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Staff Sqdn. Edmonton

No 903

U. S. AND BRITISH  
**CONFIDENTIAL**



# AIR ROUTE MANUAL

U. S. ARMY AIR FORCES

## UNITED STATES TO ALASKA

JANUARY 21, 1944

### CAUTION

This publication is compiled from the latest and most reliable information available in this office. However, conditions change rapidly and pilots are advised to obtain the latest information at each point of departure for the next leg of the flight.

OFFICE OF THE  
ASSISTANT CHIEF OF AIR STAFF, INTELLIGENCE  
WASHINGTON, D. C.

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4<sup>TH</sup>  
ISSUE

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### SECURITY

It will be the responsibility of the commanding officer of each plane to insure that all classified material is safeguarded at all times. When such material is not actually under the surveillance of a member of the crew, it will be placed in a safe, a combination lock file cabinet, or other adequate place for safe keeping.

If the plane is forced down in enemy territory, classified material will be destroyed by burning. Similar action will be taken if the plane is forced down in neutral territory and capture and internment seems imminent. If the plane is forced down at sea, classified material will be sunk by the most practicable method. This procedure is in accordance with the provisions of paragraph 19 of AR 380-5.

The destruction of obsolete issues may be carried out upon receipt of new editions by each squadron, group, or other headquarters. Destruction will be carried out as provided for in paragraph 23, AR 380-5, upon orders of unit commanders. Certificate of destruction will be filed with unit records except where higher headquarters direct otherwise.

# PREFACE

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This edition of the manual supersedes the Third Issue dated May 1, 1943, and represents a complete revision thereof. The present edition is generally enlarged in scope and detail, and at the same time, compressed in terms of Edmondson-Annett of the 3,100-mile Minneapolis-to-Edmondson-Annett.

The points of origin for the air routes to Alaska are Great Falls, Montana and Seattle, Washington. Starting from these two authorized clearing stations, the air routes described herein are established and accepted lines for either contact or instrument flight.

The manual is divided into several general sections as shown in the table of contents.

A route and distance map with hypsometric lines is included within the route information section, and shows all the routes included in this edition. Although primarily designed as an index, the map should prove useful for many purposes such as over-all planning and supplying a general topographical picture of the area. The map is prepared on a Lambert conic conformal projection on a scale of 1:5,000,000. It is accurate within the possibilities of the scale, but is not intended as a substitute for larger scale aeronautical charts.

Distances shown on the map and in the course and distance table are computed from radio range to radio range except in one instance at Juneau where the airport is the point of calculation.

A radio index map indicates by symbol all aeronautical radio aids along the routes except radar and special high frequency equipment. A chapter listing all operating frequencies for control towers, radio aids, radio beacons, ranges and D/F facilities is included. Along the route Great Falls to Fairbanks and throughout Alaska, the Army Airways Communication System is the primary aeronautical communication agency. On other routes communication facilities in use are those of the Royal Canadian Air Force, the U. S. Army, the Civil Aeronautics Administration or the Canadian Department of Transport. All stations operate on normal A. C. S. frequencies, and no difficulty with communications should be experienced. Radio range facilities are present almost everywhere along the main routes.

Let-down procedures approved by JAN-CAN (Joint U. S. Army, Navy - Canadian Aircraft Movements Agreement) are in effect at a majority of those airports having radio range facilities. Where JAN-CAN did not establish a standard let-down procedure, the one in use by Northwest Airlines, the Naval Air Transport Service or the Trans Canada Airlines is shown. Although based checks, let-down procedures should be used with terrain and in areas where radio ranges are not available. Further, it should be noted that the airline procedure is based on a cruising speed of 120 miles per hour and adjustments must be made for aircraft unable to cruise at this speed.

Descriptions of the main airports are grouped together in alphabetical order. Each main airport description includes a detailed drawing of the field, a vicinity sketch including radio range let-down procedure and profile and an oblique photograph of the field. The main airport group is followed by an alphabetical listing of supplementary fields. The latter list includes all additional airports of a size suitable for use by military aircraft and located within emergency operating distance of the routes. Only insignificant emergency fields are excluded.

Generally, it is necessary to fly on instruments much of the time along these routes. The only important route for flying contact or pickup up the Alaska Highway at Dawson Creek or Fort St. John and follows it to Northway. Beyond Northway, the Highway coincides with the direct air route to Fairbanks.

The information contained herein represents the latest data within the CONFIDENTIAL classification available at Headquarters, Army Air Force, corrected to the date shown on the cover. The information, basically from military sources, is supplemented by reports received from various Naval Commands, Northwest Airlines and official Canadian publications. The "Weather Summary" was prepared by the Weather Information Branch and the "Survival" section by the Arctic, Desert and Tropic Information Center.

To supplement the information available in this manual the following complementary publications published by the Assistant Chief of Air Staff, Intelligence should be consulted:

AIR ROUTE MANUAL:  
Alaska Interior Routes - Feb. 20, 1943

AIR PILOT MANUAL:  
Aleutian Islands - April 2, 1943

AIRPORT DIRECTORY:  
Canada and North Atlantic Islands - December 17, 1942

AIRPORT INDEXES:  
Alaska - October 12, 1943  
Aleutian Islands - October 12, 1943

Other publications which an airman should consult or obtain for his personal information are:

"Pilots' Information File" AAF Regulation No. 62-15

"GIBES", Pamphlet No. OPNAV-RC077 published by the Office of the Vice Chief of Naval Operations.

For the purpose of expediting corrections or additions to the manual from the field, a section of perforated correction sheets is included at the end of the manual. All users of the manual are requested to make maximum use of these sheets.

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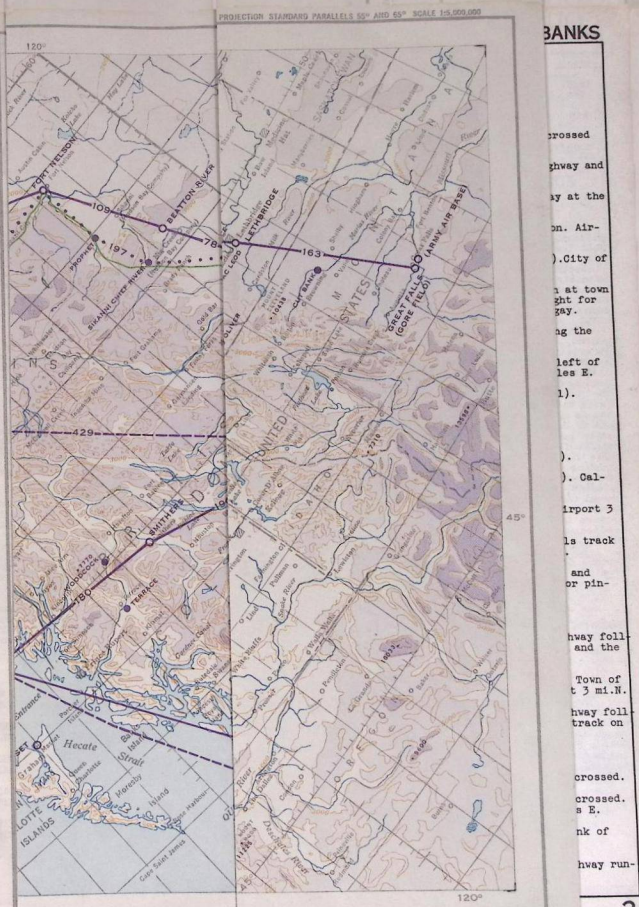
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# COURSES AND DISTANCES

