communications between Vancouver and Fort St. John, or Prince George, are not good. The following systems are in use:

- (a) Teletype from Vancouver to Edmonton and long wave by Department of Transport equipment from Edmonton to Fort St. John or Prince George.
- (b) Commercial telegraph or telephone to Prince George; these systems being somewhat slow for the transmission of flight or weather reports.
- (c) Alberta Government Telephone between Edmonton and Fort St. John. The traffic is very heavy on this line and rapid communication cannot be depended upon.
- (d) Short wave, i.e. C.P.A. 5390 Kc between Fort St. John or Prince George and Vancouver. C.P.A. has stations at Williams Lake and Kamloops. From these, messages from the two northern points may be relayed to or from Vancouver where necessary. Because of the military situation, weather reports transmitted by radio must be in code, which entails considerable loss of time in coding and decoding messages, and restricts the form of message to a few simple observations.

From the above it will be seen that the company is considerably hampered in its attempt to operate a first class airline service through lack of airports, aids to navigation and adequate communication system. The evidence also shows that Company organization is not integrated to a degree necessary for successful operation of a first class airline service.

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SUMMARY OF EVIDENCE

The evidence shows that:

- (a) Aircraft CF-CFD was properly licensed and certificated for operation over this route. It carried an adequate amount of fuel. Its load was well within the limit set by the C of A and it was safely distributed. It carried a full complement of navigation and other instruments and carried duplicate radio equipment and a third emergency receiving set operated on dry cell batteries.
- (b) The pilot, Captain E. Kubicek had 5439 hours of flying experience including 677 hours on Lockheed 14-H2 and 517 hours on this particular route. He held Public Transport Pilot's Certificate No. 162 in good standing. He had received some training under the hood flying the Vancouver range. There appears to be no reason to doubt that he was familiar with correct range procedure at that point and that he was competent in handling an aircraft on an instrument let-down onto the Vancouver airport. He was last checked out by Herbert Hollick-Kenyon, Operations Supervisor, Western Division, C.P.A.L., on December 14th, 1942, and rated as "good" which is the highest rating given by the Company. He had been medically examined on August 20, 1942 and found to be medically fit.
- The Co-pilot, First Officer, W. Holland, had 5648 hours solo flying experience. He had flown ⁴⁹ hours over this route as co-pilot

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or First Officer. He was the holder of Public Transport Licence No. 81 in good standing, authorizing him to fly this type of aircraft. He had been medically examined on October 20, 1942 and found medically fit.

The stewardess, Miss Edna Young was medically examined and was found physically fit.

(c) This flight was planned entirely as a daylight operation flown contact between Prince George and Vancouver. The evidence shows that the airports along the entire route and at the terminals, were fit for this type of operation. The radio equipment, i.e. the ranges, were functioning normally and in an entirely satisfactory manner. The weather between Prince George and the vicinity of Princeton was clear and fit for contact flying. The evidence shows however, that an occluded front had moved in from the Pacific and was at that time, i.e. between 2 P.M. and 5 P.M., somewhere between the Coast and Eastern slope of the Cascades. There is strong evidence to show that on the West side of the Cascade Mountains on the route which the pilot was following between Bridge River and Squamish at the head of Howe Sound, the area was heavily, if not entirely overcast, with clouds rising to a height of 18,000' or more, and with indications of considerable turbulence and the probability of ice. There is nothing to show that the pilot received a report telling him that a front had moved into this area nor does it appear that the

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pilot asked for a weather report, although the evidence of one witness shows that he invariably requested such information, when approaching Vancouver, although the cloud condition ahead of him must have been apparent since it was observed by two other pilots in the area at approximately the same time. The records also show that wind velocities between 8000' and 12000' were from 50 to 60 miles an hour from the West to South-West, but it is reasonable to suppose that the pilot was aware of this fact.

- (d) At 1735 hours the pilot gave an E.T.A. presumably on the range of 1745 hours, i.e. he assumed that he was ten minutes out at that time. He had reported his altitude as 12000'. Had he been correct in his assumption, and had the flight proceeded normally he should have been at the block in approximately thirty minutes or less. The fact that he called for a weather report half an hour later, i.e. at 1805 hours, indicates either that he had not fixed his position correctly at 1745 or that he had become lost in the interval. It is possible that he depended for a fix on the intersection of the Vancouver and Sidney Island Range. He knew the country around Vancouver very well and it is not reasonable to suppose that he would have been lost had he been flying contact. It must therefore be assumed that he was not flying contact and that he miscalculated his position while flying on instruments either in clouds or over an under-cast. It hardly needs to be stated that a miscalculation of this nature in an aircraft flying

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at between 150 and 200 miles an hour in the vicinity of Vancouver has a high probability of ending in disaster.

FINDINGS

The Board finds that Lockheed aircraft CF-CPD, carrying ten passengers and a crew of three, said aircraft being the property of Yukon Southern Air Transport Limited (Canadian Pacific Air Lines Limited), failed to reach its destination at Vancouver on December 20th, 1942, and has not been seen or heard of since that time. The aircraft, having been lost for a period of over two weeks in a mountainous country in the middle of winter, the Board assumes that the aircraft is partly or wholly destroyed and that the occupants are dead.

The Board finds evidence which indicates that the pilot lost contact with the ground and miscalculated his position when in the vicinity of the Vancouver airport. There is, of course, no evidence to show conclusively that the accident was caused by an error in navigation. The evidence does show, however, that a high percentage of schedules cannot be maintained on this route with a reasonable degree of safety, with the facilities available.

The Board further finds that the transmission of weather reports is not as quick or thorough as could be desired, due to limited land-line systems of communication, which makes it necessary to resort to the use of radio messages, which must be sent in code.

There is also evidence that company organization is not functioning smoothly, due, in part at least, to limited communication facilities. It also finds that the training of pilots in instrument work and airline procedure is being done

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largely in spare time and is therefore not as systematic as it should be.

The Board finds that there is a rather disturbing tendency on the part of the company's pilots, senior and junior alike, to disregard or belittle official weather reports.

The evidence shows that, due apparently to laxity, no emergency rations or equipment were carried in the aircraft.

RECOMMENDATIONS

The Board therefore recommends that:

- (a) Immediate steps be taken to install a radio range at, or in the vicinity, of Dog Creek.
- (b) That the attention of the Company be directed to the faulty system of communication and that the Company and the Department of Transport, and where necessary, the British Columbia Provincial Government, co-operate in improving same.
- (c) That the weather code be examined with a view to extending it to cover additional information.
- (d) That steps be taken to authorize pilots to call for weather reports in the clear when an emergency may be reasonably anticipated.
- (e) That pilots be encouraged to report weather conditions observed on route while flying, with the Meteos staff on the ground after the termination of the flight.
- (f) That the Company be encouraged to conduct a systematic course in instrument training and air-line procedure for its pilots. It now appears that this is merely done in spare time. It is

- 12 -

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felt that the flight personnel should be trained in instrument flying to the point where contact operations would be undertaken only under unusual circumstances. The company should discourage its pilots from flying the direct route between Prince George and Vancouver, since there are no aids to navigation and no landing fields on this route. At present, these men fly contact, by preference, and only take to the use of instruments in emergency. The highest degree of efficiency cannot be obtained while this outlook prevails.

- (g) That the company be encouraged to proceed toward that type of organization that is necessary in a first class airline company. The Board has reference to those numerous instances of lack of coordination by the officials that appeared during the course of the investigation. Thorough coordination presupposes, of course, an adequate communication system between different points.
- (h) That weather be given in the clear from the Control Tower, on request, on 278 Kc.



(T. M. Shields)
District Inspector,
Air Regulations.

Chairman.

(K. E. Main)
Inspector of Airways

Member.



(K. F. Saunders)
Assistant Inspector,
Air Regulations

Member.

18

WITNESSES

1. E. C. F. Williams, 1984 W. 6th Avenue, Vancouver,--employed as Radio Operator by C. P. A., in Vancouver. 1
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22. H. G. Hardham, 12142-122nd Street, Edmonton, Alberta 52

19

E.C.F. WILLIAMS, 1984 W. 6th Avenue, Vancouver, B.C.,
having been duly sworn, states:

I am employed as radio operator by Canadian Pacific
Air Lines, holding Amateur Licence No. 5.603.

Q.#1 - How long have you held that licence?

A. - Since 1940.

Q.#2 - How long have you been employed by Canadian Pacific Air
Lines?

A. - About a year and a half at Edmonton and Calgary, and
about a month at Vancouver.

Q.#3 - Were you on duty the evening of Dec. 20th?

A. - Yes.

Q.#4 - Have you a record of messages sent and received by C.P.A.
Trip 17-4?

A. - Yes.

Q.#5 - What replies were sent to these messages?

A. - We check each PX, put our initials down, then put it on
paper.

Q.#6 - What frequencies were you regarding?

A. - 5390 and 5345. Kubicek was on 5390 Kcs.

Q.#7 - What were Kubicek's messages so far as you recall?

A. - The record here covers it pretty well.

Q.#8 - Did you get any previous message saying he was on Sidney
Range?

A. - I don't know. I was in the room not paying particular
attention to PX's, but R. Raine ought to be able to
give more information.

Q.#9 - To the best of your knowledge, how much fuel, gas and
oil did Trip 4-17 take on at Prince George on the 20th.

A. - I couldn't say. He had 355 gals. when he left Prince
George and the capacity was 536 gals.

Q.#10- Do you keep a complete log of messages sent and received?

A. - Yes.

Q.#11- Have you any reason to believe that Kubicek actually
was sent a record of weather?

A. - I haven't any definite proof that other operators gave
him the weather.

Q.#12- Is this simply a statement of weather over the route or
is it something the pilot had?

A. - As far as I know, it is just the weather. They were made

First Witness Page - 2 -

E.C.F. Williams

up in our office, taken from Department of Transport meteorological reports for Vancouver and Prince George. Others are received direct from Ft. St. John. The Department of Transport observer there makes up weather reports. At Kamloops and Williams Lake we have our own observers.

Vancouver, B.C.
Dec. 26th, 1942

Mr. Williams, on being recalled, states:

- Q. #13 - Some time between 1200 and 1300 hrs. on the afternoon of the 20th December, did you have a conversation with some one in the Meteorology Building, presumably the forecaster?
- A. - I don't know who he was. I telephoned that office as Ballentine was asking whether he should go by Princeton. The person I talked to said there was a high overcast, about 15,000 ft., with icing conditions. Of course I transmitted that back to Ballentine. I didn't give it to him in code. He checked O.K. he would come in that way.
- Q. #14 - Would you have a copy?
- A. - It was oral. I have no written record but Ballentine will back me up.
- Q. #15 - Having transmitted that information to Mr. Ballentine at his request, did you take any steps to transmit the same information to Trip 4-17?
- A. - At the time I was rather busy and it slipped my mind. The flight plan of Kubicek called for contact.
- Q. #16 - You say in transmitting the message you advised Ballentine to come in by Princeton. You were then acting in the capacity of despatcher?
- A. - Yes.
- Q. #17 - Did it occur to you that that same message might be of interest to Kubicek?
- A. - No, it didn't. At the time I was busy.
- Q. #18 - It didn't occur to you that it might be wise to telephone Mr. Gilbert, as there were no other despatchers, and get his opinion?
- A. - No.
- Q. #19 - Was there any one else here to who you might have broached the question?
- A. - Raine was here. He took over at 1630. He is the technician. There is no senior operator here just two of us, no special rank.

First Witness

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v

E.C.F. Williams

Q.#20 - Did you discuss it with Raine or any one else.

A. - No, I didn't.

Q.#21 - Do you remember the time?

A. - It was 1 hr. 10 mins. flying time from Prince George, south of Quesnel.

Q.#22 - I gather the reason you felt Kubicek would not be interested was that Capt. Ballentine was on intermittent instrument and Kubicek on contact?

A. - Yes.

Q.#23 - What was the time?

A. - 1355 hrs.

Q.#24 - What form of message would you expect from a pilot flying under difficulties?

A. - If there was an emergency and he wanted us to know he was in danger of crashing, he would say "May-Day".

Q.#25 - If he was icing up and losing height and wanted weather badly and didn't want to bother about the code, what would you expect?

A. - He would ask for the weather in English.

Q.#26 - If a request for weather was received without reference to whether it should be in code or clear, would you assume the pilot was not experiencing difficulties, or not flying under emergency conditions?

A. - I think a lot depends on the pilot. In my experience in the McKenzie River district, some of the pilots didn't believe in advertising conditions that they were flying in, on account of the public. Other pilots believe in letting you know.

Q.#27 - Would you consider the message received from Kubicek at 1805 indicated he was experiencing a condition of emergency?

A. - I couldn't say, not having been on duty at this time. Judging from the wording of the message, I couldn't say.

Q.#28 - Have you any written instructions or special procedure you should follow should anything unusual develop when despatching a trip or when it is en route?

A. - If we know an aircraft is in difficulty, if one station gets a report he is supposed to broadcast to all stations to stand by. There are supposed to stand by and leave the channel open for any emergency calls.

First Witness

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✓

E.C.F. Williams

Q.#29 - Was that done here?

A. - No, We were all in contact with aircraft up to within half an hour of the time it was reported missing. They were all calling and Mr. Raine did not deem it necessary to elaborate on it.

Q.#30 - Do you know if any request was made for the proper emergency procedure to be put into effect?

A. - Yes. Mr. Raine did this. A message was also sent out on the teletype, as an emergency. Teletype phoned it at 1940.

Vancouver, B.C.
Dec. 27th, 1942.

Mr. Williams, on being recalled, states as follows:

Q.#31 - At the time you sent the message to Capt. Ballentine regarding Vancouver weather, what would be the location of Trip 4-17?

A. - I don't know definitely, but believe he would be a little distance out of Prince George on his way in to Prince George from Fort St. John, and if he was listening on 5390 kcs. he would have received that message.

Q.#32 - During the short time you have been a radio operator at Vancouver Station do you know if Capt. Kubicek made requests for weather information while flying between Fort St. John and Vancouver?

A. - He would not hesitate to ask for information regarding the weather and to my knowledge this is the only occasion when he did not request information concerning weather.

Dec. 29th, 1942.

Second Witness

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RONALD NOEL RAINE, 8233 Hudson St., Vancouver, B.C.,
having been duly sworn, states:

I am employed as radio technician with Canadian Pacific Air Lines, Vancouver. Have been with them for four and a half years. I hold Second-Class Radio Licence No.

Q.#1 - You were on duty the night of December 20th?

A. - I wasn't on duty, but was there.

Q.#2 - Edmonton apparently cleared Kubicek at 1436, someone received message - Williams says he didn't receive it?

A. - I didn't receive that. I didn't receive any until near the end.

Q.#3 - You transmitted message regarding ceiling, weather and visibility to Kubicek. Did he check that?

A. - Yes.

Q.#4 - Did you get message in which Kubicek said he was on the north leg of Sidney Range at 1727 hrs.?

A. - That report was very indefinite. We checked with Williams Lake to get the operator's report on it.

The range got a message from Kubicek at 1805. I coded it up and sent it back at 1807. The C.P.A. operator had heard Kubicek asking for ceiling and visibility. Reception was poor and Range did not get it.