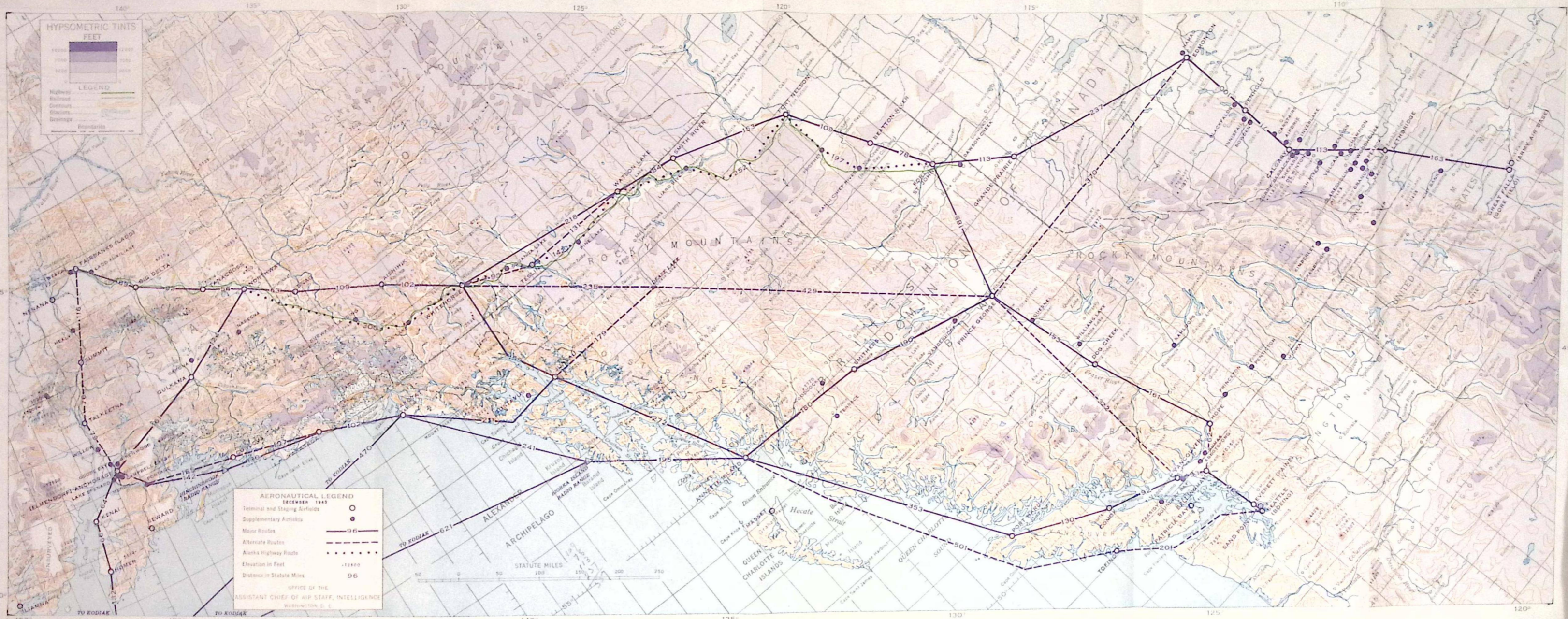
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FROM	TO	COURSE		MILES	FROM	TO	COURSE		MILES		
		TRUE	MAG.				TRUE	MAG.			
AINSHRIK	SNAG	300°	266°	109	85	JUNEAU	ANNETTE IS.	151°	121°	272	236
AINSHRIK	WHITEHORSE	130°	102°	102	85	JUNEAU	CAPE SPENCER	237°	206°	95	74
ANCHORAGE	GULKANA	136°	105°	40	35	JUNEAU	DEASE LAKE	91°	60°	173	156
ANCHORAGE	FOFAGE	136°	105°	40	35	JUNEAU	HAINES	307°	276°	40	35
ANCHORAGE	TALKEETNA	340°	314°	29	25	JUNEAU	BIG DELTA	68°	37°	621	409
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	KODIAK	75°	47°	70	62
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	ANCHORAGE	351°	309°	113	98
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	GREAT FALLS	158°	127°	165	142
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	DUNDEESS	103°	70°	68	52
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	TOFINO	312°	298°	74	65
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	GULKANA	243°	212°	124	108
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	NEAR BAY	206°	174°	54	47
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	NORTHWAY	130°	98°	63	55
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	SNAG	181°	158°	71	62
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	07°	34°	100	87
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	PENHOLD	316°	289°	40	35
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	102°	74°	121	105
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	PORTAGE	320°	305°	353	307
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	PORTAGE	180°	90°	130	113
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	ANNETTE IS.	180°	90°	130	113
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	ANNETTE IS.	318°	286°	429	373
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	93°	66°	153	133
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	174°	147°	370	322
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	230	354°	185	161
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	290°	261°	190	165
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	189°	157°	322	280
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	351°	330°	96	83
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	318°	292°	57	50
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	288°	254°	84	73
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	110°	81°	190	165
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	118°	84°	153	133
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	265°	357°	76	66
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	120°	86°	109	95
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	301°	277°	92	80
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	03°	77°	353	296
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	108°	74°	84	73
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	279°	246°	218	189
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	310°	277°	102	89
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	119°	90°	226	207
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	188°	156°	107	93
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	09°	66°	218	189
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	281°	250°	108	94
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	111°	81°	102	89
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	141°	111°	241	209
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	129°	92°	113	124
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	227°	207°	470	409
ANCHORAGE	BIG DELTA	300°	266°	195	169	JUNEAU	EMMONTON	291°	261°	102	89



BANKS

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**HYPOMETRIC TINTS**  
FEET

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5000
2500
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**LEGEND**

Highways  
Railroads  
Contours  
Glaciers  
Drainage

**AERONAUTICAL LEGEND**  
DECEMBER 1943

Terminal and Staging Airfields	○
Supplementary Airfields	●
Major Routes	— 96 —
Alternate Routes	- - - 96 - - -
Alaska Highway Route	.....
Elevation in Feet	12000
Distance in Statute Miles	96

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## ROUTE INFORMATION - GREAT FALLS TO FAIRBANKS

## GREAT FALLS TO EDMONTON

447 STATUTE MILES

An interlocking system of radio ranges forms an excellent radio beam path between Great Falls and Edmonton. This area, unlike the remainder of the route to Fairbanks, is well mapped and not lacking in good pin points for contact flying.

From Great Falls to Lethbridge, the track is over sparsely settled, fairly low, rolling country averaging 4,000 feet in altitude and criss-crossed by a network of highways, railroads and small streams. Towns are small and dispersed thinly along the railroads, while the countryside is mostly pastoral and agricultural in nature with widely scattered ranches. Fairly level grain fields are usually found in small valleys near the ranch buildings and if a forced landing is necessary, these fields will be more satisfactory for a wheels down landing than open pasture land.

Flat plateau country between 3,000 and 3,500 feet in altitude, is typical between Lethbridge and Calgary. The Canadian Pacific Railroad runs between these two points and may be followed with little sacrifice in distance. There are numerous landing fields in the Calgary area, with 4 fields lying close to the city. The best of these fields is Calgary Municipal, about 3 miles NE of town. A marked similarity in appearance of the fields in this area may cause confusion as most of these fields are training stations for the R.C.A.F. Caution should be observed in this area because of the large number of planes in the air.

The railroad continues from Calgary to Edmonton, keeping to the west of the track for the first half of the distance, and to the east of the track for the latter half. The terrain is low, fairly level, and north of the Red Deer River a great many lakes are in evidence. Edmonton is very conspicuous from a distance and like the other large cities in this area, is situated on a large river, the Saskatchewan.

The countryside between Lethbridge and Edmonton is agricultural in nature with many large open fields of grain and meadow. Many training fields are scattered along this section of the route.

MINIMUM INSTRUMENT ALTITUDES

	N.BOUND	S.BOUND	EMERGENCY
GREAT FALLS to EDMONTON (DIRECT)	11,000'	10,000'	*
GREAT FALLS to LETHBRIDGE	9,000'	8,000'	
LETHBRIDGE to CALGARY	7,000'	6,000'	4,500'
CALGARY to PENHOLD	7,000'	6,000'	4,500'
PENHOLD to EDMONTON	7,000'	6,000'	4,500'

\* Not official. Check these figures at station of departure.

CONTACT FLIGHT DESCRIPTION

N.BOUND MILEAGE	S.BOUND MILEAGE	LANDMARKS
0	450	Great Falls
59	391	RR running N/S (Mag.) crossed at town of Ledger.
80	370	RR with paralleling highway and running E/W (Mag.).
152	298	RR with crossing highway at the town of Raymond.
162	288	Lethbridge Range station. Airport 4 mi. W.
168	282	RR running NE/SW (Mag.). City of Lethbridge 2 miles W.
202	248	RR and highway junction at town of Carmangay. RR in sight for five miles S of Carmangay.
235-240	210-215	RR follows closely along the track.
240	210	RR forks to right and left of track. Small lake 7 miles E.
254	196	Third Lake (quite small).
257	193	Bow River.
266	184	RR running E/W (Mag.).
269	181	RR running NE/SW (Mag.).
277	173	RR running NE/SW (Mag.). Calgary 8 miles W.
280	170	Calgary Radio range. Airport 3 miles W.
280-305	145-170	RR and highway parallels track along a line 4 miles W.
280-345	105-170	Numerous small streams and lakes, none suitable for pin-pointing.
345	105	Town of Innisfail.
345-350	100-105	RR and paralleling highway followed between Innisfail and the Penhold Range station.
350	100	Penhold Range station. Town of Penhold 1/2 mi. E. Airport 3 mi. N.
350-373	77-100	RR and paralleling highway follows roughly along the track on a line 2 to 5 miles E.
356	94	RR crossed.
365	85	RR running E/W (Mag.) crossed.
373	77	RR running E/W (Mag.) crossed. Town of Lacombe 5 miles E.
390	60	Ponoka Airport on W bank of Battle River 1 mile E.
428	22	RR and paralleling highway running E/W (Mag.).

# ROUTE INFORMATION - GREAT FALLS TO FAIRBANKS

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N. BOUND MILEAGE	S. BOUND MILEAGE	LANDMARKS
0	242	Edmonton.
138-144	222	RR running E/W (Mag.) angles sharply across the track.
150	192	Pemina River. Distinguished from the other streams in this vicinity by the E/W direction of the valley. Other streams run N/S.

## EDMONTON TO GRANDE PRAIRIE

237 STATUTE MILES

The northwest leg of the Edmonton range is projected directly along the route and the south-west leg of the Grande Prairie range interlocks with the northwest leg of Edmonton. Under normal conditions, radio navigation can be maintained between these two points and it is recommended that pilots avail themselves of these facilities although flights may be proceeding contact.

For the first fifty miles northwest of Edmonton, the terrain is flat to rolling, extensively cultivated, and with a few small communities located throughout the area. The route follows closely the path of the Canadian Pacific Railroad to White Court, where the RR terminates at the junction of the Saravastman, McLeod and Athabasca Rivers. For the next 150 miles, the country is uninhabited, forested and uncultivated, and no railroads or highways are observed. Emergency landings over this area would be extremely difficult and rescue parties would have considerable difficulty in getting to the site of the landing. Just prior to reaching Grande Prairie, the country flattens out and is extensively cultivated, with a few small communities located around the immediate vicinity at Grande Prairie. Most charts of this area are not accurate, and rivers indicated on these charts are not to be relied upon as landmarks.

No intermediate fields are available for the entire distance between Edmonton and Grande Prairie.

### MINIMUM INSTRUMENT ALTITUDES

N. BOUND	S. BOUND	EMERGENCY
GRANDE PRAIRIE to EDMONTON	7,000'	6,000', 5,000'

### CONTACT FLIGHT DESCRIPTION

The best contact procedure will require the pilot to establish a heading at cruising altitude while still receiving the NW leg of the Edmonton Grande Prairie range and then holding this course until the landmarks are found along the rhumb line track between the Edmonton and Grande Prairie range stations.

N. BOUND MILEAGE	S. BOUND MILEAGE	LANDMARKS
70	172	RR running NE/SW (Mag.).
85	157	Athabasca River with RR paralleling about 2 miles S.
145	97	Joseph Lake (quite large) 5 miles W.
155	87	Giroux Lake (very small) on course.
242	0	Grande Prairie range station. Airport 2 mi. NW. Town 2 mi. NE.

## GRANDE PRAIRIE TO FORT ST. JOHN

113 STATUTE MILES

The northwest leg of the Grande Prairie range is projected along this course and the southeast leg of the Fort St. John range, although it is not interlocked with the northwest leg at Grande Prairie, is sufficiently close to the magnetic bearing of this route to be used in the approach to Fort St. John. Under normal radio conditions, constant contact can be maintained with these two stations for navigation purposes.

For the first forty miles, the terrain is quite flat and extensively cultivated, with a few small communities located in the immediate vicinity of Grande Prairie. Several large lakes can be observed from the course and serve as landmarks to the pilot over this area. Beyond this point, the terrain rises slightly and becomes uninhabited and quite heavily timbered with the average height of the hills about 3,000 feet above sea level. This uninhabited hilly and timbered country continues to Fort St. John and although numerous streams and rivers cross the route, due to the inaccuracy of present charts, they are not to be relied upon for navigation purposes. Within the immediate vicinity of Fort St. John, limited cultivation will be observed and a few small communities are situated in the area. On this leg of the route, because of the rolling, hilly and timbered terrain, emergency landings would be difficult to effect safely.

The only intermediate field available between Grande Prairie and Fort St. John is a flight strip under construction at Dawson Creek.

### MINIMUM INSTRUMENT ALTITUDES

N. BOUND	S. BOUND	EMERGENCY
GRANDE PRAIRIE to FORT ST. JOHN	7,000'	6,000', 4,500'

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# ROUTE INFORMATION - GREAT FALLS TO FAIRBANKS

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CONTACT FLIGHT DESCRIPTION		MINIMUM INSTRUMENT ALTITUDES		
Contact flight is best conducted along the railroad to Dawson Creek where the Alaska Highway begins. The following check points are along this route and mileages given are for a course following closely along the RR and the highway.				
FORT ST. JOHN to FORT NELSON	N. BOUND MILEAGE	S. BOUND MILEAGE	EMERGENCY	
	5,000'	6,000'	4,500'	

CONTACT FLIGHT DESCRIPTION		MINIMUM INSTRUMENT ALTITUDES		
The Alaska Highway is used as a guide line for contact flights. The Sitikine Mtns. are on the west, and on the east is rather level forest land.				
N. BOUND MILEAGE	S. BOUND MILEAGE	LANDMARKS	N. BOUND MILEAGE	S. BOUND MILEAGE
0	134	Grande Prairie	0	218
13	121	Village of Wembley. Road leading S. Lake 3 miles NE.	5	213
24	110	Village of Beaver Lodge. Beaver Lodge River just W of RR.	88	130
35	99	Village of Hythe.	96	122
50	84	Village of Demit.	119-149	69-99
73	61	Village of Pouze Coupe.	150	68
79	55	Dawson Creek. Flight strip 1 1/2 miles S of RR yards.	196	22
99	35	Kiakatinaw River follows along highway, for about 5 miles.	213	5
110	24	Peace River and large suspension bridge.	218	0
125	9	Village of Taylor.		
134	0	Fort St. John.		

## FORT ST. JOHN TO FORT NELSON

187 STATUTE MILES

The northwest leg of the Fort St. John range is projected along the route and the southeast leg of the Fort Nelson range approximately interlock. Midway between these two stations is the new Beaton River Range, now operating but to be treated cautiously until sufficient flight checks have been made. Radio contact is easily maintained between these three stations and it is recommended that these radio facilities be used even during contact flights.

From Fort St. John to Fort Nelson, the terrain is chiefly hills, heavily timbered, averaging about 3,500 feet in height, with deep ravines and numerous streams and rivers. The territory is uncultivated and uninhabited with the exception of a few trappers and Indians trading with the Hudson Bay Company at Siksani. There are few landmarks with the exception of the rivers crossed on the route, and charts for this area are unreliable. Because of the nature of the terrain, emergency landings over this area would be difficult.

Beaton River is the only intermediate field available between Fort St. John and Fort Nelson. Several flight strips have been built along the Alaska Highway but are quite a distance west of the route.

## FORT NELSON TO WATSON LAKE

237 STATUTE MILES

The Smith River radio range bridges the long gap between Watson Lake and Fort Nelson. The legs of all three ranges are arranged to interlock furnishing a continuous radio bear channel for instrument flights. The signal might be weak midway between Smith River and Fort Nelson, but between Smith River and Watson Lake it will always be good. Use the Smith River range cautiously for a few months while the installation defects are corrected.