Vancouver, B.C.
December 26th, 1942

R.N. Raine, on being recalled, states:

Q.#5 - What is the procedure with regard to inspection of radio equipment on aircraft?

A. - Every time the aircraft comes in I give the radio our No. 1 Check. I go over receivers and run up on all bands. Fuses and spare antennae are checked. On receiving I listen to the ranges and I also check the radio compass. I check the auxiliary of all frequencies and also on the nose loops. The dry cell is checked on No. 3 check every fifty hours I do that. I checked the radio on December 19th and found it correct.

December 27th, 1942

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Second Witness

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R.N. Raine

R.N. Raine, on being recalled, states:

- Q.#6 - You were on duty and received a message from Kubicek at 1805. We have the wording and are trying to ascertain if possible what was his state of mind- -whether he considered himself an emergency?
- A. - I am afraid not. I knew he was overdue at the time and I wouldn't guarantee who it was, but I think it was Kubicek. I couldn't say whether he seemed excited or not. They talk quite loudly into the mikes and his voice always seemed sort of excited. I wouldn't like to give any opinion at all.
- Q.#7 - You don't use the radio often, do you?
- A. - I used to be sole operator, now I just relieve occasionally.
- Q.#8 - Just how did he speak?
- A. - I am afraid I cannot help you at all.

December 27th, 1942.

Third Witness

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2

WILLIAM ANDREW BOYD, 1326 East 24th Ave., Vancouver, B.C., having been duly sworn, states:

I am employed as Radio Operator, Department of Transport, Vancouver, since the 1st of August, 1942, previously having been employed in this capacity at Princeton for three and a half years--a total of four years.

Q.#1-Will you give the Board an account of messages passed to and from C.P.A. 4-17 on the 20th of December, not appearing on this record.

A. - At 1727 I called C.P.A. 4-17 and he answered me back and said he was on the north leg of Sidney Island Range. I couldn't make out the rest of his conversation very well--he said something about the east leg and I called C.P.A. office and spoke to the operator on duty, asking if he had received the message. C.B.X. said "No", he hadn't--couldn't read it.

Q.#2-Who was the operator.

A. -I believe it was Operator Raine. The time was between 1732 and 1734. I called C.P.A. 4-17 again and this time he said he was on the north leg of the Vancouver Range at 12,000 ft. - E.T.A. Vancouver 1745. He asked if it was O.K. to use the east and west leg for let-down.

Q.#3-Then what did you do?

A. -I had kept a memorandum of our conversation on a piece of paper, so I immediately called back and repeated what he gave me word for word. He checked that and I said "Stand by, I will contact the operator." I called McKenzie, the operator, by inter-phone and told him C.P.A. 17 said it was on the north leg of Vancouver range and wanted to use the east and west leg for a let-down. McKenzie said it was O.K., there was no local traffic, so I again called the trip and gave him just what the operator gave me--that it was O.K. to make a let-down on the east and west leg, no other traffic, except C.P.A. 4. The pilot on C.P.A. 4-17 came back and said O.K.

Q.#4-Did he repeat your message?

A. -He simply said O.K. and said it was Trip 4.

Q.#5-What were the signals like during the next hour?
A. -Signals at this time were very good, little interference; the interference I had had five minutes before had disappeared. He was transmitting on 5390 Kcs. I was talking to him on the range. The time was 1732 to 1734.

Q.#5-What were the signals like during the next hour?

A. -There seemed to be quite a lot of telephone interference--Vancouver was calling Bella Bella lady operator and the B.C. Telephone was breaking in intermittently on 5390 Kcs.

Q.#6-Did you experience any trouble with static?

A. -There was a little static on radio but it was not interfering with reception when it was coming through.

Q.#7-The interference was not so serious as to prevent messages coming through?

A. -Not when I was working. I was on for the rest of the evening. You couldn't hope for any better transmission except for a little

000420

Third Witness

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William Andrew Boyd

static and B.C. Telephone interference. We didn't have to ask for any repeats.

Q.#8- Have you experienced previous difficulty in receiving messages from C.P.A. on 5390 Kcs. due to telephone broadcast interference from the B.C. Radio Telephone System?

A. - I have noticed Vancouver calling Bella Bella occasionally and when I have been standing by on 5390 Kcs. the C.P. operator was calling and I was listening in to see what was going on and sometimes there were two or three things interfering.

Q.#9- Is this the first time you have had really definite interference?

A. - Yes, this is the first time it has broken up transmission.

Q.#10- Have you had complaints from pilots regarding this particular interference?

A. - No.

I submit to the Board a record of messages for the Vancouver Station on December 20th.

Vancouver, B.C.
December 27th, 1942.

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J.H. McKENZIE, 2033 W. 58th Avenue, Vancouver, B.C.,
having been duly sworn, states:

I, J.H. McKenzie, am employed by the Department of
Transport as Sr. Traffic Control Officer, Vancouver Airport,
and am the holder of A.T.C.O. Certificate No. 53.

On the evening of the 20th I was on duty in the
Vancouver Control Tower, listening on 5390 and 3105 kcs.
At 1735 hrs. I heard a call from Capt. Kubicek, Trip 4-17,
giving his altitude as 12,000--estimated Vancouver 1745,
starting descent 1735, asking if he could do his let-down
on the east-west leg.

Q.#1 - Do you recall any reply to that?

A. - Range replied, repeated message.

Q.#2 - After that you heard nothing?

A. - No.

Q.#3 - Had you any conversation with anyone else?

A. - The range phoned me and asked me what traffic there
was before he would give permission for the let-down
on east-west leg and I told him there was nothing
reported. He came back and gave Kubicek permission.

Q.#4 - When is it usual for traffic to get in touch with
tower?

A. - C.P.A. come down north leg - we specify over Bowen
Island or Pt. Grey. The less we can work an aircraft
the better; that gives them plenty of time to go into
their procedure.

Q.#5 - You say C.P.A. frequently comes in over the north
leg and makes a fix over the station on that leg?

A. - In fairly good weather you can generally spot them
and then they do a let-down from there; in bad
weather give position.

Q.#6 - From your experience do they occasionally use the
north leg even if weather conditions are such they
cannot be seen, or do they only use it in other
contact conditions?

A. - I can't remember. I have known them to come in the
east leg.

Q.#7 - What was radio reception like during the period from
1700 to 1900 hrs.?

A. - Reception was good.

Q.#8 - You don't recollect any unusual static conditions?

A. - He came over fairly well. One time I got him he was
quite clear. Where he was I couldn't say--he didn't
make any mention of it.

Vancouver, B.C.
Dec. 27th, 1942

T.S. FINNIE, 8362 E. Boulevard, Vancouver, B.C.,
having been duly sworn, states:

I am the holder of Air Engineer's (a) and (c) Licence No. A-1805, and am employed by Canadian Pacific Air Lines in charge of Vancouver maintenance base at the seaplane hangar. On the night in question (Dec. 19th) we did the maintenance on Lockheed CF-CPD, it being the regular engineer's night off.

The mechanic, two helpers and myself gave the regular routine run-up on Lockheed CF-CPD, from 1600 to 2400 hrs. On the morning of the 20th at 0600 hrs. I had engines run up and checked ship out for operations. Everything was in order.

Q.#1 - What did your check consist of?

A. - Our forms are Nos. 1 to 5. We did No. 2 check. Check on airframe is for appearance of aircraft in general, detailed inspection landing gear, complete inspection floats, operation of float controls, check-out on battery. We always change batteries every night. We give engines routine inspection of engine mount, inspect for nicks in propeller, cracks, general inspection of propeller control cables. Everything called for on routine inspection of this engine was carried out. We check for loose oil lines, etc. Landing, navigation, wheel and position lights for landing gear are checked; we checked propeller de-icing system--that was correct. We changed fuses the previous night after checking everything else. Electric system was checked, fire extinguishers, emergency exit, heating system, wing de-icers, inspected for cracks on surfaces of rudders, inspected rear stabilizers, oxygen supply and looked for wrinkles, cracks, etc. (History of No. 2 Check handed over to Board)

Q.#2 - Were de-icers functioning to their maximum when engine was run up the following morning.

A. - Yes, de-icers were functioning satisfactorily.

Q.#3 - The following morning during the run-up we hand ship over to cleaning crew. They clean the cowlings around engine, after that we instal all the cowlings on the aircraft. It is cleaned ready to go in the morning as soon as we instal newly charged battery.

Q.#4 - Can you identify that battery?

A. - We get new batteries as required from Edmonton. Mr. Wilson will tell you more about that.

Q.#5 - Lockheeds require heavier batteries than Rapides?

A. - Our batteries are numbered R.1, R.2, R.3, L.1, L.2, L.3 in red paint on the sides of the batteries.

Q.#6 - Do you check the propeller?

A. - Propellers were checked under my supervision and found correct.

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Fifth Witness

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T.S. FINNIE.

Q.#7 - As a result of your inspection did you find anything of a suspicious nature in aircraft, propeller or equipment?

A. - No--the only thing was that a blue color appeared on right dump valve outlet for right gas tanks - appearing to be leaking dump valve. Also servo oil leak was observed in #3 compartment. Tail shock leg was leaking. Lockheeds quite commonly have a blue colour around the gas lines all around wing root and must be inspected for blue colour, also inspected where the gas tank intakes extend into the tank. We always look around the rheostat, right rear dump well.

Q.#8 - Are you satisfied aircraft was airworthy, also engines and propeller?

A. - Yes.

Q.#9 - Have you any log books?

A. - Log books at all times are carried with machines, as at times schedules cannot be adhered to and there are stop-overs owing to weather or other reasons. Journey and Aircraft, Engine, Propeller and Flight Report Books are carried on the aircraft?

Q.#10- Those log books are actually on the aircraft then?

A. - Yes.

Q.#11 - You signed them that morning?

A. - Yes.

Q.#12- What time in the morning did you sign aircraft out as being airworthy?

A. - 0730 hrs.

Q.#13 - You didn't mention anything about parachute flares - are these aircraft provided with parachute flares?

A. - Parachute flares are in a part of the ship that cannot readily be inspected except on a No. 4 check. They are operated electrically.

Q.#14 - When did machine last have No. 4 check?

A. - After 200 hrs.

Q.#15 - Had this machine been recently overhauled?

A. - I don't know.

Q.#16 - As a result of your inspection you were satisfied was thoroughly airworthy?

A. - Yes, one doesn't sign out a ship unless it is satisfactory. There was only the spot where I noticed sweating on the dump valve. I told Mr. Wilson about it and he made a note of it to be rectified at Edmonton on the next No. 4 check.

Fifth Witness

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T.S. Finnie

Q.#17 - You inspected all the controls, flying controls, propeller controls but did not inspect floor boards and panels. Did you inspect them for operation only?

A. - I sat up in the cockpit and operated all the switches.

Q.#18 - After that did you check the battery or did you check battery first?

A. - We had changed the battery. The reason we do that is that when a ship comes in at 1830, by the time we are through work it is 2400 hrs. The cabin lights take a lot of power, operating landing lights takes a lot of power; by that time the battery would be drained. We change battery after we get through and the next morning another one is put in.

Q.#19 - Who inspects batteries?

A. - The mechanic on duty with me checks hydraulic rating and operation of battery.

Q.#20 - The radio technician doesn't change batteries?

A. - No, the mechanic does that.

Q.#21 - When do you check for gas and oil?

A. - When we bring it over to the field, there is a dip stick and we fill the tanks up.

Q.#22 - Did you fill CF-CPD up on the 20th?

A. - I can't remember.

Q.#23 - Did you check all electrical equipment after you put the battery in?

A. - Navigation lights, cabin cockpit lights and instrument lights are checked after we put in the new battery.

Q.#24 - Do you know whether radio equipment was checked after you put in new battery?

A. - I don't know.

Q.#25 - Can you tell us when you check emergency exits?

A. - I don't know whether it was myself or someone else who checked them that night. Whoever checks an item out initials the check sheet beside that item.

Q.#26 - What special equipment by way of emergency rations, blankets, axe, matches and so on were carried?

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Fifth Witness

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T.S. FINNIE.

- A. - Blankets were carried but there were no rations, axe or other emergency equipment. On my previous report I had noted that no equipment was on board. I understand it was a company rule that such be carried.
- Q.#27 - Was there a first-aid kit?
- A. - I believe the stewardess had that.
- Q.#28 - Did you check the compartments to be sure there were no emergency rations?
- A. - Yes, all four compartments were checked that night.
- Q.#29 - Were there any rations on the 20th?
- A. - No, it was reported previously and I understood the aircraft was going to Edmonton where they would supply rations and the necessary equipment.

At the request of the Board the witness produced his Air Engineer's Certificate No. A-1805, which was found to be in good standing.

Vancouver, B.C.
Dec. 29th, 1942.

Sixth Witness

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GEORGE C. WILSON, 2599 W. 34th Ave., Vancouver, B.C.
having been duly sworn, states:

I am employed as Chief Engineer with Canadian Pacific Air Lines, and am the holder of (a) and (c) Air Engineer's Certificate No. A-1130.

Q.#1 - Were you here on the 20th?

A. - Yes.

Q.#2 - Did you do any checking on Lockheed CF-CPD?

A. - No, that was all done on the night shift.

Q.#3 - There was a question that arose re emergency rations-- the Air Engineer expressed the opinion there was no emergency equipment?

A. - No, such equipment had been on that machine but after it came back from Edmonton it was reported there were no rations on board, and it was reported to Edmonton. We do not know definitely whether there was any on or not on the day of December 20th.

Q.#4 - Have you any of the log books either on the aircraft or any of the equipment?

A. - None other than the daily sheets.

Q.#5 - Are the engineering staff here kept conversant with the time of an aircraft in relation to overhaul; would you know whether or not this aircraft was due for a check?

A. - This aircraft should have gone to Edmonton around the first part of last week--it had been flown slightly over 201 hrs. since last overhaul. We wired Edmonton advising them the time was up, but in this case the wire had not been sent.

Q.#6 - What latitude do you allow?

A. - The No. 4 check should be made every 200 hrs.--if more time is required we request permission.

Q.#7 - Have you any written instructions regarding repair and maintenance of aircraft?

A. - No, not issued by the company.

Q.#8 - You say that instructions regarding the No. 4 check at 200 hrs. are a matter of hearsay, as far as you are concerned?

A. - Yes.

Q.#9 - What about other types of aircraft?

A. - The No. 2 check is given for anything over 7 hrs.--th
No. 3 every 50 hrs. 000427

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Sixth Witness

Page - 15 -

George C. Wilson

Q.#10 - Have you instructions covering that?

A. - Not written. It is understood verbally.

Q.#11 - What do you recollect regarding the time this aircraft was last overhauled--do you remember its past history at all?

A. - Not particularly--nothing definite. I know the last No. 4 was on the 14th of October, 1942, carried out at Edmonton.

Q.#12 - Have you any information on this machine having been completely overhauled in November?

A. - I believe it was up for renewal of the Certificate of Airworthiness.

Q.#13 - Were the wings taken off?

A. - I don't know.

Q.#14 - Were log books with aircraft whenever you had occasion to check same?

A. - Such records would be in aircraft. Original maintenance sheet is sent to Edmonton each day and a copy kept in log book.

I herewith submit to the Board the airplane and engine inspection report for CF-TCD for December 19th and 20th, and aircraft route inspection sheet.