Immediately upon leaving Fort Nelson, the terrain rises rapidly, becoming mountainous with high ranges of the Rocky Mountains plainly visible in good weather, to the west. The route parallels this range the entire distance to Watson Lake with the average ground elevation between 4,000 and 6,000 feet above sea level. To the north and northeast, the terrain is much lower but the entire route over which this course is projected is rugged and mountainous. About 80 miles northwest of Fort Nelson, the route crosses the Liard River near the S end of the grand canyon of the Liard. Weather conditions over this area frequently are bad because of squall conditions due to the effect of the close proximity of the mountains. The charts are unreliable; however, the course of the Liard River is quite

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# ROUTE INFORMATION - GREAT FALLS TO FAIRBANKS

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S. BOUND MILEAGE	S. BOUND MILEAGE	LANDMARKS	N. BOUND MILEAGE	S. BOUND MILEAGE	LANDMARKS
		of highway. Between here and Northway is an area of numerous small lakes and streams.	190	61	Village of Richardson.
322	0	Northway Airport, about 6 mi. S of the Highway.	213	38	Village of Salchaket and Salchaket Lake.
			224	27	Village of Salcha.
			251	0	Ladd Field. (The civil airport, Weeks Field, is 2 miles W of Ladd Field).

## NORTHWAY TO FAIRBANKS

226 STATUTE MILES

The radio range beams are not as effectively interlocked on this run as on the previous routes. Good radio range coverage is available, but the on-course legs of each range intersect rather than interlock and a plane flying the beam will not be making a straight track from station to station. The Tanaseros range should be used for the route flight but is a good reserve station for use in case radio reception is poor on other stations.

The track runs down the Tanana River valley to Fairbanks. To the southwest the valley is narrow and quickly bounded by the 1,000 foot peaks of the Alaska Mountains. To the north the valley is broad and rises gradually to rolling hills with an average elevation of 5,000 feet. The river valley is a broad lowland near Northway but westward of Tanaseros it is a series of gorge connected basins. West of Big Delta the valley again broadens into wide alluvial flats. The entire length is heavily forested with occasional open parks.

Emergency landings are possible on sandbars in the rivers and on the Alaska Highway. The highway is preferable if a straight run of sufficient length is nearby.

### MINIMUM INSTRUMENT ALTITUDES

NORTHWAY to	N. BOUND		S. BOUND		EMERGENCY
	7,000'	8,000'	8,000'	6,000'	
BIG DELTA					1,500' Fly W side of leg.
BIG DELTA to FAIRBANKS	5,000'	6,000'		4,000'	

### CONTACT FLIGHT DESCRIPTION

The Alaska Highway and the Tanana River, running practically side by side, head straight for Fairbanks and are very easy to follow. Fairbanks is not actually situated on the Tanana River, but on the Chena, a tributary lying about 3 miles north. The radio route is almost coincident with the contact flight path which allows for a swift change from contact to instrument flight if necessary. Mileage given below is along the river.

N. BOUND MILEAGE	S. BOUND MILEAGE	LANDMARKS
0	251	Northway.
60	191	Tanaseros Range 4 miles S.
161	90	Big Delta Range 5 miles S.
171	80	Village of Big Delta.
185	66	Village of Tenderfoot.

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# ROUTE INFORMATION - SEATTLE TO ANCHORAGE

## SEATTLE TO VANCOUVER

129 STATUTE MILES

The route between Seattle and Vancouver is completely serviced by radio ranges. Bellingham radio is more reliable for homing than Vancouver. Radio beacons at Patos Island, west of Bellingham, and Point Anderson, northwest of Vancouver, operate automatically.

The track lies along the east side of the broad trough containing Puget Sound and passes alternately over land and water. The land crossed in flight is low and gives relief. It is checkerboarded by numerous clearings in the timber and dotted with settlements and farms connected by highways and railroads. High rugged mountains rise abruptly 10 to 20 miles on either side. Near Bellingham are hills more than 3,000 feet high, and Mt. Baker, 10,750 feet, is 30 mi. east. Between Bellingham and Vancouver the extremely flat low land of the Fraser River delta is crossed. Clearings are numerous, and a rectangular network of north-south and east-west roads connects settlements and farm houses. Immediately north of Vancouver are high rugged mountains. The shore just north of the International border has a number of wide flat beaches. These beaches, the large number of relatively flat clearings, and numerous airports provide possible sites for emergency landings.

### MINIMUM INSTRUMENT ALTITUDES

FAIRBANKS to	N. BOUND		S. BOUND		EMERGENCY
	5,000'	4,000'	2,500'	1,500'	
BELLINGHAM					2,500' Fly W side of leg.
BELLINGHAM to VANCOUVER	6,000'	5,000'		1,000'	

## VANCOUVER TO PORT HARDY

222 STATUTE MILES

Only that part of the route between Comox and Port Hardy is controlled by radio ranges. A crossing of the northwest leg of the Neah Bay range occurs over the Strait of Georgia. A bad weather radio signal from Vancouver may not be effective beyond Campbell River.

High rugged mountains lie on both sides of the over-water section of the route between Vancouver and Comox. Texada Island in the Strait of Georgia, has hills over 2,000 feet. All islands and most of the mainland are densely timbered. The track over Vancouver Island between Comox and Port Hardy starts across relatively low, partly cleared land with some highways and railroads. This terrain soon gives way to rugged, densely timbered mountains rising above 5,000 feet. The land around Port Hardy is low, relatively flat, and heavily timbered except for small local clearings and roads. Mt. Weddington

13,260 feet, lies about 90 miles northeast of the central part of this track, and with strong south or southeast wind at minimum emergency altitudes of 14,000 feet may be advisable. Emergency landing sites are sparse owing to rocky shores, rough topography, and dense timber. Landing as near shore as possible in lakes or the sea may be necessary. There are landing fields at Comox and Port Hardy.

### MINIMUM INSTRUMENT ALTITUDES

VANCOUVER to	N. BOUND		S. BOUND		EMERGENCY
	3,000'	2,000'	1,500'	1,500'	
COMOX					N side of leg.
COMOX to PORT HARDY	9,000'	10,000'		8,500'	Fly W side of leg.

## PORT HARDY TO ANNETTE ISLAND

353 STATUTE MILES

This section of the route is without radio ranges except in the immediate vicinity of Port Hardy and Annette Island. The northeast leg of the Masset range is crossed just northwest of Dundas Island. The Quatsino, Cape St. James, Dead Tree Point, and Langara Island beacons should normally have sufficient range to give satisfactory fixes. The Triple Island radio beacon is almost exactly on course south of Dundas Island and Mary Island radio beacons lies east of Annette. All radio beacons transmit automatically except Dead Tree Point, which keeps a watch on 500 kc. on week days from 0800 to 1800 and gives transmission upon request. The commercial radio station (RTHK, 930 kc.) in Ketchikan can be used for homing.

The track passes partly over water and partly over the maze of relatively rugged, densely timbered islands lying along the coast. Peaks on these islands rise to at least 3,500 feet, and the Coast Range on the mainland contains many sharp rugged peaks between 8,000 and 12,000 feet. The extremely irregular coastline is cut by a number of deep, narrow channels, some of which extend far inland. All the land except the high peaks is densely timbered, and the few bare spots are likely to be swampy or brushy. Graham Island is similar to the mainland. This region is not densely timbered, but has a number of lighthouses, fishing villages, paper mills, and lumber camps scattered along the coast. The serious passages and swamps are well traveled. Sites for emergency landings are sparse. The beaches are narrow and rocky for the most part, though the beach at Massett on Graham Island can be used if it is free of logs. Flat deltas at the mouths of rivers may be used but rugged topography in such areas is a hazard. Openings in the timber are likely to be brushy or swampy and hence suitable only for a wheels-up crash landing. Calm water in the sheltered channels and passages is favorable for ditching. Get as close to shore as possible but take care of off-shore rocks. The open coast opposite Queen Charlotte Sound has rougher seas. The nearest intermediate fields are at Massett and Lawson (under construction, Oct. 1943), on Graham Island.

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# ROUTE INFORMATION-SEATTLE TO ANCHORAGE

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## BIORKA ISLAND TO YAKUTAT

241 STATUTE MILES

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
PORT HARDY to ANNETTE	3,000*	2,000*	Do not pass Port Hardy S bound under 10,000

\* Check these altitudes with operations officer. Calbert Island has a peak 3,450 feet high close to flight course.

## SEATTLE TO ANNETTE ISLAND (OUTSIDE ROUTE)

692 STATUTE MILES

This alternate route for long-range ships is shown on the route map. The Seattle and Wash Bay ranges and the Dungeness Pan and Point Wilson range beacon provide good control for the southern part. A radio direction finder station is located at Fatook Inlet, Cape Flattery. A crossing of the southwest leg of the Port Hardy range and the Quatsino, Cape St. James, Dead Tree Point, Langara Island, and Triple Island range beacons afford fixes until the Annette Island range is approached. Dead Tree Point beacon must be called, 0800 to 1800 week days, on 500 kcs. Other beacons are automatic.

Weather is frequently more favorable along this route, and the topographic hazards are less. That part of the Olympic Peninsula crossed is relatively low though peaks only a few miles to the southwest are over 7,000 feet. The southwest side of Vancouver Island is rugged, with peaks between 4,000 and 5,000 feet within 10 miles of the shore. Even the low relatively flat areas are unsuitable for emergency landings owing to the numerous small islands. The coast near Vancouver Island is subject to essentially the same conditions as the Port Hardy - Annette section except for the relative greater safety afforded by a more seaward position. The track across Queen Charlotte Sound is subject to the dangers attending any open-sea crossing. Intermediate fields are located at Port Townsend, Port Angeles, Tofino, and Massett Lawson on Graham Island. Check with operations officer for proper instrument altitudes on this course.

## ANNETTE ISLAND TO BIORKA ISLAND

195 STATUTE MILES

The track is bounded on both sides by the Annette and Biorka Islands ranges but nowhere follows either. The Cape Decision radio beacon at the south tip of Kulu Island has a range of about 100 miles and operates automatically.

Prince of Wales, Eklis, and Baranof Islands are mountainous, and densely forested. Peaks on these islands may be seen on the course rise above timberline to altitudes greater than 4,500 feet. The shores are generally rocky and timber extend close to the water's edge. Practically all settlements on the islands are along the shore. Check with operations officers for instrument altitudes on this section of the route.

This section has good but not interlocking radio range control. A fix may be obtained about midway upon crossing the west leg of the Juneau range west of Cape Spencer. Cape Spencer radio beacon operates automatically with a normal range of 200 miles.

This is almost wholly an over-water flight along a high rugged coast. Mt. Edgecumbe, a symmetrical volcanic cone on Krusenof Island, provides a prominent landmark near the south end of the track. Baranof and Chichagof Islands are rugged with peaks between 4,000 and 5,000 feet. These islands are heavily timbered up to 2,500 feet. The mainland north of Cape Spencer consists of extremely rugged, high mountains clad in perennial ice and snow. Large glaciers fill the valleys and in some cases reach the sea. Mt. Fairweather, the highest peak in this section, rises to an altitude of 15,500 feet within 15 miles of the coast. The coastline north of Cape Spencer is relatively straight and is further characterized by a flat coastal foreland which appears near Icy Cape and widens progressively northward. Most of this flat is heavily timbered, but this section of the coast is spotted with a number of relative wide beaches which might be used for emergency landings. Bare spots in the timber are usually brushy or swampy, and the bare flats in front of glaciers are almost universally covered with boulders. Cape Spencer is notoriously foggy, and the radio range is so close to the coast farther north that a more seaward course may be advisable in bad weather. The coast between Cape Spencer and Yakutat is largely unsettled.

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
BIORKA to WEST LEG OF WEST LEG OF JUNEAU RANGE	7,000'	6,000'	4,000'
WEST LEG JUNEAU RANGE to YAKUTAT	3,000'	4,000'	500' fly SW side of leg.

BIORKA to WEST LEG OF WEST LEG OF JUNEAU RANGE

## ANNETTE ISLAND TO JUNEAU

272 STATUTE MILES

The first part of this route is controlled by the Annette Island range. Farther north the east leg of the Biorka Island range is crossed. The radio beacons on Five Finger Island and at Mt. 100-mile range operate automatically, with a normal range (KINY, 1460 kcs.) can be used for homing. The Juneau range station and the Sentinel Island radio beacon, operating automatically, are north of the city.

The track crosses an intricate maze of waterways and rugged islands northward of the land directly on the route is much higher than 4,000 feet, peaks in the islands to the

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# ROUTE INFORMATION-SEATTLE TO ANCHORAGE

west approach 5,000 feet, and many of the high points in the Coast Range of the mainland are between 8,000 and 11,000 feet. The Coast Range is extremely rugged and from Petersburg north contains a number of large glaciers. Timber cover is dense below 2,500 feet. Heather, grass, and stunted brush extend up to 4,500 feet. Natural openings in the forest are likely to be swampy or very brushy. The coastline is extremely irregular, rocky and abrupt, with cliffs rising a thousand feet or more directly from the sea. Valleys tend to be wide and open, but their flat floors are commonly swampy and heavily timbered. Lakes are numerous. Broad, flat deltas at the mouths of the rivers or bays along the rivers may provide sites for emergency landings. Beaches could be made on Farm Island near Wrangell. Hitching of the coast or in the sea close to shore may be necessary, for beaches are not generally satisfactory. This is the most thickly populated part of Alaska with several major towns and a number of fishing villages, canneries, and native settlements. The waterways are well traveled.

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
ANNETTE ISLAND to JUNEAU	9,000'	8,000'	6,000'

ANNETTE ISLAND to JUNEAU

## JUNEAU TO YAKUTAT

228 STATUTE MILES

The southwest leg of the Juneau range can be used for all or part of the distance to Cape Spencer depending upon weather. Cape Spencer radio beacon, with a normal range of 200 miles, operates automatically. After Cape Spencer is rounded, the Yakutat range can be picked up just beyond Lituya Bay.

The terrain between Juneau and Cape Spencer is similar to that between Juneau and Annette. High, rugged, snow- and ice-capped mountains lie immediately east of Juneau. The islands and land west of Juneau are rugged but lower with peaks between 4,000 and 5,200 feet. Some of the land north of Icy Strait is low, but most areas beneath 2,000 feet altitude are heavily timbered. Native settlements, fishing villages, and canneries are located near shore, mostly on Chichagof Islands. Icy Strait and Cross Sound are well-traveled waterways. Northwest from Cape Spencer the conditions are identical with those described for the Biorka Island to Yakutat route. Check with operations for minimum instrument altitudes, Juneau to Cape Spencer. From Cape Spencer to Yakutat they are 3,000 feet northbound and 4,000 feet southbound. The Yakutat range is exposed to the southwest side of the Yakutat leg.

## YAKUTAT TO ANCHORAGE

371 STATUTE MILES

The Yakutat, Yakataga, Hinchinbrook, and Anchorage ranges provide good control between Yakutat and Anchorage, although they are not all perfectly aligned on the track. The radio beacons at Cape St. Elias and Cape Sabine are operating automatically, and the Cordova local-

izer afford additional fixes. The commercial station (KFDQ, 790 kcs.) in Anchorage, may be used for homing.