Q.#15 - What special equipment was carried on the aircraft in the way of blankets, etc.?

A. - There was a blanket for each passenger. Matches would be with ration kit if there was one on. I couldn't say if such was on board or not, I was never on at night.

Q.#16 - What does ration kit consist of?

A. - For Yukon Southern Air Transport I couldn't say. I know what we have of our own.

Vancouver, B.C.
December 27th, 1942.

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WALTER E. GILBERT, 7866 Hudson St., Vancouver, B.C., having been duly sworn, states:

I, W.E. Gilbert, am Senior Officer of the company in Vancouver district, with jurisdiction over operations despatch.

On December 20th the operations were proceeding normally and I had no knowledge of anything untoward until notified by telephone somewhere around 1830 - 1900 hrs. in the evening. I was not in my own home but was contacted at another home and came immediately to the Airport. When I arrived I checked the station and immediately took charge of preliminary efforts to contact Trip. Our first efforts incidentally were to use the long distance telephone to all points where some information might possibly be obtained. We maintain a chart with names and long distance numbers all across the area, so that we may contact ground observers who might have noticed the Trip. We telephoned these numbers according to our best judgment; at the same time we contacted the R.C.A.F. who put an aircraft into the air to see if they could secure any indications on the ground of lights, etc. We had our other Lockheed in Vancouver at that time but it was not serviceable then.

The R.C.A.F. despatched up the valley. Contact was also made with the B.C. Police and they broadcast through their own stations and appealed for any information that might be available. From that time on reports began to roll in and it was simply a matter of co-ordinating them and building up a search programme on the results of this co-ordination. We maintain an active operation despatch office until 12:30 or 1 A.M. then discontinue it until the following morning, and operators co-ordinated any reports that came in. Part was done by radio range and the other by Vancouver operator.

Q.#1 - During your absence, who is responsible for the safe conduct of operations?

A. - I nominate somebody to take my place in my absence from the city, otherwise I am always on call by telephone. The person named may be one of the pilots or not, depending on who is available.

Q.#2 - Who was on duty the night of the 20th?

A. - I was. I have no Assistant Superintendent and if I had one there would be no use for one most of the time. The total operational staff is only four persons including myself. There is a normal despatch staff of two in Vancouver district and when there is a despatcher on duty there is usually an operator on duty. On the night in question the situation was bad, due to the sudden illness of a despatcher, who came down with a high fever and had to go home. He turned his duties over to an operator, who advised Fort St. John of the situation, that being the point where the two trips left from. This meant the trips knew they would have to co-ordinate weather information and get clearances at that end. Fort St. John is not under the jurisdiction of Vancouver district, but is considered part of the main line from Edmonton. It is the other terminal of Route 60 - Vancouver to Fort St. John. The despatch system is really basically

Seventh Witness

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W.E. Gilbert

controlled in Edmonton, the final decisions being obtained in Edmonton on any problems coming up.

The second despatcher in Vancouver district was at the time of the accident in Edmonton on a familiarization trip. When the first despatcher had to go home ill we had no immediate relief, but I do not think this had any bearing on the situation as the operator on duty understood his next move in a case like that, he might have telephoned me and put me on the job. Under the circumstances I think the procedure he followed was O.K.

Q.#3 - Records show the aircraft was despatched from Fort St. John by Edmonton intermittent instrument between Fort St. John and Prince George, contact from Prince George to Vancouver. So far as you are aware, that decision was made without reference to any official in Vancouver.

A. - Both trips 4-16 and 4-17 were aware they would have to co-relate their own information and get clearances in the north - they were definitely made aware of that by Vancouver.

Q.#4 - Vancouver is a terminal point the same as Edmonton, is it not?

A. - Edmonton is our Divisional Headquarters and the heart of our despatch system. Final decision is rendered by Edmonton upon any matters that come up. Vancouver is better aware of weather conditions than Edmonton could be, but for the purposes of company routine, final decision rests at Edmonton.

Q.#5 - Weather conditions being what they were on the afternoon of Dec. 20th, would you have approved of the contact flight on a direct route between Prince George and Vancouver, had the matter been referred to you?

A. - I cannot answer Yes or No. The difficulty of clearing any of these trips is that the procedure would conflict. We have three sets of flight rules in our Manual--Contact, On Top and Instruments. Weather conditions as set forth in this Manual look so complicated it is difficult to know whether you will clear on instruments or contact. To the best of my knowledge I have always preferred to clear on instruments, because then you are completely covered. Contact is difficult to make a decision on in such a wide strip of country. When we have had a trip over in the immediate past and have a definite knowledge of what conditions are like, I feel free to clear a trip contact.

Q.#6 - Do you consider the step taken at Edmonton to clear this flight through on contact without reference to you or one of the despatchers here was justified?

A. - I think it was a normal procedure. The Operator on duty

W.E. Gilbert

in Vancouver who is in fact acting as despatcher in the absence of the other despatcher understands he may object to clearance of any flight into Vancouver if in his judgment the operation would not be safe.

Q.#7 - Do you know at what hour the flight plan in question was received at Vancouver?

A. - I couldn't tell you right now.

Q.#8 - Just for the record, give the Board a brief statement of the qualifications of your despatchers here?

A. - Our two despatchers in Vancouver are our two most senior radio operators. A.M. Craig's experience is in excess of three years with the company and E. Smith's also in excess of three years. Previous to the inauguration of our present despatch system on Route 60 they have been occupied in clearing trips on our local coastal routes such as Vancouver to Zeballos and Port Alice, and it was on such duties they received their basic training in despatch and correlation of weather reports. In other words, since the start of our Victoria run in March, 1939, we have tried to maintain a despatch system to the best of our ability. In addition, both despatchers have been over the route in order to familiarize themselves with the actual terrain and give them a better picture of what the weather reports mean when received. Mr. Craig was in Edmonton on a familiarization trip and Mr. Smith was to have gone at the earliest moment he could be spared. Apart from that, neither has had a special course in despatch and a company course is still being built up. The despatch operation is based on the old Yukon Southern manual, which is rather complicated, but we try to interpret it to the best of our ability.

Q.#9 - What would be your interpretation of the question - "Intermittent Instrument Flight?"

A. - "Intermittent Instrument" operation I would take to mean one in which the aircraft might be called upon to pass through local broken cloud conditions, as opposed to flying into a heavy frontal build-up, or over an unbroken overcast, for a protracted period of time. There are three classifications in our manual-- "Over-Top Flight," "Contact Flight" and Instrument Flight!

Q.#10 - What time is allowed to elapse before an emergency is declared?

A. - Ordinarily if a trip is overdue 30 minutes after a call. We try to call the trip and then check with long distance operators. Emergency procedure would start from that moment and our operators would check with range operator

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W.E. Gilbert

Q.#11 - In this particular instance what time was
emergency declared?

A. - The procedure was already under way when I reached
the Airport about 1900 hrs., 1 hr. 15 mins. after
the trip's E.T.A.

Vancouver, B.C.
Dec. 27th, 1942.

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C.G. BALLENTINE, 1760 W. 60th Ave., Vancouver, B.C., having been duly sworn, states:

I, C.G. Ballentine, am employed as Captain by Canadian Pacific Air Lines, holding Public Transport Pilot's Certificate No. 250, which entitles me to act as pilot of several types of aircraft, including Lockheeds 14H and 1850. My total flying experience on these types is approximately 630 hrs. as Captain and 125 hrs. as First Officer. My total flying experience amounts to 3000 hrs. or more solo and 150 hrs. dual and dual check time.

I left Prince George in charge of Lockheed CF-CPC at 1355 hrs. on Dec. 20th, on a scheduled flight direct to Vancouver. I had flight planned to go via Hope, intercepting the east leg of Vancouver Range at Hope. Some thirty miles south of Prince George I asked Vancouver if they recommended changing my flight plan to direct rather than via Hope. They would not recommend this, so I carried on with my original flight plan.

We had been flying at 8,000 ft. and at Clinton had a cruising altitude of 12,000 ft. to get on top of a layer of broken clouds. Because of sudden winds we changed our flight plan to read via Princeton. Approximately half way between Clinton and Princeton we C.C.A.'d to 14,000 ft. to remain on top of this lower deck. We arrived over Princeton Range at 14,000 ft. at the same time that T.C.A.'s trip, also westbound, arrived there. Returned west on west leg Princeton Range and our despatcher at Vancouver advised that T.C.A. might go to 14,000. As soon as we heard that T.C.A. had commenced ascending, we started our descent. By the time we checked over the marker the T.C.A. trip was still ahead of us so we slowed down and commenced a routine descent on the east leg of Vancouver Range. We broke contact approximately over New Westminster at about 6,000 ft. from there on was contact close to the airport.

Q.#1 - What was total elapsed time?

A. - 3 hrs. 44 mins.

Q.#2 - Were you despatched from Edmonton?

A. - From Ft. St. John. I was given a clearance with a rider at my own discretion.

Q.#3 - How were you despatched --how much on contact and how much on instruments?

A. - A copy of my flight plan will have been sent to Edmonton.

Herewith a report asked for by our District Superintendent, outlining my trip from Prince George to Vancouver on December 20th, officially known as Trip 4-16.

Q.#4 - What significance would you attach to the fact you were despatched via Hope rather than on the direct route?

A. - The weather over the Cascades. The fact it was via Hope rather than via Princeton would indicate it wasn't very bad.

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C.G. Ballentine

Q.#5 - Your report shows you saw some heavy stuff piling up on your right and that led you to ask for weather at Vancouver and further advice as to how trip should be completed?

A. - I would normally ask for Vancouver weather every so often, and their weather had shown fairly consistent improvement since I left Ft. St. John. I simply asked for weather in a routine manner.

Q.#6 - What advice did you receive?

A. - Simply a weather report. At one point I asked for weather direct and they refused to give it.

Q.#7 - Why did they refuse to give it?

A. - They said they didn't like it--better come in direct.

Q.#8 - Is there anything you can add to your report as to the appearance of the weather over the Cascades to your right front, as you came in?

A. - I don't think so. I said the top looked high in my report. I guess without going into it it was probably icing.

Q.#9 - About how often do you follow this route?

A. - Fifty or sixty times altogether.

Q.#10- What route do you usually follow from the southern end?

A. - In summer the direct route is not only shorter, but quite safe by contact method. Hope is our next alternative and Princeton I have used a number of times, but only when I am solid on instruments.

Q.#11- "Intermittent instrument" - what interpretation do you put on that expression?

A. - When going through over broken clouds--instruments three or four minutes, contact three or four minutes. It is rather a vague term.

Q.#12 - What would you call it if you were flying over a solid overcast for half to three-quarters of an hour?

A. - I would call it on top so far as visual navigation was concerned.

Q.#13 - Taking all factors into account, possibility of engine failure, landing fields, etc., what in your opinion is the safest way to fly the southern part of the route--first, when the weather is good contact weather, and secondly when doubtful?

A. - Princeton, Hope and Vancouver are all practically the same distance from Prince George and what we call the direct route down the Squamish Valley, with the exception of perhaps five minutes you can come down almost to sea

Eighth Witness

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C.G. Ballentine

level at contact. I have always considered this route as safe as any of the others, providing I can get down at 3,000, 4,000 or 5,000 ft, assuming it wasn't clouding over.

Q.#14 - Do you ever fly the direct route when conditions are such that it is necessary to make contact over the Vancouver Range in order to get a fix?

A. - Never deliberately. Once or twice I have come over when it was clear; right near Vancouver it was smoky.

Q.#15 - If you were coming in on the north leg do you cut across the quadrant to the east leg?

A. - No. I have come down on two or three occasions when it was overcast here. I didn't know this condition existed.

Q.#16 - How did you get a fix then?

A. - At Garibaldi A.D.F. on Vancouver Station and intercepted the west leg other range receiver on top.

Q.#17 - How would you come down and get a fix over the Range?

A. - I would strike the west leg and turn to the station and from there it again becomes routine let-down as soon as you get a fix over the station.

Q.#18 - You have never flown that route when whole of valley covered with cloud undercast?

A. - I have at times when I started out, got half-way and then found the other half was undercast.

Q.#19 - What would you get a fix on in that case?

A. - I don't think it has ever happened coming this way. When northbound, the southern part of the valley was such that it was good business to go up there.

Q.#20 - Is it assumed when you fly contact into Squamish that it will never be necessary to use north leg as a fix?

A. - I think so.

Q.#21 - Is it correct to say there is no procedure let-down for getting a fix on the range, getting a let-down and using the north leg?

A. - Not as far as I know. Our company procedure makes no allowance for that.

Q.#22 - It has been assumed rightly or wrongly that Kubicek swung east on December 20th to intercept the east (VR) leg. Have you ever followed that procedure?

A. - No.

Q.#23 - Would you consider it good practice?

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C.G. Ballentine

- A. For myself, No. Your track strikes the west leg at right angles whereas by turning out you intercept east leg and not only have much farther to go but intercept it at an angle.
- Q.#24 - Reports from Kubicek show that he did fixes over Bridge River then Gun Lake, then apparently somewhere in the vicinity of Squamish. Is it customary to fly that direct route in that way?
- A. - Gun Lake and Squamish are both on the normal route.
- Q.#25 - Have you ever encountered icing conditions with your aircraft?
- A. - Daily.
- Q.#26 - How do you find the ice affects it?
- A. - It affects the aircraft. I have never landed with a very heavy load on. My assumption that slots are seriously affected comes mostly from Trans Canada Air Lines.
- Q.#27 - Have you ever flown that type with slots sealed up?
- A. - No.
- Q.#28 - You have no reason to believe then that the fact that CF-CPD had the slots open might, in conjunction with icing conditions, have been a contributory factor in the loss of the aircraft?
- A. - No, I haven't enough knowledge of flying with slots closed to answer.
- Q.#29 - Would you go so far as to say that in your opinion the pilot did not use good judgment in flying west of the Cascades on the direct route on December 20th.
- A. - Witness refuses to answer.
- Q.#30 - You asked for advice regarding route you should follow coming into Vancouver and were advised not to use the direct route. Should not this advice also have been given to Kubicek?
- A. - My request was informal and reply was informal and didn't go out as a particular message to me. I was simply advised to adhere to my original flight plan. The reason I asked Vancouver was that the weather from Prince George for some distance south was excellent. I could see clouds over the Cascades but perhaps due to the time of day, there seemed to be a light strip somewhere about mountain top level. I wanted to know what was at the lower end and if I could safely fly contact. That was the reason for my request to Vancouver. Vancouver of course could only answer a question like that by looking out towards the hills and if there were obvious clouds there, or such an overcast they cannot see through it, they are unable to answer my question.

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C.G. Ballentine.

Q.#31 - Is it not possible that Vancouver, instead of looking towards the hills, had a look at the weather map and consulted the meteorologist?

A. - Their answer would incorporate additional knowledge which would be available and which the trip is not in possession of.

Q.#32 - Is it customary to ask for weather and advice as to method of flying a route, informally and get an informal answer?

A. - No.

Q.#33 - Why was your request informal on this day.

A. - I had already made a flight plan, satisfactory both to myself and to Vancouver, and I asked the question without much hope of a determinate answer.

Q.#34 - Nevertheless, the nature of their answer carried no doubt in your mind that it was not safe to fly that route contact?