From Yakutat to Cordova the terrain is similar to that between Cape Spencer and Yakutat. High rugged ice- and snow-capped mountains lie close to the coast. Mt. St. Elias, over 18,000 feet, is 35 miles northeast of the track. The flat coastal foreland extends as far east as Copper River delta. Great glaciers flow down from the mountains and spread out on this foreland to form broad ice fields of which the Malaspina and Bering glaciers are two of the largest. The shoreline remains low and relatively simple with some wide flat beaches. Much of the flatland is heavily timbered, and those parts free of trees are likely to be swampy or covered by boulders and gravel. The great Copper River delta, with its many intersecting channels, indicates the approach to Cordova. Beyond Cordova the terrain changes. The coastline becomes highly irregular, there are many islands, and the land rises abruptly from the shore to rugged snow- and ice-capped peaks 6,000 to 12,000 feet high. Glaciers are abundant and many extend to the sea. The islands in Prince William Sound are partly bare and rocky. None near the course exceeds 3,000 feet. The track passes onto the mainland again near the town of Whittier, the terminus of the new cut-off from the Alaska Railroad at Portage. Between Whittier and Anchorage the country is rough, with peaks 6,000 to 8,000 feet high near the course. From Portage the railroad or the radio range can be followed to Anchorage. The area around Anchorage is low and flat with a considerable number of clearings in the timber. Small settlements and a few larger towns are scattered along the route between Yakutat and Anchorage. They are chiefly on the coast or along the railroad. Contact flying over the water between Yakutat and Cordova is reported to be feasible with many beaches available for emergency landings and numerous landings such as Malaspina and Bering glaciers, Icy Bay, Cape St. Elias, and Copper River delta. Beyond Cordova aircraft may have to be ditched near shore in emergency although in some places, wide mud flats suitable for a wheels-up crash landing are exposed at low tide. Intermediate fields are located at Yakataga, Cordova, Valdez, and Portage.

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
YAKUTAT to YAKATAGA	5,000'	4,000'	1,000' fly S side of Mt. Kat. leg.
YAKATAGA to CORDOVA	5,000'	6,000'	4,000'
CORDOVA to ANCHORAGE	11,000'	10,000'	8,000' fly SW side of leg.

YAKUTAT to YAKATAGA

YAKATAGA to CORDOVA

CORDOVA to ANCHORAGE

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SEATTLE TO ANCHORAGE AND FAIRBANKS (INLAND ROUTE) CONFIDENTIAL

SEATTLE TO VANCOUVER

129 STATUTE MILES

The route between Seattle and Vancouver is completely serviced by radio ranges. Bellingham radio is more reliable for homing than Vancouver radio because at Pato Island, east of Bellingham, and Point Atkinson, northwest of Vancouver, operate automatically.

The track lies along the east side of the broad trough containing Puget Sound and passes alternately over land and water. The land crosses in flight is low with gentle relief. It is checkerboarded by numerous clearings in the form of highways and railroads. High rugged mountains rise abruptly 10 to 20 miles in either direction. Near Bellingham are hills more than 3,000 feet high, and Mt. Baker, 10,750 feet, is to the east. Between Bellingham and Vancouver the extremely flat low land of the Fraser River delta crosses the coast. Clearings are numerous, and a rectangular network of north-south and east-west roads connects settlements and farm houses. Immediately north of Vancouver are high rugged mountains. The shore just north of the International border has a number of wide flat beaches. These beaches, the large number of relatively flat clearings, and numerous airports provide possible sites for emergency landings.

MINIMUM INSTRUMENT ALTITUDES

	N.BOUND	S.BOUND	EMERGENCY
FAIRBANKS FIELD to BELLINGHAM	5,000'	4,000'	2,500' W side of leg.

BELLINGHAM to VANCOUVER	6,000'	5,000'	1,000'
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VANCOUVER TO WHITEHORSE

994 STATUTE MILES

The first 120 miles of this route are along the north leg of the Vancouver range. The ranges at Prince George, Tealin, and Whitehorse are close enough so they could be used in emergencies. The track will also probably cut a leg of the range (now under construction) at Dog Creek. The Dease Lake radio is directly on route. At the south end, Bellingham radio is reported to be reliable for homing, and Point Atkinson radio beacon, operating automatically, provides a fix near Vancouver.

From Vancouver the track takes off directly over the rugged, densely forested Coast Range. Peaks 9,000, 9,500, and 10,000 feet high are not far off course during the first 150 miles. The topography is sharp and rough. The land drops off somewhat approaching the Chilliwack River, and northward to Prince George the landscape is more subdued with 4,000 feet an average altitude and some peaks above 6,000 feet. Lakes and rivers are abundant and areas of low relief, extensive. Heavy forests cover the area. The

route turns northwest at Prince George, and the terrain for the first 120 miles is similar to that approaching Prince George. Few peaks rise above 5,500 feet in this region, and large lakes are common. Most of the lowlands are wooded, and the higher summits are rising above timberline. North of Slate Creek the country rises gradually to about 6,000 feet and the terrain becomes rougher. Rivers and lakes are abundant. The terrain lowers somewhat approaching Dease Lake, and the valleys broaden so that there are wide areas of subdued, thickly wooded lowlands with rounded bare summits rising over 6,000 feet.

This type of terrain continues to Whitehorse with an increasing amount of relatively featureless lowland around Tealin and Gladys lakes. Peaks close to the course are as high as 6,800 feet. Whitehorse lies in a valley with mountains nearby. Large rivers and lakes continue to be abundant.

Sites suitable for forced landings are sparse along this route. The numerous lakes provide opportunity for ditching and are satisfactory for landings when frozen. River bars and scattered clearings in the timber could be used in some instances. Much of this route is over well uninhabited country, with only occasional trappers, prospectors, or native settlements.

MINIMUM INSTRUMENT ALTITUDES

	N.BOUND	S.BOUND	EMERGENCY
VANCOUVER to PRINCE GEORGE	Check with operations officer.		

PRINCE GEORGE to DEASE LAKE	11,000'	12,000'	9,000'
DEASE LAKE to WHITEHORSE	11,000'	12,000'	9,000'

\* Altitudes not flight checked.

DEASE LAKE TO JUNEAU

179 STATUTE MILES

Dease Lake radio and the commercial station (KINY, 1450 Kcs.) in Juneau can be used for homing. Juneau range station and Sentinel Island radio beacon, operating automatically with a 100-mile range, are north of the west end of the course.

From Dease Lake the track passes westward over rounded and flat-topped mountains rising to 6,000 feet with broad open valleys and wide lowlands. Westward from Level Mountain the land rises gradually, and the terrain becomes considerably rougher. Canyons are narrower, deeper, and more numerous. Approaching the coast the track rises over the Coastal Range with peaks close to 7,500 feet near the course. These mountains are sharp, rugged, and contain many glaciers. The valleys are deep and steep walled. The forest cover is dense up to 2,500 feet on the coastal side and somewhat higher on the interior side. The region along this route is virtually uninhabited except at either end. Level Mountain is reported to have areas suitable for free areas can be found in the forest. Check with operations for instrument altitudes.

JUNEAU TO ANCHORAGE

See Seattle to Anchorage Route Sec. page 9

CONFIDENTIAL SEATTLE TO ANCHORAGE AND FAIRBANKS (INLAND ROUTE)

BELLINGHAM-PRINCE GEORGE

376 STATUTE MILES

From Bellingham to Hope the track runs between the Bellingham and Vancouver ranges. The west leg of the Princeton range is crossed at Hope. A range is under construction at Dog Creek (Nov. 23, 1943). Prince George range is picked up near Williams Lake. Bellingham radio has good characteristics for homing.

The course from Bellingham to Hope follows along the south side of the broad flat Fraser River delta. High rugged mountains lie north and south of the route including Mt. Baker, 10,750 feet, 23 miles southeast. Much of the flat land crossed in flight has been cleared, and there are numerous roads, railroads, farms, small villages, and ponds. The Fraser River valley narrows sharply near Hope. The valley floor is flat and heavily timbered except where cleared. The track turns northward at Hope and follows along or parallel to the Fraser River valley to Prince George. Between Hope and Dog Creek the mountains are high and rough, with peaks up to 9,650 feet not far off the route. Major river valleys are open and flat floored, but their walls are steep and high, and the timber cover is dense. There contain large lakes. Approaching Dog Creek the topography takes on the aspect of a broad gently sloping plateau into which rivers have cut deep valleys. A particular characteristic of this area are the broad expanses of relatively level grassy upland breaking through the normally dense forest cover. Between Dog Creek and Prince George, the same dissected plateau-like topography is maintained though the relief becomes somewhat rougher, the timber cover more complete, and the grassy uplands largely disappear. The higher areas rise to 5,000 and 6,000 feet along this section of the route, although most of the land is between 2,000 and 4,000 feet. Near Prince George are broad lowlands at all altitudes between 2,000 and 3,000 feet. Many large lakes lie east of this part of the route. Several highways and the Canadian National Railway converge on Prince George. Intermediate fields are located at Abbotsford, Sumas, Hope, Dog Creek, Williams Lake, and Quesnel.