A. - Yes.

Q.#35 - Under the circumstances, should not that same information have been passed to another aircraft in the air at the same time, flying the same route. If you had been the other fellow and had flown into difficulties without getting this information, when it was available, how would you have felt?

A. - The only reason I would ask Vancouver that question is if it looks like contact from my side--does it also look like contact from their side.

Q.#36 - What would you have done had you been flying the direct route contact, on finding there was a heavy undercast and clouds piled up in front of you when you passed the Cascades?

A. - I would have returned to the other route via Hope.

Q.#37 - In your opinion what additional facilities; i.e.: airports and aids to navigation, will be necessary in order to make it possible to operate this route on schedule with a reasonably high degree of safety?

A. - I think we should have at least two airports with range facilities like Princeton and Hope. Dog Creek Airport if it had a range is about midway, and gives us an alternate where we could make a let-down. Another range could be installed at a place to be decided upon. The two above mentioned ranges, and markers on both east and north legs of Prince George range and markers on the north leg of Princeton, would be helpful. This last marker could be somewhere near Kamloops.

Eighth Witness

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C.G. Ballentine

Q.#38 - What route did you follow from Williams Lake to Princeton in your flight of December 20th?

A. - I think I was probably about 20 miles west of Williams Lake when I passed that point and from thence I went by Dog Creek, from Dog Creek I started to turn one mile towards the east of my original course; from there I followed approximately a straight line to the point where I intercepted the north leg of Princeton Range somewhere near Merritt. From Merritt to Vancouver via Princeton I was on the regular range route.

Q.#39 - In your evidence you state you observed a large build-up of clouds over the Cascades. Approximately where were you when you observed this?

A. - This build-up was evident from the time we left Prince George and from Dog Creek to a point between Hope and Princeton this was immediately to our right the whole way. Between Princeton and Hope we cleared this cloud and carried on on instruments.

Q.#40 - Could you name approximately the location of that build-up?

A. - It seemed to run the length of the Cascades and come just to their eastern edge. It extended northwest and southeast. The river was visible to us underneath the whole time.

Q.#41 - Would it be possible for such a build-up to be so localised that the route over Squamish would be free from the build-up?

A. It is possible.

Q.#42 - Have you ever encountered a condition where the build-up was fairly liberalized?

A. - Yes.

Q.#43 - You said in your evidence that you encountered some ice between Princeton and Vancouver. Approximately how much ice was picked up?

A. - As we were going down, I thought so little of it I didn't pay much attention to it, but somewhere between 13,000 and 10,000 or 11,000 ft. on our way down we got from 1/4" to 1/2".

Q.#44 - Where would you think that would be?

A. - About Chilliwack, I would say. At Hope I was still very high.

Vancouver, B.C.
December 28th, 1942

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H. Hollick-Kenyon, 10016 - 146th St., Edmonton, Alta.
having been duly sworn, states as follows:

I am the holder of Public Transport Pilot's Licence No. 31, and am employed as Operations Supervisor, Western District, Canadian Pacific Air Lines, Ltd. I am responsible for the conduct of main line scheduled operations between Regina, Vancouver and Whitehorse, also for the proper conduct of flight operations, supervision and development of flight techniques, recommendations concerning navigational or airway aids and supervision of pilot training.

I am only interested in the functioning of communications over these lines; should they not be satisfactory each specific instance will be taken up with the Division Superintendent or alternatively with an Officer of the Department of Transport.

Q.#1- The Board at the present time is holding a preliminary investigation into the non-appearance of Lockheed CF-CPD which you reported missing to Inspector Saunders while it was on a scheduled trip known as No. 4-17, from Ft. St. John to Vancouver on December 20th. Can you tell us by whom that trip was despatched?

A. - Not without referring to records. I had no information on that point before I left Edmonton and have not since had opportunity to check any records.

Q.#2- The evidence we have on file shows this trip was despatched on intermittent instrument between Fort St. John and Prince George and contact from Prince George to Vancouver. The evidence also indicates it was despatched from Edmonton. Is it customary to despatch an aircraft from Prince George to Vancouver contact without reference to a despatcher or senior officer of the company in Vancouver.

A. - No.

Q.#3- Have you any reason to believe that Edmonton received the approval of a despatcher or senior official of the company in Vancouver before approval for that despatch was given?

A. - I don't know.

Q.#4- Whose responsibility would it be to ensure that the approval of some official in Vancouver was given before flight was despatched?

A. - It is not necessary that such an approval must be received. The Despatch Office in Edmonton, acting for Operations Supervisor, myself, may give authority. They have authority to clear trips over any part of the route without reference to me. He would be doing it on my responsibility, pursuant to authority given him by me.

Q.#5- Our records show there was no despatcher on duty in Vancouver the afternoon of December 20th. In that case would the Edmonton despatcher make contact with some other official before clearing the trip?

A. - That would depend on circumstances. If weather conditions appeared reasonably normal he would clear the trip, assuming he was asked for clearance and there was no one available here to exercise that authority.

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Ninth Witness

H. Hollick-Kenyon

Q. #6 - Do you consider the Communications System between here and Fort St. John adequate?

A. - Yes, within the limitations of any radio circuit.

Q. #7 - What short-wave radio stations have you in this area?

A. - There are company radio stations at Vancouver, Kamloops and Williams Lake--none at Prince George or Fort St. John, these points depending on Department of Transport facilities.

Q. #8 - Do you feel the weather reporting system is reasonably adequate?

A. - Yes, I believe it is an adequate weather reporting system.

Q. #9 - As in the present instance, a flight is despatched from Fort St. John contact between Prince George and Vancouver, what in a general way are instructions given to a pilot for the completion of his flight should he find it advisable to go on instruments--is the fact that you have approved a flight plan as far as you can go in relation to instructions.

A. - In general practice a flight plan must be adhered to unless a change arises which would necessitate a change, which should be sent to nearest office.

Q. #10 - What route would you expect a pilot to fly contact between Prince George and Vancouver?

A. - Any one of three routes - usually the shortest between Prince George and Vancouver direct via Howe Sound--second, via Williams Lake and Hope--third, via Princeton.

Q. #10 - In the present instance it appears the pilot flew by Williams Lake and Howe Sound?

A. Yes.

Q. #11 - What are his instructions if he finds he is flying overcast when he reaches Vancouver?

A. - No specific instructions--he is expected to go on instruments.

Q. #12 - Have instructions been issued as to just how he must proceed in this matter?

A. - Yes, they have been filed with your Department -- "Let-Down Procedure for Vancouver"

Q. #13 - Then it is the same procedure as used by TransCanada Air Lines?

A. - Yes, issued under date of November 21st, 1941.

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H. Hollick-Kenyon

Q. #14 - If it was found there was a continuous overcast between the upper end of Howe Sound, extending south and east, it would be necessary for him to leave the range and fly in a quadrant until he picked up the east leg again?

A. - The procedure would be to follow the north leg until he reached the radio range, then proceed to make his let-down--the only variation from that would be should there be an undercast, then he might let down from his cruising altitude, remaining above the undercast.

Q. #15 - Is it correct to say that company procedure would require the pilot coming in on the north leg to get a fix over the Vancouver range before proceeding to make a let-down?

A. - Yes.

Q. #16 - In the present instance there is no evidence to show that the pilot did obtain a fix over the Vancouver range?

A. - There is also, on the contrary, no evidence to show he didn't.

Q. #17 - Is it not customary for a pilot to report over the range when he makes a fix on it?

A. - Only when in a control area.

Q. #18 - Is this a ^{new} control area?

A. - Yes.

Q. #19 - The pilot reported on the north leg of the Vancouver range at 1734 with an E.T.A. of 1745. He was at 12,000 ft. Would it have been possible for him to have got a fix over the Vancouver range and go through the established procedure and arrive Vancouver at 1745.

A. - No, the expression "E.T.A." means the time he would get a fix on the Vancouver range.

Q. #20 - The evidence before the Board shows that a message was received from the pilot at 1805 hrs.-- 20 mins. overdue?

A. - He may have reached Vancouver range, as there is nothing to indicate he didn't.

Q. #21 - The company would take what procedure when an aircraft is overdue, and when is it considered overdue?

A. - It is considered overdue within thirty minutes.

Q. #22 - What is the procedure then?

A. - The local Superintendent should be called in at once and if he considers the circumstances warrant it he should call on all available agencies.

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H. Hollick-Kenyon

Q.#23 - Have you an arrangement with the railways and telephone and telegraph systems in cases of emergency?

A. - We have a working arrangement with all agencies including the R.C.A.F., railways, telephone and telegraph companies, whereby they can make a search if necessary.

Q.#24 - Have you any idea what steps were taken in the present instance?

A. - No, you can get that information from the Division Superintendent.

Q.#25 - Is it not probable that an aircraft despatched on contact, using the direct route, would frequently run into conditions under which the pilot would be flying over an overcast covering the whole Vancouver area?

A. - No, not frequently. Even if it is closed in, very often weather conditions to the west of Vancouver are very much better than to the east of Vancouver.

Q.#26 - You are no doubt aware that the north leg of Vancouver range is floating--that we have reason to believe there are a number of multiples on it, and at least one bend. Do you consider that leg satisfactory for obtaining a position for an aircraft flying contact from Williams Lake intending to land at Vancouver?

A. - The use of the north leg of Vancouver range in conjunction with the north leg of Sidney range renders it perfectly safe for operation from Williams Lake to Vancouver; although there are multiples and bends present the north leg of the range is not used until close to the station, when it becomes stabilized.

Q.#27 - Assuming that a pilot comes in on the north leg of Vancouver range and finds turbulent clouds piling up in front of him to a considerable height--say 18,000 to 20,000 ft., what would you expect that pilot to do?

A. - Revise his flight plan and proceed on another route.

Q.#28 - What steps would he take to get into Vancouver.

A. - He should revise his flight plan via Hope or Princeton.

Q.#29 - That would mean he would fly contact until he got to the north Princeton leg?

A. - If he was proceeding via Princeton he would have the alternative of remaining contact and proceeding down the Fraser Valley until he intercepted the east leg of the Vancouver range at Hope.

Q.#30 - To your knowledge, what training did pilots Kubicek and Holland have in instrument flying under the hood?

A. - Capt. Holland has had no training in instrument flying with this company, as it was intended this should follow the preliminary stages of his training as a Captain. Capt. Kubicek has had an extensive training in instrument flight, both in actual practice and under the hood, including let-down practices

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H. Hollick-Kenyon

at Vancouver, Prince George and Fort St. John, and continuation of flight along the airways while hooded. He was last checked on or about December 15th, 1942, when an approach on the north leg was made and an instrument let-down was continued from an altitude of about 9,000 ft. down to about 1,000 ft. His grading on that occasion was good, the highest rating we use.

Q.#31 - Was he competent in working out orientation problems?

A. - Yes, he has familiarized himself with orientation problems of Vancouver range.

Q.#32 - What are the minimum conditions of ceiling and visibility set for your pilots?

A. - Days - ceiling 1,000 ft., visibility 2 miles.

Q.#33 - Has the company issued instructions to pilots when they find they are overdue E.T.A.?

A. - No. It is customary when the E.T.A. is more than five minutes out to have it revised.

Q.#34 - In allocating these two pilots to this operation was consideration given to the temperamental characteristics of both?

A. - Yes, consideration was given to these points and it was discussed individually with each officer before the assignment was made. They had known each other for some time and it was felt the assignment should be completely satisfactory in view of their past friendship.

Q.#35 - What steps do you take to ensure that the load is evenly distributed about the c.g. in loading an aircraft?

A. - Cargo in aircraft is loaded from front to rear, up to the rated cargo capacity of each compartment. This has the effect of placing the c.g. in the proper place. At Vancouver load is distributed with reference to the libroscope.

Q.#36 - Do you weigh the cargo at all stations at all times?

A. - Yes, all cargo placed on aircraft is weighed.

Q.#37 - Is it correct that you assume a weight of 170 lbs. per passenger?

A. - Yes.

Q.#38 - What are the instructions with regard to filling of tanks and use of tanks in regard to load distribution?

A. - We fill the right rear first, then the left front, the then left rear, then right front, using them in reverse order. We use the same methods as T.C.A.

Q.#39 - What radio equipment is carried on aircraft?

A. - Bendix 100 W. transmitter, radio compass and range receiver, Bendix communication receiver, Bendix auxiliary all-wave receiver, and Marconi

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H. Hollick-Kenyon

receiver. Auxiliary receiver may be used in conjunction with manually operated unit.

Q.#40 - What steps are taken to ensure the safe operation of radio.

A. - Receivers and transmitters are checked for operation before take-off from terminal by pilot. In Vancouver they are checked by radio technicians before aircraft is passed for despatch and re-checked by pilot before departure.

Q.#41 - Is any record kept of that check?

A. - Yes, log books are kept for radio equipment.

Q.#42 - You are probably aware that as the outcome of a meeting with a considerable number of operators, certain general specifications were drawn up for certain types of routes. Specifications given in the Radio Licence of Route C-57 are based on the outcome of these discussions with operators. A certain minimum is given there--among other things it is specified that with twin engined aircraft emergency fields should be available every 100 miles. In the light of this would it not seem that the direct contact operation between Prince George and Vancouver departs from that factor of safety?

A. - I cannot answer that Yes or No. If weather conditions over the Hope route are satisfactory - Yes; if unsatisfactory then direct route may be severe. There are no intermediate fields between Vancouver and Kamloops except Princeton.

Q.#43 - In those contact conditions you would not contemplate over top flying?

A. - Not for more than 15 mins.

Q.#44 - Are there any improvements you can suggest to make this route safer.

A. - There is no question the route would be more satisfactory with more radio aids, high frequency marker at Hope or a radio range, and another at Dog Creek.

Q.#45 - Would a marker at Dog Creek help?

A. - No, you really want some navigational aid, and a marker is hardly in that class.

Q.#46 - With improved radio aids to navigation and additional airports on the Princeton, Kamloops, Williams Lake, Prince George route, would you not consider that it would be wise to use this route entirely?

A. - Yes, unless exceptional conditions rendered a deviation from the airway necessary in the interests of safety.

Vancouver, B.C.
Dec. 26th, 1942

H. Hollick-Kenyon, recalled.

At the request of the Board, the witness presented his Public Transport Licence #31, which was found to be in order.

Q. #1 - You have stated in your previous evidence that you are responsible for the conduct of main line scheduled operations between Regina, Vancouver, and Whitehorse; also for the proper conduct of flight operations, supervision and development of flight techniques, recommendations concerning navigational or airway aids and supervision of pilot training?

A. That is correct.

Q. - #2 - What is your total flying experience?

A. Approximately 8000 hours.

Q. #3 - On Lockheed 14 aircraft?

A. Approximately 1000 hours altogether, probably 3 to 4 hundred hours as pilot in charge.

Q. #4 - Could you give an estimate as to the hours you have flown on the Vancouver-Whitehorse run as Captain?

A. Very few, as Captain. You will appreciate the fact that I fly in the capacity of checking or instruction purposes. Therefore my logged time shows very little as Captain, which is true for a number of years past.

Mr. Kenyon submitted the following information:

Total flying hours Captain Kubicek - approximately 5439 hours.

Total flying hours W. Holland - approximately 5648 hours.

According to records available at the present time Kubicek during November flew 56 hours 34 minutes. During the same period Holland flew 13 hours. In December Kubicek flew 56 hrs. 16 minutes.

We have at present no information available as to the total time on Lockheed 14's.

With regard to weather forecasting, Mr. Kenyon stated as follows:

There are cases where forecasts are delayed in transmission due to reasons unknown to me, as this comes under the Department, and they do not reach Fort St. John in time to be of any use and there are certain instances where forecasts for specific terminals are in variance with the actual conditions.

Q. #5 - Would you say that the observations were not accurate?

A. In some cases.

Q. #6 - Is this particularly noticeable in Vancouver?

A. No, their weather reports are generally accurate.

Q. #7 - Have any steps been taken to remedy this situation?

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A. On or about December 15th last, I communicated with Mr. D. C. Archibald asking him to come to Edmonton in order to discuss the subject of weather reporting on the North West staging route, and at Prince George, particularly in connection with the desired improvement in spot weather reporting. He intimated that he will see me shortly.

Edmonton, Alberta,
January 2nd, 1943.

H. Hollick Kenyon again recalled.

Mr. Kenyon produced herewith the originals of flight tests made by Captain Kubicek at Vancouver on October 18, October 23, September 3rd, October 12, December 14, and En Route Check Report between Vancouver and Fort St. John on October 13, and Night En Route Check Report between St. John and Whitehorse, December 13th. This tending merely, of course, to establish his general competency at night.

Edmonton, Alberta,
January 2nd, 1943.

Tenth Witness

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W.J. BRADY, 6992 Angus Drive, Vancouver, B.C.,
having been duly sworn, states:

I was Captain on T.C.A. Trip No. 3 on December 19th. The weather encountered from Princeton to Vancouver was frontal type overcast condition; clouds built up solid from 3,000 to 17,000 ft. Just after we left Princeton we were on instruments at 12,000 ft., with intermittent light to moderate static; light to moderate ice from 12,000 ft. down to 7,000 ft. The overcast held broken as far as flying was concerned between here and Westminster, there was an overcast.

Weather observations from Princeton looking towards the northwest there was a marked increase in height of clouds in the form of a high build-up.

Q.#1 - From your experience, what would that indicate in that area?

A. - It would indicate very definitely that is where the most active section of the weather was. I would expect considerable turbulence in that area.

Q.#2 - Would you expect to encounter serious icing conditions in a cloud formation of that type?

A. - Definitely.

Vancouver, B.C.
Dec. 26th, 1942.

Twelfth Witness

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ML03270 Spr. W. D. Cole, R.C.E., having been duly sworn states:

I, Spr. Cole, am a Sapper in the R.C.E., in Vedder Crossing, B.C., was in my hut after supper, on the evening of December 20th, just on the point of darkness, say at about 5:30 p.m. approximately. I heard a plane come over and went out of the hut. I only heard it once. The sound gave me the impression that it was flying low. It came from the North of us, flying toward the south or south-west. I only heard it for a few seconds. It wasn't a single engine plane.

The weather was bad -- clouds over top of the knoll (small hill about 100 to 200 feet high). It was raining.

Vedder Crossing, B.C.
December 24, 1942.

Frederick William Whitwick, Chilliwack, British Columbia, having been duly sworn, states as follows:

I, Frederick William Whitwick, am a resident of 60 Hazle Street, Chilliwack, B.C. At 6:10 p.m. on December 20, 1942, I was on the street. I heard an aeroplane flying west. I could not see it. From the sound, he appeared to be flying at the height Trans-Canada Air Lines planes usually come over. At about 6:50 p.m. I heard a plane flying west. He made two circles. He was below the level of the peak of Cheam. After this, he opened up his motors and flew in the direction of Chilliwack Lake. I am satisfied that it was a twin motor aircraft. The motors appeared to be normal. There was no sputtering or anything. After he made the two circles, he gave her the gun and the engines sounded a lot louder. The visibility was poor on the ground when I first heard the plane. There was a kind of a scotch mist. The second time it had cleared up quite a bit. Clouds were a whitish grey. There was no break or hole in the clouds. I would estimate the aircraft at being about 4,000 to 4,500 feet.

I have been living here for twenty-two years. I often go out and listen to Trans-Canada Air Lines planes coming over.

Chilliwack, B.C.
December 24, 1942.

Fourteenth Witness

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H82348 Spr. H. O. Beck, R.C.E., having been duly sworn states:

I was in camp on the evening of December 20th, 1942. After supper at about 5:15 p.m. I heard a plane fly over. By the sound I thought it was a twin engine Job. I came out of the hut to look for it. I think the plane was flying at a height of from 1,000 to 2,000 feet. It appeared to be flying toward the N.E. in the general direction of Chilliwack Lake. The engines sounded perfectly normal. I could see the lower hills around the camp.

I worked in Canada Car for two years. I am interested in aircraft.

Vedder Crossing, B.C.
December 24, 1942.

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CAPT. A. RANKIN, 6155 McKenzie St., Vancouver, B.C.,
having been duly sworn, states:

I am employed by Trans Canada Air Lines and hold
Public Transport Pilot's Licence No. 122.

Q.#1 - The evidence shows there was more than one machine
flying from Vancouver on Dec. 20th. We understand
you had left Vancouver and were in the vicinity of
Chilliwack?

A. - I was Captain of T.C.A. Trip No. 4 on the 20th of
December departed from Vancouver at 1708 hrs. - take-
off time 1715 hrs. At 1718 we were at 1500 ft. on
east leg of Vancouver Range, climb was continued on
east leg, marker was crossed at approximately 9000 ft.
Previous to this ice was being encountered above
the 7000 ft. level. After passing the marker at
9000 ft., moderate ice began to accumulate. We then
increased power and turned south of the east leg of
Vancouver and made a 360° turn to attempt to climb
above ice conditions. One complete turn and one half
turn were made before turning back again. We
eventually got the engine up to 2500.

At the time we knew we had a westerly wind, but were
not aware of strength until we had a check over Prince-
ton, after making two turns I believe our groundspeed
was around 230 m.p.h., airspeed down due to ice, not
much over 170. Wind about 50 m.p.h. S.W.

Q.#2 - About how long after you passed marker before you
started turns?

A. - It would probably be two or three minutes past the
sharp position.

Q.#3 - How long did turns continue?

A. - Very shallow, I would say about three minutes - I
would say the time taken to complete turns and arrive
back on range would be five minutes - about six to
eight minutes past marker when we completed turns.

Q.#4 - How was radio reception from Vancouver Range?

A. - Range was good, we heard Range talking to other
aircraft. Our reception of the Range was good and
I think this message they were broadcasting was repeated
twice at least. We could read them all right.

Q.#5 - What time did you hit Princeton?

A. - About 1752.

Vancouver, B.C.
Dec. 26th, 1942.

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H.W. EDWARDS, 8408 Hudson St., Vancouver, B.C.,
having been duly sworn, states as follows:

I am employed as Department of Transport Meteorologist
on duty during the day of December 20th, from 8:30 in the
morning until 16.30 in the afternoon.

Q.#1 - Were you responsible for forecasts?

A. - Yes. I was not responsible for forecasts covering
the period from 9:00 hrs. to 17:00 hrs. issued by
forecaster going off duty. After I am on duty any
forecasts required are issued by me.

Q.#2 - Would you give the Board your opinion regarding the
weather characteristics in the area around the north
end of Howe Sound during the afternoon of Dec. 20th?

A. - I submit herewith weather map at 1730 Pacific
Daylight time Dec. 20th. I would expect around
Howe Sound at that time clouds would probably be
built up, several layers, very ragged, some shower
clouds up to - say, 16,000 ft. or in some cases
probably higher; with light to moderate rain showers,
snow on higher levels. I do not know the exact
height at which you could expect snow; it would
probably be fairly close to the surface--5,000 to
6,000 ft. As far as icing conditions are concerned,
the area was quite moist, temperature almost saturated.
I would expect with the showers light to moderate
icing conditions. As far as turbulence was concerned
there might be moderate turbulence in the higher
poles; cumulus clouds not extremely severe; conditions
just moderate.

Q.#3 - Would conditions be appreciably more severe north of
Vancouver than in Vancouver itself?

A. - Ordinarily north of Vancouver there is not as much
lift due to the higher maintenance as the air strikes.
On the north they get more severe showers than at the
Airport. Even when it is clear here, on the north
shore they have quite heavy rain due to the lift of
air over the mountains.

Q.#4 - What is the relative stability of weather conditions
in that area as compared to weather over here or
farther east?

A. - The front moving from west to east and weather
conditions changing all during the afternoon, farther
west would clear up sooner as far as the front itself
is concerned. I really don't think the weather over
the north route and eastern route would be greatly
different--it was squally right along the valley.
It had just begun to clear up at Vancouver.

Q.#5 - Do you recall a conversation with the C.P.A. operator
on the afternoon of the 20th?

A. - Yes. He asked me if I thought it would be advisable
to clear a trip on the direct route. I didn't know
what trip it was and I don't recollect the exact
time--I think it was probably between 1400 and 1430
hrs. I was speaking to C.P.A. radio operator on duty
at that date--I told him it would not be advisable

Sixteenth Witness

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H.W. Edwards

to clear on the direct route at that time. To go straight south from Hope there are no emergency fields and the weather wasn't good, so I told him the other route was advisable, not because I thought weather conditions so much worse but that facilities the other way were less.

Q.#6 - During the winter pilots frequently encounter quite heavy winds of quite high velocity?

A. - The highest winds certainly are usually in a westerly direction. They have winds from all directions but westerly prevails, and the highest are usually westerly, after a front they will veer around to the west.

Q.#7 - That is the time at which you experience most difficulty in making observations of upper air movements?

A. - Yes.

Q.#8 - There is therefore always the possibility of a factor of uncertainty in flying over the mountains during the winter time in unstable weather conditions--a wind of 20 to 30 miles at lower levels may upstairs be 150?

A. Yes. We generally have some idea, because wind velocity itself depends on change of pressure at any level. Twice daily, morning and evening, northern Canadian stations make upper air observations. We draw them 5,000 to 10,000 ft., although observations north of here are very scant and it is difficult to get an accurate estimate, yet it gives you an idea just what they are likely to be. At this time in the afternoon when the forecast map from the morning is not available, we have to depend on the wind taken at 2230 the previous day. That is when direct observations are lacking.

Q.#9 - From your reports do you have any records of weather observations on the afternoon of Dec. 20th? Have you any records to show what upper wind velocities were on the afternoon of Dec. 20th?

A. - Reports are on back of map submitted.

Q.#10- Will you give your opinion on whether it is safer to run down from Williams Lake to Kamloops down the lake of the range into Princeton and then west into Vancouver, or whether, even taking into account the very rough terrain between Bridge River and Squamish, weather conditions are such as to make it possible to go that way. It would be purely a matter of weather but if weather were better there than on the southern end of the route, it might be justified. We want to get all information we can on the weather in those two areas.

A. - I do not think it would be better over the direct route.

000453

H.W. Edwards

Q.#11 - In your opinion, from the weather standpoint, there would be no advantage in going over the direct route?

A. No.

Q.#12 - Was it a fact that on this particular occasion the front had passed Vancouver to Prince George?

A. - From the 1730 map it was almost through Prince George at that time. At the time the trip left Prince George it would be somewhat to the west. The trip left there at 1521--at that time the front would be to the west of Prince George and to the west of Vancouver.

Q.#13 - At about 1700 hrs. of the day in question the front had passed Vancouver and presumably was a little west of there?

A. - I believe again it had passed Vancouver although right at Vancouver the front itself was almost sure to leave.

Q.#14 - Would you expect a clearing action behind the front on the day in question?

A. - Yes, not immediately behind it. About two hours after the front passed I would expect it to improve.

Q.#15 - Would there be any difference in the clearing action as between the Mt. Garibaldi area and the valley?

A. - It depends to a certain extent on the type of area that follows the front. It would be likely to be more squally than the Garibaldi area.

Q.#16 - Is it usually a characteristic of such conditions--that it is likely to clear more rapidly in the valley than in the higher levels?

A. - Clearing takes place more rapidly usually on the lee side of mountain range than to windward, where the clouds are likely to persist for longer time and there is likely to be rain or snow squalls.

Q.#17 - In your opinion, would that indicate a tendency to lessen cloud formation over Squamish? We know it was lessening at Patricia Bay, could that be expected to be the case at Squamish?

Q.#18 - I think in that area there would probably be more clouds than at Patricia Bay--at the same time I think conditions would be improving in that area and that a build-up would be tight at the top of the clouds, becoming less. Clouds after that time would be subsiding--conditions would be improving--in that respect, would not expect any rapid clearing in that area, lower clouds would hang around.

H.W. Edwards

Q.#19 - Do you consider the weather at the time trip 4-17 was despatched on Dec. 20th justified a contact clearance between Prince George and Vancouver on the direct route?

A. - No, at least I do not think you could fly contact. The ceiling was too low. I don't know if the clouds would have broken up at that time, although the tops might probably be subsiding. At lower levels the general forecast was solid clouds.

Vancouver, B.C.
Dec. 27th, 1942.

H.D. CAMERON, 1356 W. 12th Avenue, Vancouver, B.C., ^{having been sworn,} employed with Department of Transport Meteorological Division, states:

I came on duty the afternoon of December 20th at 16:30 hrs., remaining until 24:00 hrs.

Q.#1 - Did anything happen during your period of duty?

A. - Capt. Ballentine, of the flight coming in, and his co-pilot, Mr. Beckett, came in to give a report of weather they encountered over the mountains--he usually does, he gives this verbally. I believe it was approximately 1850 hrs.

Mr. Boyd of the Radio Range had mentioned previously there was a delayed C.P. trip, but about 1850 he said it was overdue, a C.P. trip from Prince George, so he wanted weather observations coded up for broadcasting, so I immediately went up to the roof and took an observation myself and coded it for him before broadcasting. That was the first I knew of a land-plane overdue, if it had been a seaplane we would not be much concerned because sometimes a seaplane may find it necessary to land somewhere for a time.

It wasn't until 1850 I was informed. I coded up the weather for Mr. Boyd, from then on we kept a specially close watch on the weather and also to see if we could hear any aircraft.

About 1935 I hadn't received any official notice from Canadian Pacific Air Lines and I didn't want to do anything without consulting them, so I telephoned them to see if they wanted to officially declare the trip overdue and ~~I would put a message on the teletype if~~ they so desired. They asked me to do so, so I had the teletypist send an emergency notice to all stations on our circuit and to Vancouver Island also put on a message to American stations on circuits 10, 11 and 13, asking them to be on the lookout for an aircraft that was two hours overdue.

A little later I telephoned Mr. Gilbert. I had a suggestion that they broadcast a notice on the commercial radio broadcast, as possibly some farmers might have seen or heard something. Mr. Gilbert agreed to this suggestion. I believe that is about all.

Q.#1 - To whom were you speaking at Canadian Pacific Air Lines re emergency message.

A. - I don't know. It was on the interphone.

Vancouver, B.C.
Dec. 27th, 1942.

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A.R. McCauley, 7837 Angus Ave., Vancouver, B.C., states:

I am employed as Meteorologist in charge Vancouver Station and have been there approximately five years.

Q.#1 - In your opinion, is it possible to make any general assumptions regarding the weather behind either a warm or a cold front moving east from the coast, north of Vancouver?