MINIMUM INSTRUMENT ALTITUDES

	N.BOUND	S.BOUND	EMERGENCY
BELLINGHAM to HOPE	11,000'	10,000'	9,000'
HOPE to DOG CREEK	11,000'	12,000'	10,000'
DOG CREEK to PRINCE GEORGE	9,000'	10,000'	6,500'

\* Altitude not flight checked.

PRINCE GEORGE TO FORT ST. JOHN

185 STATUTE MILES

The direct airline route lies east of the Prince George and Fort St. John ranges. A more indirect route northward to Fort McLeod and thence northward toward Fort St. John is covered in large part by ranges.

The first 60 miles northeast from Prince George on the direct route are over a subdued topography with broad areas of low relief and no hills or ridges much above 4,000 feet. Small lakes are abundant. Beyond Parsnip River, mountains rise abruptly to better than 7,000 feet, and the next 75 miles is over rugged mountains which fall off gradually eastward. Beyond Warthen Mountain the land is essentially that of a level plain at about 3,000 feet, sloping gently high plain at about 3,000 feet, sloping gently eastward. Rivers have cut valleys several hundred feet deep into this plain. Peace River is crossed just before reaching St. John on the new Alaska Highway. Timber cover is dense all along this route, although it is usually checkerboarded with clearings in the vicinity of settlements.

MINIMUM INSTRUMENT ALTITUDES

	N.BOUND	S.BOUND	EMERGENCY
PRINCE GEORGE to FORT ST. JOHN	9,000'	10,000'	7,500'

ST. JOHN TO FAIRBANKS

See Great Falls to Fairbanks Route description (Page 5) for this leg.

# ROUTE INFORMATION - INLAND - COASTAL ROUTES

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## ANCHORAGE TO FAIRBANKS

271 STATUTE MILES

The Anchorage and Fairbanks radio ranges afford some control at either end of this route and could be used for the greater part of a direct airline flight. The usual radio compass use of the radio ranges over the Talkeetna and Summit radio provide some guidance. The commercial station (KFAR, 610 kcs.) in Fairbanks can be used for homing.

The track between Anchorage and Talkeetna follows up the broad open valley of the Susitna River. The lake- and swamp-dotted valley floor is essentially flat near Cook Inlet and has hills only a few hundred feet high farther inland. The timber cover is locally dense, but grassy or brushy open spaces are abundant. Settlements are scattered along the Alaska Railroad and can be picked up near Willow and followed directly to Talkeetna. The Talkeetna Mountains east of the route have peaks up to 8,000 feet.

From Talkeetna to Summit the route follows up the Alaska Railroad at first in the Susitna River valley and then along the upper course of the Chulitna River. The course heads directly into Broad Pass, the lowest pass through the Alaska Range. The mountains on either side of the course become progressively higher and closer as Summit is approached, and though the elevation at Summit is only 2,426 feet, the peaks on either side are thousands of feet higher. Mt. McKinley, 20,300 feet --- the highest peak in North America is only 40 miles west of the flight course, and Mt. Hayes, 13,740 feet high, is only slightly farther to the east. These high mountains contain numerous glaciers and are among the most rugged in Alaska.

Beyond Summit the course continues along the Alaska Railroad to Yarett Fork, where it cuts directly across country toward Fairbanks, passing over peaks more than 6,000 feet high. Beyond the abrupt north face of the Alaska Range the land slopes gently northward to the low, featureless Tanana Valley. The area around Fairbanks is relatively low and of gentle relief. Higher hills and rougher country lie to the north. The timber over much of the country north of the Alaska Range is scattered and scrubby. It tends to be thickest in the Tanana Valley, but even here there are many openings. In the mountains and in many parts of the Tanana and Susitna valleys, bars and floodplains along the river provide the possible sites for crash landings. Most lakes and the quiet parts of large rivers will have ice thick enough in the dead of winter for even the largest planes. January to May is the most favorable period for landings on ice. A number of intermediate fields are distributed along this route, of which those at Willow, Talkeetna, Summit, Healy, and Bennett are the best.

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
ANCHORAGE to FAIRBANKS	11,000'	10,000'	9,000'

## JUNEAU TO WHITEHORSE

147 STATUTE MILES

The Juneau range covers this route as far as Haines, and the Whitehorse range can be picked up within a few miles of that city. Sentinel Island radio beacon, operating automatically with a normal range of 100 miles, provides a check point near the entrance to Lynn Canal.

The course from Juneau to Haines is directly up Lynn Canal. Rugged snow- and ice-covered mountains rise abruptly 5,000 to 8,000 feet on both sides. Haines is on a low densely forested flat, but the nearby tidal flats and river floodplain are bare. Dense timber covers most of this region below 2,000 feet.

From Haines the course turns northward up the deep, narrow Taiga Inlet toward Skagway. From the head of this inlet the track is directly across the backbone of the Coast Range with peaks approaching 5,000 feet. Deep, narrow canyons and rocky exposures characterize these mountains. Northward from the head of Lake Bennett the country becomes more open and altitudes decrease gradually toward Whitehorse. The valleys become wide and flat-floored, and large areas of low relief at 2,000 to 3,000 feet are seen. However, even here isolated peaks rise above 5,000 feet. The timber cover below 4,000 feet in the interior is relatively dense, but numerous grassy, dry, or swampy open spaces are scattered. A number of large elongate lakes constitute a distinctive feature of the interior.

Emergency landings will be difficult along Lynn Canal and in the Coast Range. Planes may have to be ditched in the sea or lakes. Flats close to shore and river bars and deltas may provide possible sites. In the interior the numerous openings in the timber, river bars, and the many lakes are all possible emergency sites. The lakes are especially good in winter when frozen. Emergency fields are located at Haines, Skagway, and Carcross. The Lewis River, the Mile Pass and Yukon Railroad, and the Alaska Highway all converge on Whitehorse. In the Lynn Canal region occasional strong gusts of wind up or down narrow canyons and passages are dangerous.

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
JUNEAU to WHITEHORSE	11,000'	12,000'	9,500'

## EDMONTON TO PRINCE GEORGE

370 STATUTE MILES

This is a contact flight. The land around Edmonton and westward for the first 100 miles is flat prairie land much of which is under cultivation. Roads, farms, small villages, ponds, and large lakes are common. Farther west the land rises gradually to over 3,000 feet and becomes progressively rougher. The Mile Pass. West of the Athabasca River the route enters the foothill belt of the Rocky Mountains where ridges rise to over 5,000 feet, and the topography is rough with numerous bad passes. The timber cover in the foothills is extensive. The Rocky Mountain front at about 255 miles west of Edmon-

ton is not as abrupt and imposing as farther south, but peaks close to the route rise to 9,000 feet. The high mountainous belt is relatively narrow and drops away westward to Fraser River valley. Between the Fraser and Prince George, there are broad areas of low relief at about 3,000 feet and some higher mountains and hills rising above 5,000 feet. Timber covers most of the area.

### CONTACT FLIGHT DESCRIPTION

W. BOUND MILEAGE	E. BOUND MILEAGE	LANDMARKS
0	371.5	Edmonton Range.
104	267.5	Route parallels Canadian National RR.
104	327.5	Center of Isle Lake.
54	317.5	Pembina River.
74	297.5	Center of Chip Lake.
101	270.5	McLeod River.
115	256.5	Town of Edson, 9 miles south.
145	226.5	Athabasca River
145	116.5	Foothills of Rocky Mountains.
225	226.5	
164.5	207	Hay River.
255	116.5	Rocky Mountain front.
295	76.5	Holy Cross Mountain, 4 miles S
311.5	60	Canadian National RR.
312.5	59	Fraser River.
330	41.5	Sugar Loaf Mountain.
341	30.5	Bovron River.
354.5	17	Willow River.
371.5	0	Prince George Range.

Prince George field is 4 miles north of range station at 322 $\frac{1}{2}$  M. Edmonton field is 3.3 miles east of the range station at 61 $\frac{1}{2}$  M.