A. - Each front has its own characteristics. The weather following the front will depend upon the season of the year and the previous history of the air mass. In general, clearing will be more rapid over the valleys than along the mountain slopes. Clearing behind cold fronts on the coast over the Cascade Mountains is slower than a similar front over the ocean or on the prairies.

Q.#2 - If you pass behind a cold front would you expect a warm front normally?

A. - We very infrequently have warm fronts on the Pacific-- they are usually cold fronts. The warm mass is prevented in its eastward motion by the mountains, with the result the cold front catches up to the warm front, lifting the entire mass of warm air aloft, and frontal system is then shown as an occluded front.

Q.#3 - Is such a condition accompanied by more than usual turbulence?

A. - That depends on whether the occlusion is a warm front type or a cold front type. In general the turbulence associated with a warm type occlusion will develop very similarly to that of a warm front, and sometimes with the cold type occlusion there will be turbulence similar to that of the other cold front.

Q.#4 - It is not possible, then, to come to any general conclusions?

A. - In the majority of cases you can predict the type of weather that will follow any particular type of front.

Q.#5 - I gather from what you say that a trained meteorologist having studied the characteristics of a particular air mass would probably be in a position to predict the characteristics of the air behind the front, whereas a layman not having studied the characteristics of that air mass would not be in a position to take up a chart and draw any accurate conclusions from it?

A. - This is substantiated. Experience has a lot to do with it. You can always forecast better for your own district than for another district.

Q.#6 - What time are these maps drawn up?

A. - Every six hours beginning 0530 hrs. In addition we draw a smaller map every three hours, when there is the most flying. We cannot tell how fast the fronts coming in off the coast are travelling until they have passed two stations. We are hampered by lack of information from the west--most weather moves from west to east.

Eighteenth Witness Page -46 -

A.R. McCauley

Q.#7 - What is your opinion on conditions prevailing at 1430 hrs. on December 20th?

A. - As I recall it, the best way would have been contact or intermittently contact from Prince George until approaching the Cascades, then instrument over the Cascades to Vancouver.

Q.#8 - There is no weather man at Prince George?

A. - No forecaster; just an observer.

Vancouver, B.C.
Dec. 27th, 1942.

Witness recalled for further questioning.

Q. #9 - Will you please submit to the Board any records you have covering weather conditions existing in your district from noon until 18:30 hrs on the 20th of December?

A. Yes. I Herewith submit to the Board the following records:

- (a) Reported weather, Vancouver, B.C. and Princeton, from 12:30 hrs. to 18:30 hrs., December 20th, 1942.
- (b) Pilot balloon observation for areas in B.C. and Seattle, Washington, December 20th, 1942.
- (c) Airways Weather Record for December 20th, 1942, covering the following points:

Prince George,
Williams Lake,
Vanderhoof,
Kamloops,
Lillooet,
Kleena Kleene,
Boston Bar,
Princeton,
Hope,
Chilliwack,
Rock Bay,
Vancouver,
Quesnel,
Merry Island,
Patricia Bay

Vancouver, B.C.,
December 28, 1942.

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Gus Armstrong, Chief Operator, Canadian Pacific Air Lines Limited, Fort St. John, B.C., having been duly sworn, states as follows:

I, Gus Armstrong, am employed as dispatcher for Canadian Pacific Air Lines at Fort St. John, B.C. On December 20th, 1942, I dispatched Trip 4-17 from Fort St. John to Vancouver, after receiving a landing clearance from Edmonton, Alberta.

Q. #1 - Did you clear Trip 4-17 from Fort St. John to Prince George intermittent instrument?

A. Yes.

Q. #2 - What do you mean by intermittent instrument?

A. Partly contact and partly instrument.

Q. #3 - Were you familiar with the dispatch of Trip 4-16?

A. Yes.

Q. #4 - Why was trip 4-16 dispatched intermittent instrument from Prince George to Vancouver, while Trip 4-17 was dispatched contact.

A. I cannot say. Trip 4-16 was dispatched from Vancouver.

Q. #5 - Did you refer your dispatch to Vancouver for confirmation?

A. No. I expected Vancouver to cancel this if it wasn't approved.

Q. #6 - What made you think it was OK for Trip 4-17 to clear contact?

A. The weather report at the time. At 1400 hrs. it showed at Vancouver (See report)

Q. #7 - Were you aware that there was a front moving in from the west at that time?

A. Not officially, but I had a pilot's report that a front was moving in towards Vancouver, that I believe had been relayed from the Vancouver office, but this was told to me on Pilot Ballentyne's return to Fort St. John on the 22nd.

Q. #8 - Is it customary to dispatch a trip from Fort St. John to Vancouver without reference to Vancouver?

A. No. I usually get a clearance from Vancouver.

Q. #9 - Were you aware that there was no dispatcher on duty at Vancouver at that time?

A. No.

Q. #10 - How long have you been stationed at Fort St. John in the employ of Canadian Pacific Air Lines.

A. Since September 1st, 1942. I have been dispatching since May 1942.

Q. #11 - Did the fact that Vancouver gave no objection

Nineteenth Witness

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constitute local approval of the plan to your mind?

A. Yes. The plan for Trip 4-17 was sent at 1400 hrs.

Fort St. John, B.C.,
January 1st, 1943.

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Thomas McLaughlin, 12123-122nd Street, Edmonton, Alberta, having been duly sworn, states as follows:

I am employed as Crew Chief for Canadian Pacific Air Lines, stationed at Edmonton.

Q. #1 - Was it in October this machine was given #1 check and overhaul?

A. It was a #1 check and right engine change.

Q. #2 - Was this in November or October?

A. CP-CPD arrived in Edmonton for #3 check and right engine change on December 9th. This work was completed December 12th.

Q. #3 - As a result of your inspection you certified the aircraft and engine as being airworthy?

A. The day the machine left Edmonton, it was the Sunday morning, December 13th, Mr. Kubicek came up and appealed to take the machine and due to adjustments we had to make to the mixture control on the carburettor and the propeller governor controls, we did a local test flight for about half an hour, and made one or two final adjustments on the ground again, and gassed him up and he left for Fort St. John.

Q. #4 - You certified the log books?

A. Yes.

Q. #5 - Who certified them with you?

A. The machine had been flown the previous day, December 12th, and there were other adjustments to be made which were made overnight and other minor adjustments.

Q. #6 - You did not have another engineer check over the controls?

A. That part was all done in the installation checks. The people in charge of the engine installations and engineers on the other ships had their names where it was proper on the work sheets. I did the final signing out on that particular day.

Q. #7 - What class of Air Engineer's Certificate do you hold?

A. A and C.

Q. #8 - There was no major repairs carried out at all?

A. Just routine Lockheed #3 check and engine change.

Q. #9 - Have you Lockheed instructions telling you when these various checks must be carried out and what points must be covered by each check?

A. We have a check system, I believe which is copied from Trans-Canada Air Lines, and based on the Lockheed data on Checks #s 1, 2, 3 and 4, which are carried out pretty closely.

At the request of the Board the witness presented his A and C Air Engineer's Certificate #A-1058, which was found to be in order and good standing.

Edmonton, Alberta,
January 2nd, 1943.

Norman Edmund Dennison, 9928-107th Street, Edmonton, Alberta, having been duly sworn, states as follows:

I am Superintendent of Maintenance, Canadian Pacific Air Lines, stationed at Edmonton.

Q. #1 Are you a holder of an Air Engineer's Licence?

A. Yes. Air Engineer's Licence #A- 539 Types A, B, C, and D, endorsed in Categories A and C for Lockheed.

Q. #2 Will you please give the Board copies of instructions for maintenance and overhaul, governing all your inspections for maintenance and overhaul of aircraft.

Mr. Dennison handed these to the Board for their retention. (manuscript)

Q. #3 - Have you any specific instructions covering the conditions or the time limits under which the engines, propellers and the aircraft shall be completely overhauled?

A. Engines: We are more or less following TCA procedure which either overhaul the engine at 550 to 600 hours or as an alternative, remove the cylinders for inspection at approximately 400 hours and 800 hours for the crankcase. We have been overhauling our engines at 550 to 600 hours, as we have no spare cylinders.

Q. #4 - Where has this overhaul work been done?

A. By TCA in their Winnipeg shops. We send a complete unit from the firewall forward, and they return it to us and it is a case then of exchanging the units.

Airframes: We have not set down an actual time limit for removing wings for inspection. We remove the elevator tabs, leading edge of elevator, stabilizers and remove the floor and seats and the leading edge of the centre section at each #4 check, which is 200 hours, and the same applies to engine change time. In this particular case on this aircraft it was due for a No. 3 check at the time of the engine change, but while the work was going on we went further than that and carried out a complete #4 check. That is in addition to the work called for on a #3 check, we removed the floor for inspection of controls and the wheels, for an inspection and servicing of brakes and tires.

I herewith submit to the Board the complete engine change and inspection report as carried out in our shops between the period of December 9th and December 12th, to Lockheed CF-CPD. These are initialled by W. J. Busby at the time the job was completed and each item as it was carried out by the mechanic is initialled. In addition we have a complete report of the servicing carried out in Vancouver between the dates of December 14th and including the morning of December 20th, #1 and #2 checks.

Q. #5 - Was there a gyro pilot installed in CPD?

A. No. The automatic pilot was removed from the aircraft prior to delivery to Yukon Southern last August.

Q. #6 - What flight navigation instruments are on that aircraft?

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A. Directional gyro, gyro horizon, turn and bank, rate of climb, 2 altimeters, 2 airspeeds - all the standard instruments.

Q. #7- What system had you for checking and calibrating these instruments, when and how is that work done?

A. Our Sperry instruments are now sent to TCA shops, Winnipeg. Our other instruments are inspected and calibrated in our own instrument shop here.

Q. #8 - What about the propellers? What system of maintenance and overhaul have you for them?

A. We return our airscrews to TCA every 2nd engine change, at approximately 1100 hours. They are checked at every other engine change here. They are actually sent to TCA shops every 1000 or 1100 hours.

Q. #9 - Do you keep propeller log books?

A. Yes.

Q. #10 - Do you know the maximum service life of the propellers being used?

A. 7000 hours for the blades.

Q. #11 - Is there anything laid down for the maintenance of the de-icer equipment?

A. That is covered in # 2, 3 and 4 inspections.

Q. #12 - The original service life of these propellers as recommended by the Manufacturers was 4000 hours. Was your company granted extension beyond that limit by the Manufacturers?

A. No. But TCA were and we naturally concluded that the same concession would apply to our company.

Q. #13 - Did your company ever submit a specimen propeller to the Manufacturers for inspection and investigation, and a report covering the type of operation under which these propellers were being used?

A. No.

Edmonton, Alberta,
January 2nd, 1943.

H. G. Hardham, 12142-122nd Street, Edmonton, Alberta, 70
having been duly sworn, states as follows:

I am a dispatcher with Canadian Pacific Air Lines Limited, stated in Edmonton.

Q. #1 - Were you on duty on the afternoon of December 20th?

A. Yes.

Q. #2 - Would you kindly tell your story in your own words please?

A. To the best of my knowledge Trip 4-17 left Fort St. John and operated routine. The last I heard he was almost at the point of letting down in Vancouver and from that time on I heard no more about it until I heard that he was missing and not reported in Vancouver. I actually had nothing to do with the dispatch of the trip from St. John, outside of a discussion with the St. John dispatcher regarding the advisability of holding Trip 4-17 in connection with our Trip 2 from Whitehorse. The first wire from St. John indicated that Trip 4-17 should hold in connection with Trip 2. Mr. McNamee was on duty in Edmonton at the time and he sent a wire saying hold Trip 4-17.

The following are copies of messages in this connection:

1300 20-12-42 Fort St. John
Operator, Edmonton.
Advise if Kubicek to hold at St. John for north trip or clear to Vancouver stop Present indication of two planes bringing loads from Vancouver to St. John unfavorable if unable to clear north as at present rush please reply

Signed Dispatcher, Fort St. John
Received 1318 Radio Range office Edmonton,

- - - - -

1403 Edmonton 20-12-42
Dispatcher Fort St. John
Have Kubicek hold St. John for south bound load

Signed Dispatcher McNamee, Edmonton

- - - - -

Ft. St. John 20-12-42
Dispatcher Edmonton.
Have 6 passengers here 3 at Prince George and trip loaded and ready to go south stop advise rush

Signed Dispatcher St. John,
Received Edmonton 1422.

- - - - -

I came on duty again at 1400 and sent the following reply at 1437:

Dispatcher St. John.
OK Kubicek proceed south

Signed Dispatcher Edmonton.

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Q. #3 - Are you chief dispatcher?

A. There is no such appointment. Each dispatcher is in an individual capacity.

Q. #4 - How long have you been acting in the capacity as dispatcher with Canadian Pacific Air Lines?

A. Since July this year.

Q. #5 - In terms of actual seniority you haven't been doing this as long as Armstrong?

A. No.

Q. #6 - I gather from what you say that your duties as you understand them cover two phases of operation. One to ensure the traffic situation and the other the loading of the aircraft. Is that right?

A. Yes, but not for the actual traffic, but to see there is no overload of traffic on aircraft.

Q. #7 - Is it your duty to see that movement of trips is co-ordinated?

A. Yes, Mr. Kenyon is Operations Supervisor, and we refer matters to him, but if he or Mr. McConachie are not available, we look after it.

Q. #8 - What other duties have you as dispatcher?

A. We consider the trend of the weather and discuss it with the Meteorological office and try to form an opinion as to whether the proposed operation is safe or otherwise. If we consider it favourable for safe operation we issue a clearance.

Q. #9 - It is your duty then to assess the weather and discuss it with the pilot?

A. Yes.

Q. #10 - Do you ever dispatch aircraft from Fort St. John to Vancouver from this office?

A. No. Sometimes Vancouver will ask our opinion, or possibly advice, as to whether it should be cleared or not. Sometimes they have even telephoned to discuss the operation, and if we can help them out in any way with our suggestions or advice we do so. Possibly the main reason they telephone us is that Mr. Kenyon is close at hand and we can get his advice on the operation as well, and we can help them out from this end.

Q. #11 - Were you aware there was no dispatcher on duty in Vancouver on the afternoon of December 20th when flight 4-17 was en route?

A. No.

Twenty-second Witness

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Q. #12 - Is it your understanding that a Flight Plan filed at Fort St. John and approved for dispatch from that point should also receive the approval of the Vancouver office?

A. Yes. The Flight Plan is transmitted to Vancouver for their consideration, and they signify approval by filing.

Q. #13 - Is this procedure followed in order to ensure that the flight as planned is safe, taking into account the Vancouver weather?

A. Yes, that is my understanding.

Edmonton, Alberta,
January 2nd, 1943.

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FLIGHT PLAN

Trip 4-17. Aircraft Lockheed 14 H2 CF-CPD;
December 20, 1942. From Fort St. John to Vancouver.

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EXHIBIT A.

Message Reports as received by Canadian Pacific
Air Lines, Vancouver, B. C., pertaining to trip 4-17.

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EXHIBIT B

Actual Radio Messages received by Canadian Pacific
Air Lines radio operator, Vancouver, B. C., pertain-
ing to Trip 4-17, Dec. 20, 1942.

REPORTS ON T 4-I7 RUN ON DEC. 20TH.

XJ 4 VR I400

OPS VR

F P 4-I7 K/H Y CPD ETD XJ I445 XS INTER INSTRU I20 I-I5 VR C I20

2/25 ALT CCA RET XJ MIN FUEL 260 RAD 5390

DX XJ I353EW

XJ 2 XS I445

OPS CPA

DX 4-I7 OUT I440 LOAD PASS VR 6 BG IO-24I MAIL NIL EX NIL DELAY DUE
CLEARANCE

DX XJ I357EW

XD 3 XJ I436

DX XJ

OK KUBICEK PROCEED SOUTH

DX XD

XJ I437EW

4-I7 EST SENTINEL MT. I2000 I75 I5I9m EW

XS 3 VR I52I

DX VR CPI ALL

DX 4-I7 IN I505 OUT I52I PASS 4 BG 7-II5 EX I-3 MAIL NIL CAB PASS IO

MCDONALD I524EW

4-I7 IO W QUESNELL -----I550EW

4-I7 20 S STUMM LAKE I620 EW

T4-I7 VR OVER BRIDGE RIVER I650RR

4-I7 MY GUNN LAKE I650EW

LANDING CODE TRIP 4-I7 9 93779 CEILING QUEEN VISIBILITY TARE

WIND DIRECTION PREP WIND VELOCITY PREP KOLSMAN DOG MINUS ONE

T 4 I650RR

4-I7 N LEG YJ 772/I727EW

4-I7 N LEG VR RANGE I2000 ETA VR I745 LETTING DOWN ON E AND W LEG

I734EW

VR 4-I7 TRIP REPLIED ASKING FOR CEILING AND VISIBILITY RANGE GAVE
SAME BUT DID NOT RECEIVE ANY ACKNOWLEDGEMENT

I805RR

78

EXHIBIT C.

Statement of weather reports from 12:30 hrs. to 18:30
hrs. December 20th, 1942, received by Canadian Pacific
Air Lines Vancouver from weather office, Vancouver.

FOLLOWING IS THE WEATHER OBTAINING AT VARIOUS POINTS AND TERMINALS
RELATIVE TO ERIPS 4/16 AND 4/17.

KORT ST JOHN

1230 45 overcast 8 miles altimeter setting 29.66
1330 45 " 8 " " " 29.58
1430 40 " 8 " " " 29.56
1530 20 " 8 " " " 29.54

PRINCE GEORGE

1230 80 " 8 " " " 29.41
1330 70 " 8 2 " " 29.37
1430 80 " 8 " " " 29.34
1530 65 " 8 " " " 29.34
1630 60 " 8 2 " " 29.31
1730 60 OBSCURED 1/2 " " " undecipherable
1830 50 " 8 " " " 29.34

GRANDE PRAIRIE

1330 25 overcast lower broken 8 miles altimeter setting 29.61
1430 25 " " " 8 " " " 29.61
1530 24 " " " 8 " " " 29.56
1630 25 " " " 8 " " " 29.55

WILLIAMS LAKE

1330 70 OVERCAST LOWER BROKEN 8 " " " 29.46
1530 UNLIMITED HIGH BROKEN LOWER SCATTERED 8 MILES ALT SET 29.38
1630 " " " " BROKEN 8 " " " 29.43
1830 " " OVERCAST 8 " " " 29.47

KAMLOOPS

1300 UNLIMITED SCATTERED 8 MILES
1500 60 OVERCAST LOWER BROKEN 8 MILES TEMPERATURE 44
1600 70 BROKEN 8 MILES

LILLOET

1330 50 OVERCAST LOWER BROKEN 8 miles ALT SET 29.61
1530 70 BROKEN LOWER BROKEN 8 " " " 29.66
1630 HIGH BROKEN LOWER SCATTERED 8 " " " 29.66
1830 70 BROKEN 8 MILES

CHILLIWACK

1430 40 OVERCAST LOWER SCATTERED 8 MILES LIGHT RAIN SHOWER
1530 30 " 8 MILES LIGHT RAIN WIND SOUTHWEST 15
1630 20 " 8 " " " " 15
1730 10 " 8 " " " " 20
1830 NO REPORT

PRINCETON

1330 50 SCATTERED 15 MILES ALT 29.74
1430 50 " 15 " " 29.72
1530 50 " 15 " " 29.68
1630 HI BROKEN SCATTERED 50 15 miles ALT SET
1730 HI OVERCAST SCATTERED 50 15 " " " 29.67
1830 HI BROKEN SCATTERED 45 15 " " " 29.72

VANCOUVER

1330 25 OVERCAST 15 MILES LIGHT RAIN SHOWER 29.61
1430 60 " LOWER BROKEN 15 MILES LIGHT RAIN 29.66
1530 60 " 15 SCATTERED 15 MILES 29.81
1630 60 " 20 MILES 29.84
1730 50 " 15 SCATTERED 25 MILES 29.81
1830 60 BROKEN 20 MILES 29.83

q^o

EXHIBIT D.

Report of message as received by Witness R. Raine,
at Vancouver, B. C. Pertaining to Trip 4-17, Decem-
ber 20th, 1942.

81

EXHIBIT E.

Extracts from Vancouver Radio Range Station Log,
pertaining to Canadian Pacific Air Lines Trips
4-16 and 4-17, December 20th, 1942.

DEPARTMENT OF TRANSPORT
RADIO DIVISIONTyped by J.W.A. Robertson
VFW.Extracts from log only on PROCES-VERBAL
aircraft worked or heard.
routine monitoring adjacent Ranges and Markers omitted
DATE December 20th. 1942 Vancouver BCOpr. W.A. Boyd.
En duty VFW
RADIO STATION

TIME	STATION TO	STATION FROM	COMMUNICATION	OPERATOR'S INITIALS
			<u>Flight Plans re CPA-4-16 & 4-17</u>	
			CPA 4-16 CF-CPC Ballantine out XS 1355 on intmt instmts 12T 1-45 Hope intmt 12T Hope VR	
			CPA 4-17 CF-CPD Kubicek 2.25 XS Drot 12T VR Out XS 1521	
			Both above phoned from CPA Radio VR 1435P/20 H.	
				WAB
1627	TCA-3	CYJ	Re CPA 4 at 16,000 (CJR VR notifying his trip of	
48	CYJ	TCA-3	Begn TCA-3 descg from 12T whereabouts Ballentine	
57	"	"	Marker 10T dsdg	
1706	"	"	5200' dsdg New Westminster	
"	VXV	"	" " " "	
15	"	"	Ask landing clearance- OK to land	
18	"	"	TCA-3 on ground at VR	
15			TCA-4 airborne to QL (means TCA-4 going East)	
18			" 1500' climbing Eastbound	
1726-27	VXV	CPA4-16	5000' Fraser Ave Bridge dsdg & crclg to coming	
27	CPA4-17	VFW	On N leg YJ Range (something about E leg - QRM)	
32-34	"	"	advise CPA interphone but he unread all N leg VR Range 12T ETA VR 45 - is it OK to use E & W leg for letdown (advise CPA office but unread all) Advise Tower-says OK no local traffic	
1735	CYJ	TCA-4	Reach Cruising Alt. 13,000 at 35	
55	CPA4-17	VFW	Ask PX twice no answer	
1805	"	"	Called on request CPA - no answer	
07	"	"	Sent VR code weather blind	
10-11	"	"	Ask answer 3105 - no reply	
14	"	"	Called-no answer- advise answer 3105	
17	VFDJ	VFDM	Ask standby 5399k - willco	
19	CPA4-17	VFW	No answer 3105	
22	"	"	" " 5390	
26	"	"	" " "	
30	"	"	Ask trip call 4755 kc (moderate QRM on 5390 BC telephone and carrier noises all evening. 4495 is bad for same QRM. Marwell of Fort Rupert QRM) QRM 5390K is Vancr calling Bellabella.	
40	"	"	No answer	
45	"	"	" " "	
			several more calls were made up to 1950 - no answers	

Entries re CPA trips are in red. Those in black mainly refer to TCA trips which were flying VR Range at the same time and are included to show range operation was normal. This has been further verified by evidence of TCA pilots concerned. There was no PRECOT issued but VFW advised Sidney Isld. Princeton was advised by SSS teletype later.

0000475

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EXHIBIT F.

Aircraft and Engine and Radio Inspection Report
Carried out at Vancouver, December 19th and 20th,
1942.

CANADIAN PACIFIC AIRLINES AIRPLANE AND ENGINE INSPECTION REPORT

Station Vr. Plane No. CPD
 Date { IN Dec. 19/42 Trip { IN 4
 { OUT Dec. 20/42 { OUT 3

Time Since Engine Overhaul: Left 208.37 Right 43.17 hours. Engine No.: Left 3175 Right 302
 Time Since Last No. 4 Check 201.21 Hrs. at Station Ed Date 14/10/42

CHECK TO BE DONE (Circle One)

1

2

3

4

5

FUEL AND OIL

Fuel	Left	By	Right	By	Oil	Left	By	Right	By
Front Fuel Tanks—gals.	55	CWA	58	CWA	Quarts In	16	CWA	16	CWA
Rear Fuel Tanks—gals.	95	CWA	143	CWA	Quarts Drained	1	TSE	1	WGH
TOTAL GALS.	150		201		Screens		TSE		WGH

INSPECTION

	Left By	Right By		By		By
			Emergency Exit	WGH	Barograph	
			Fire Extinguishers	TSE	Oxygen 16002 35	TSE
Propellers	TSE	WGH	Electrical System	TSE	Seals	
Engine Nacelles	WGH	WGH	Fuel System	TSE	Propeller Deicer System	TSE
Engines	TSE	WGH	Hydraulic System	WGH	Fuselage	WGH
Engine Accessories	TSE	WGH	Heating System	WGH	Wings	WGH
Oil Systems	TSE	WGH	Flight Controls (including flaps)	WGH	Empennage	WGH
Battery Changed by			Auto Pilot		Miscellaneous Equip.	
Number Removed	R9	WGH	Landing Gear (incl. Tail Wheel)	TSE	Plane Cleaned, Interior	LS JB
Number Installed	L 15	WGH	Surface Deicer System	WGH	Plane Cleaned, Exterior	MJ VM

Instruments Inspected by

Radio Inspected by

Instruments Ground Tested by TSE

Radio Ground Tested by

ENGINE GROUND TEST

	Left	Right		Left	Right		
Max. Ground R.P.M.	2000	2000	Idling Oil Pressure	15	15	Propeller Deicer Oper'n	OK
Idling Ground R.P.M.	500	500	Cylinder Temperature	375	375	Generator Operation	OK
Manx. Manifold Pressure	29"	29"	Auto Carb. Operation	OK	OK	Gyro Instrument Oper'n	OK
Max. Fuel Pressure	42	42	Propeller Operation	OK	OK	Hyd. System Pressure	450
Max. Oil Temperature	160	160	Dual Vac. Pump Operation	OK	OK	Outside Air Temperature	45
Max. Oil Pressure	80	70	Surface Deicer Operation	OK	OK	Engine Grnd Tested by	TSE

WORK TO BE DONE AND ADDITIONAL WORK COMPLETED

	Mechanic	Inspector
2 pts. servo added large tank	WGH	
Refill small fire extinguisher	WGH	
Replace entrance light at door	TSE	
2 Qts. de_icer fluid added	WGH	
Repair broken bonding wire on carburetor air intake left engine	TSE	
Tighten oil pressure line connection opposite left mag. right engine	WGH	
Pump up tail wheel oleo. Put new air valve in.	TSE	
Paint backs of props.	JEG	
Note		
Blue color appearing on right dump valve outlet for right gas tanks, appears to be leaking dump valve. Also servo oil leak observed in #3 comp.	WGH	
Tail shock leg leaking.		

Certified Airworthy by

T.S. Finnie

C.P.A. Log Book Posted by

TSE

Countersigned

000477

q's

EXHIBIT G.

C. G. Ballentine's Report of Trip 4-16 of December 20th,
Prince George to Vancouver, via Princeton.

EXHIBIT H

WILL BE INSERTED LATER.

47

EXHIBIT I.

Department of Transport Meteorological Division,
Vancouver B. C. Weather Map. Dec. 20, 1942.

88

EXHIBIT J.

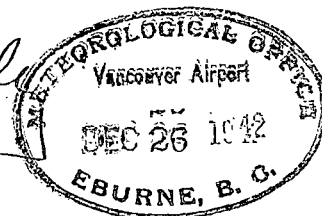
Special Weather, Vancouver - Princeton, from 12:30
hrs to 13:30 hrs. Dec. 20, 1942.

December 20 -- pilot balloon observations.

Station	Time (PD)	Surface	1000ft	2000ft	3000ft	4000ft.
Vancouver	0300	Raining - no observation.				
Carmi	0300	Low Clouds - no observation.				
Prince George	0300	Not filed.				
Seattle	0300	Raining - no observation.				
Vancouver	0900	20-10	180-27			
Carmi	0900	Not filed.				
Prince George	0900	Not filed.				
Seattle	0900	140-10	190-25	210-31		
Patricia Bay	0900	160-10	170-20	200-27	220-30	220-32
Vancouver	1500	180-20	200-34			
Carmi	1500	Low Clouds - no observation.				
Prince George	1500	260-10	180-20	180-39	200-57	
Seattle	1400	200-20	210-31	220-44	220-47	230-38
Patricia Bay	1400	Low Clouds - no observation.				
Vancouver	2100	220-22	230-39	240-31	270-26	
Carmi	2100	Low Clouds - no observation.				
Prince George	2100	Not filed.				
Seattle	2100	200-20	210-22			

.....

DR J. C. Caul



CANADA

$$\frac{2378}{541}$$

AIRWAYS WEATHER RECORD

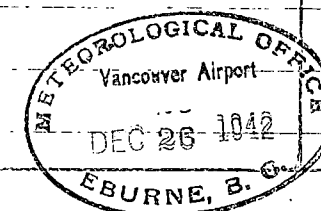
STATION.....PRINCE GEORGE.....

DECEMBER 20, 1942

FROM.....19..... TO.....19.....

[illegible]

*Standard time of station, _____ th Meridian



000483

AIRWAYS WEATHER RECORD

STATION: WILLIAMS LAKE DECEMBER 20, 1942

FROM 19 TO 19

[illegible]

*Standard time of station, _____ th Meridian.

000484

CANADA AIRWAYS WEATHER RECORD

STATION VANDERHOOF DECEMBER 20, 1942.

FROM 19..... TO 19.....

[illegible]

*Standard time of station, _____ th Meridan.



A. R. McCanler

Official in charge of Station

000485

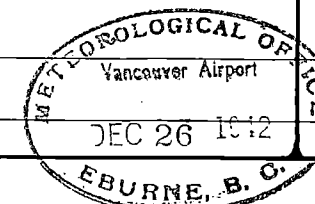
CANADA AIRWAYS WEATHER RECORD

STATION **KAMLOOPS** **DECEMBER 20, 1942.**

FROM.....19..... TO.....19.....

[illegible]

*Standard time of station, _____ th Meridan.



Chas. R. McAuler

Official in charge of Station

000486

AIR SERVICES, METEOROLOGICAL DIVISION

CANADA

2378
3-41

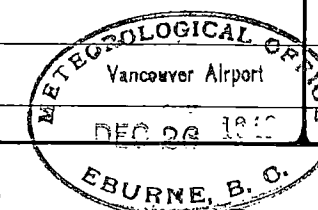
AIRWAYS WEATHER RECORD

STATION **LILLOOET** **DECEMBER 20, 1942**

FROM 19..... TO 19.....

DATE (1)	TIME (Standard) (2)	R S C (3)	N (4)	CEILING (100's of feet) (5)	SKY CONDITION (6)	Visibility (miles) (7)	GENERAL CONDITION OF WEATHER AND OBSTRUCTIONS TO VISION (8)	PRESSURE (sea-level) millibars (9)	Temper- ature °F (10)	Dew- point °F (11)	WIND direction and speed (12)	ALTIMETER SETTING inches (13)	TEND- ENCY app (13a)	CLOUDS			REMARKS (17)	OBSERVER (18)
														Lower (14)	Middle (15)	Upper (16)		
	0630			0	X	2	R-		59	37	N2	970					SKY OBSCURED BY RAIN	
	0730			E45	⊕	5	R-		58	38	C	971						
	0830			E50	⊕	20		074	58	38	C			CU+ SC6	AS4		RAIN IN LAST HOUR	
	0930			E70	⊕	8+	R-		57	36	C	971						
	1030			E45	⊕	8+	R-		59	39	C	970						
	1130			E45	⊕	20		066	40	39	W15			CU+ SC7			RAIN IN LAST HOUR	
	1230			45	⊕	8+			45	37	W15	965						
	1330			50	⊕	8+			45	9+	W15	961					SW IN DISTANCE	
	1430			70	⊕	10		029	46	35	S15			CU & SC7	AC2		PCPN WITHIN SIGHT	
	1530			70	⊕/⊕	8+			46	9+	S10						RW- IN DISTANCE	
	1630			UNL	⊕/NO	8+			44	36	N5	956					RW IN DISTANCE	
	1730			UNL	⊕/600	8+		020	44	36	NE5			CU SC1	AC5			
	1830			70	⊕	8+			44	9+	NE5	936						

*Standard time of station, _____ th Meridan.



E. J. Canby
Official in charge of Station

000487

AIR SERVICES, METEOROLOGICAL DIVISION

CANADA

2378
3-41

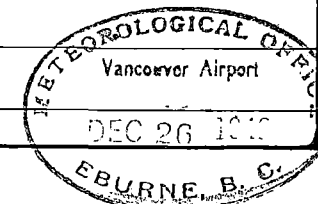
AIRWAYS WEATHER RECORD

STATION **KLEENA KLEENE** **DECEMBER 20, 1942**

FROM 19 TO 19

DATE (1)	*TIME (Standard) (2)	R S C (3)	N (4)	CEILING (100's of feet) (5)	SKY CONDITION (6)	Visibility (miles) (7)	GENERAL CONDITION OF WEATHER AND OBSTRUCTIONS TO VISION (8)	PRESSURE (sea-level) millibars (9)	Temper- ature °F (10)	Dew- point °F (11)	WIND direction and speed (12)	ALTIMETER SETTING inches (13)	TEND- ENCY app (13a)	CLOUDS			REMARKS (17)	OBSERVER (18)
														Lower (14)	Middle (15)	Upper (16)		
	0630			UNL	⊙/	8+			19	19	C	940						
	0730			UNL	⊙	8+			16	16	NW2	938						
	0830			0	X	0	F+	992	18	18	C						FOG, SKY NOT DISCERN- IBLE, HAS BEEN THICKER DURING LAST HOUR	
	0930			30	⊕	8+			20	20	SW2	932						
	1030			20	⊕	8+			22	22	C	930						
	1130			E20	⊕	10		975	23	23	C			SC10			8 INCHES OF SNOW ON GROUND	
	1230			20	⊕	8+			26	26	NE2	929						
	1330			0	X	1 1/4	S+		28	28	N2	931						
	1430			0	X	0	S+	979	30	29	SW3							
	1530			UNL	⊙/MO	8+			32	30	SE2	930						
	1630			UNL	⊙/	8+			29	29	C	930						
	1730			UNL	⊙/	5	GF	983	23	23	S3		403	SC FEW	AC6		GF HAS BECOME THICKER LAST HOUR	
	1830			UNL	MO	8+			24	24	SE5	932						

*Standard time of station, _____ th Meridan.



W. J. Caulley

Official in charge of Station

000488

$$\frac{2378}{341}$$

CANADA

AIRWAYS WEATHER RECORD

STATION..... BOSTON BAR DECEMBER 20, 1942

FROM 19 TO 19

[illegible]

*Standard time of station, _____ th Meridian.

METEOROLOGICAL OFFICE
Vancouver Airport
DEC 26 1942
ESBURN, B. C.

000489

AIRWAYS WEATHER RECORD

STATION... PRINCETON

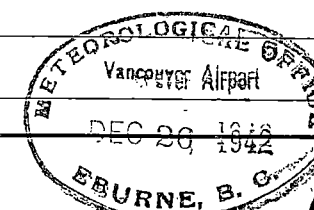
DECEMBER 20, 1942.

FROM 19.....

TO..... 19

[illegible]

*Standard time of station, _____ th Meridan.



Official in charge of Station _____

000490

CANADA

2378

3-41

AIRWAYS WEATHER RECORD

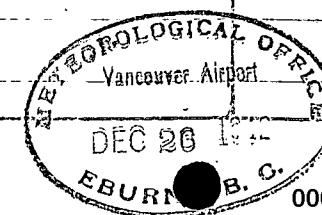
STATION.....HOPE

DECEMBER 20 1942

FROM.....19..... TO.....19.....

[illegible]

*Standard time of station, _____ th Meridan.



000491

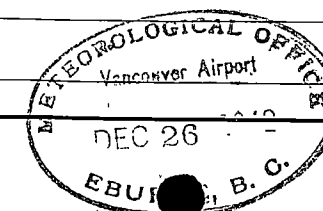
AIRWAYS WEATHER RECORD

STATION **CHILLIWACK** **DECEMBER 20, 1942**

FROM.....19..... TO.....19.....

[illegible]

*Standard time of station, _____ th Meridan.



Official in charge of Station

000492

AIRWAYS WEATHER RECORD

STATION **ROCK BAY DECEMBER 20, 1942.**

FROM.....19..... TO.....19.....

[illegible]

*Standard time of station, _____ th Meridan.



Official in charge of Station

000493

AIR SERVICES, METEOROLOGICAL DIVISION

CANADA

2378
3-41

AIRWAYS WEATHER RECORD

STATION VANCOUVER DECEMBER 20, 1942.

FROM 19 TO 19

DATE (1)	TIME (Standard) (2)	R S C (3)	N (4)	CEILING (100's of feet) (5)	SKY CONDITION (6)	Visibility (miles) (7)	GENERAL CONDITION OF WEATHER AND OBSTRUCTIONS TO VISION (8)	PRESSURE (sea-level) millibars (9)	Temper- ature °F (10)	Dew- point °F (11)	WIND direction and speed (12)	ALTIMETER SETTING inches (13)	TEND- ENCY app (13a)	CLOUDS			REMARKS (17)	OBSERVER (18)
														Lower (14)	Middle (15)	Upper (16)		
0625	R			60	⊕	15		103	47	42	SSE8	982		SC10			BRKS	
0658	C			85	⊕	15					SSE10			SC10				
0725	R			70	⊕	15		108	46	43	S8	984		SC10				
0800	C			75	⊕	15					S10			SC10			BRKS	
0825	R			E75	⊕	15		109	47	43	S8	984	204	SC7	5009		FEWCU	
0900	C			E75	⊕500	15					SE7			CU1SC5				
0920	C			E75	⊕500	15					SE13							
0921	S			E75	⊕500	15	RW-				SE12			FS1SC5			SC IN LYRS FS AT 800	
0925	R			E75	⊕/⊕	15	RW-	115	47	43	SE16	985		FS1SC5	AC1		FS AT 800	
0959	C			E35	⊕/⊕	15	RW-				SSE11							
1025	R			E45	⊕/⊕	15	RW-	116	47	45	SSE20	986		FS1SC7	AC1		FS AT 800 SC LYRS	
1055	C			E35	⊕/⊕	6	R-K-				ESE8			FS1SC7NS2			FS AT 800	
1150	R			E45	⊕150	15	RW-	113	47	45	SE12	985		FS1SC1NS8			FS 2-8 HND BRKS S-W	
1225	S			UNL	⊕/450	15		107	49	45	SSE13	983		SC2	AS8		FEW FS AT 800 BRKS	
1325	S			E25	⊕	15	RW-	103	49	46	S20-	981		SC10			CIG RGD PCPN VRY LGT	
1355	C			E25	⊕/⊕	15	RW-				SSE12			SC8	AS2		BRKS PCPN VRY LGT	
1425	S			E60	⊕⊕	15	RW ³	098	48	43	SSW22-	966	808	SC9	AC1		PCPN VRY LGT BRKS SCUD ALG MTNS N	
1455	S			E60	⊕⊕	15					SSW 21-			SC9	AC1		BRKS	
1525	R			E60	⊕150	15		099	47	43	S17	981		FC1SC9			BRKS	
1555	C			E50	⊕150	20					ESE19			FC1SC9				
1625	R			E60	⊕20 ⊕	20		103	47	43	SSE18-	984		SC10			BRKS	
1655	C			E60	⊕	15					S22			SC10			BRKS FC ON MTNS E 15H	
1715	R			E50	⊕150	25		100	47	43	S24-	981	401	FC2SC8			BRKS	
1755	C			E50	⊕150	20					S19			FC1SC9			BRKS	
1825	R			E60	⊕	20		104	46	43	S18	983		SC8			FC ON MTNS E15	

*Standard time of station, _____ th Meridan.

Official in charge of Station

000494

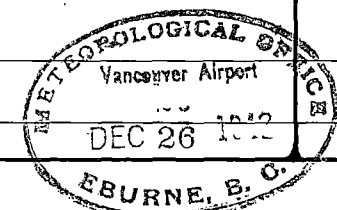
AIRWAYS WEATHER RECORD

STATION... VANCOUVER DECEMBER 20, 1942.

FROM 19..... TO 19.....

[illegible]

*Standard time of station, _____ th Meridan.



A. R. McCauley

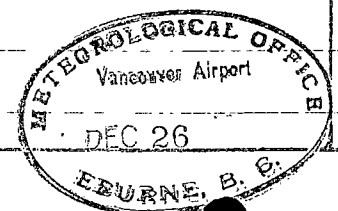
Official in charge of Station

000495

AIRWAYS WEATHER RECORD

STATION.....**QUESNEL**.....**DECEMBER 20, 1942**.....

FROM.....19..... TO.....19.....

[illegible]

CANADA AIRWAYS WEATHER RECORD

FROM.....19..... TO.....19.....

METEOLOGICAL OFFICE
Vancouver Airport
26 1912
EBURNE, B. C.

B. R. M. C. C. C.

000497

91

EXHIBIT K.

Weather Reports received at Fort St. John from Vancouver and Quesnell, 13:30 hrs - 19:30 hrs.

93

EXHIBIT L.

Aircraft and Engine Inspection Reports, December 9th
and December 12th, covering Nos. 1, 3 and 5 checks.



96
A general discussion followed. Those taking part were:

Grant McConachie
Cy Becker
C. R. Robinson
H. Hollick-Kenyon
Dr. Howe, of the Meteorological Branch, Edmonton.
Mr. Busse, of the Radio Range Department, Edmonton.

Dr. Howe was questioned as an expert witness, as follows:

Q. #1 - Have you any general expressions of opinion?

A. Communication between St. John and Vancouver is dependent entirely on short wave. I don't know of any long wave traffic between the Department of Transport, Prince George and Vancouver.

Q. #2 - Is it conducted on Canadian Pacific Air Lines frequency.

A. They conduct their own short wave frequency.

Mr. Busse was also questioned as an expert witness, as follows:

Q. #1 - The Department of Transport station at St. John may communicate with Vancouver and Prince George on 5390 kcs. Is that correct?

A. Yes. On Department of Transport and Pan American.

Q. #2 - Is it a satisfactory system?

A. It is not completely satisfactory, because of the limitations of short wave.

Q. #3 - What about the amount of traffic.

A. Quite heavy for one channel of phone, including the aircraft that are handled on that frequency. The chief difficulty there being that weather has to be handled between Prince George, Department of Transport station, and the Pan American station, and Vancouver, and congests that channel to a certain extent at that time.

Dr. Howe -

Q. #3 - We have had the suggestion that spot weather reports on the North West route from Prince George are not always dependable. Have you any comments to make?

A. The reports received from the stations you mention are all in secret code, since they have to go by radio, and the codes now in use are two, - one standard U.S. Weather Bureau code in use all over the continent, which leaves out certain elements which are quite important for mountain flying. They don't allow us to indicate whether or not there are breaks in the overcast or indicate the height of any low scattered clouds. Since the scattered clouds are quite often very variable, the pilot approaching an airport may consider it constitutes a ceiling and before he lands finds the report received from the ground indicates a ceiling given by a higher layer, which may be unlimited.

Q. #4 - Is this limitation in the code system necessary? 96

A. Any code system has to be simple and this particular code was adopted to give information to aircraft on other routes as well. There is no regular schedule of weather from Vancouver to Fort St. John, because the only frequency available is used by aircraft. Instead the reports are sent by teletype to Edmonton and they are coded and sent to Fort St. John into the Prince George Range station.

Q. #5 - How much time does this take?

A. Including the decoding at Fort St. John, not more than an hour. The reports between Prince George and Vancouver, are collected by the Government Telegraphs at Vancouver, along the Fraser river. Because of the crowding on the teletype circuits, they often don't reach Edmonton in time for relay to Fort St. John so that they would be of any use at St. John.

Q. #6 - What priority is given to weather sequences on your long wave system?

A. They get first priority if they are on schedule broadcast. Notices to airmen and Special reports and extremely urgent messages receive a high rate; - second to schedule broadcast. The priorities are practically identical with that of the teletype.

Mr. McConachie was questioned as a material witness, as follows:

Q. #1 - The Board would like to have the substance of your remarks in general discussion relating to transmission by long wave between Prince George and Vancouver.

A. The situation between St. John and Prince George would be considerably improved when we occupy the new field, but the situation between Vancouver and Prince George remains the same. The only way we can see that this can be helped is by installing an intermediate long wave station between Vancouver or Princeton and Prince George.

Mr. C. R. Robinson, on behalf of the Air Line Pilots' Association, suggested that authority be obtained to send or receive messages relating to weather, to or from aircraft, in the clear, when an emergency is anticipated.

Mr. Victor Fox, Canadian Pacific Air Lines pilot, recommended that the tower be authorized to transmit weather in the clear on 278 kcs. on request.

Dr. Howe recommended that pilots discuss weather conditions with the Meteorological service after a flight.

Mr. Kenyon stated that it is within the power of the Fort St. John dispatcher to dispatch any trip within the area he controls, which includes Prince George. On arrival at Prince George should there be no clearance awaiting the trip, and in the opinion of the flight officers the conditions are favourable, the captain may exercise his discretion in continuing the flight.

Edmonton, Alberta,
January 2, 1943.