## PRINCE GEORGE TO ANNETTE ISLAND

370 STATUTE MILES

The Prince George, Smithers, and Annette Island Ranges provide essentially continuous radio control for this route. The commercial station (KWN, 930 kcs.) in Ketchikan, can be used for homing. The Mary Island and Triple Island radio beacons operate automatically and afford fixes upon approaching the coast.

From Prince George to Smithers, the terrain has a low relief featuring wide areas of subdued topography above which low, rounded hills and ridges rise to an altitude of 5,000 feet. River valleys are broad and open with the flats. Large elongate lakes are common in some valleys and small ponds dot the landscape. The timber cover is heavy, but clearings are around settlements. The Canadian National Railroad to

Prince Rupert, and the automobile route to Hazelton roughly parallel the route as far as Smithers. From Smithers to the coast, the track crosses rugged mountainous country with high, sharp peaks rising above the dense forest which covers nearly all areas up to 5,000 or 6,000 feet. The highest peak close to the route is Slater Mount, 9,140 feet, and the land remains relatively high, however, toward the coast. The major valleys, however, tend to be broad and open with some stretches of flat floor. The coastline is extremely irregular, rocky, and rugged. Flat areas, close to the coast, such as on Annette Island, are densely timbered. Intermediate fields are located at Vanderhoff, Smithers, Woodcock, and Terrace. The coast of the Gulf of St. Lawrence serves as a locus for settlements in this region.

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
PRINCE GEORGE to SMITHERS	9,000'	10,000'	7,000'
SMITHERS to ANNETTE ISLAND	11,000'	12,000'	10,000'

## NORTHWAY TO ANCHORAGE

285 STATUTE MILES

The Gulikana and Northway ranges encompass all except the first 85 miles of this route. Sheep Mountain radio, near the head of Matanuska River, gives a check near the beginning of the Gulikana range.

The track soon passes from the low flatland around Anchorage onto the rugged north flank of the Chugach Mountains. Peaks 9,000 feet high are on course and Mt. Marcus Baker, 13,250 feet, is 15 miles southwest. Beyond the Chugach is the Copper River Basin, a broad, monotonous lakodotted lowland of slight relief and altitudes between 1,500 and 3,000 feet. Beyond Gulikana, the west end of the Wrangell range is skirted, and the rugged but lower Nutzotin Mountains are crossed to reach the broad lowland of upper Tanana Valley at Northway. The Wrangells contain glacier-diced volcanoes rising above 16,000 feet, and the Nutzotin Mountains have peaks up to 9,300 feet, although the terrain on course is not much above 5,000 feet. Areas above 3,000 or 4,000 feet are without timber, but forests below that altitude are dense, though scrubby in the interior. Openings are likely to be brushy or swampy. Forced landings may be made on river bars and floodplains, on frozen rivers and lakes, or planes may be ditched in various water bodies. Intermediate fields are located at Gulikana, Healyana, and Tanerosa. The Richardson and Alaska highways and their branches are crossed by this route.

### MINIMUM INSTRUMENT ALTITUDES

	N. BOUND	S. BOUND	EMERGENCY
ANCHORAGE to GULIKANA	15,000'	16,000'	9,000' fly N side of leg.

GULIKANA to NORTHWAY	17,000'	18,000'	12,000' fly N side of leg.
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\* Altitudes not flight checked.

ANCHORAGE to FAIRBANKS

Instrument let down procedure in mountain areas do not allow much room for maneuvering. Be sure to follow closely the prescribed distances and altitudes, particularly on the pull up.

To ensure that range beams do lie in their published position (when preparing for an instrument let down) make a compass check of both the shuttle leg and the range to airport leg at initial approach altitude.

Temperature inversions are common in Alaska. This phenomena must be taken into account when making instrument let downs. Errors as great as 500' in indicated altitude might develop with large differences between ground and upper air temperatures. The error in these cases will be on the dangerous side, that is, the plane will be lower than anticipated. The lower the airport elevation, the less severe is the error.

Passengers asleep in the cabins of landing airplanes should be awakened before the landing descent is started. This practice is designed to prevent ear trouble from developing. Sleepy passengers obviously cannot compensate ear pressure by the usual preventive measures of swallowing or chewing gum.

Shuttle climb to cruising altitude should always be conducted directly over the range station. When cruising altitude is reached, the range leg should be used to establish a compass heading toward the next range. This procedure will automatically compensate for wind drift.

Do not forget to make temperature corrections for altitude. It is not uncommon to run into differences of 1500 feet between actual and indicated altitudes when flying at 12,000 feet.

Careful attention to position reports and strict adherence to your flight plan is your best insurance against a winters sojourn in an Arctic igloo.

In northern Canada and in Alaska many of the villages shown on our maps are only small clusters of huts that are almost invisible from the air.

Frozen lakes are good emergency landing areas, but be careful not to land cross wind. Ice does not furnish enough traction for full control of the plane on cross wind landings.

Learn to differentiate between ice and frozen muskeg. While on the ground, it is often difficult to tell one from the other.

Do not leave your plane with the brakes set. Release them as quickly as possible and tie the plane down.

The best maps of interior Canada and of Alaska are the 11,000,000 AAF World Pilotage charts. The new "AAP Flight Charts" are strip maps corrected by trigonometric photography and are reasonably accurate.

Areas in which flight is prohibited or sub-ject to dangerous extraneous influences (bombing, etc.) are listed on flight maps. The pilot is responsible for bringing his maps up to date in this respect.

The hours of daylight change rapidly with a few degrees change in latitude along the northern portions of these routes. Consult the sunrise and sunset tables in this manual.

Use of electrical equipment (such as heaters, defrosters, etc.) in the cockpit may cause a compass deviation. Note the amount of deflection each time a switch is turned on or off and allow for the change in all subsequent calculations.

In cold still weather, local fog often forms over towns or over open water but rarely extend much beyond the limits of the town or lake. An airport on the outskirts of town may thus be fogged in while all of the surrounding area is clear.

All weather communications are in code except that in emergencies communications may be in the clear.

Local time zones which will be encountered along these routes and the hours to be added to convert Local War Time to Greenwich Civil Time are:

- (1) Mountain War time - add 6 hours
- (2) Pacific War time - add 7 hours
- (3) Yukon War time - add 8 hours
- (4) Alaska War time - add 9 hours

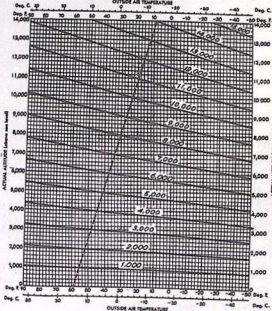
## INDICATED ALTITUDE - ACTUAL ALTITUDE

CONVERSION FOR TEMPERATURE EFFECT

Always indicated altitude (IAS) and published or recommended altitudes are based on standard atmosphere. Actual altitude (AAS) is the actual altitude above sea level. The difference between IAS and AAS is the temperature effect. The difference between IAS and AAS is the temperature effect.

Standard Temperature Gradient

Indicated on temperature scale



The U. S. Army Airways Communications System (ACCS) maintains radio stations at many of the Canadian airports which service the United States to Alaska. All communications concerning U. S. planes will be directed to ACCS stations where they are available. Where they are not available messages will be sent to U. S. C.A.A. stations or to Canadian Department of Transport (DOT) stations who will guard 3105 kcs. for this purpose and will answer on their listed frequencies.

Canadian range stations should be called by using the name of the station and the name of the facility desired, such as "Watson Lake Range". Supplementing 3105 kcs. on the guarded frequency list are the other two standard U. S. frequencies - 4495 and 6210 kcs. Broadcast is made on most DOT ranges at least once every hour. In all respects, save one, the DOT ranges are just the same as the standard range you have been using in the United States. This one difference lies in the method of selecting the N. quadrant, so be sure to carefully check the radio charts for your "M's" and "A's". Under U. S. procedure, the quadrant containing True North is assigned the N signal; in Canada the quadrant containing the 125 True North is assigned the N signal. In some instances the result is the same, regardless of which system is used.

In Canada the ACCS airways frequencies for transmission and guard are usually identical; that is, if your radio man calls the station on 2994 kcs., he will be answered on 2994. The exception to prove the rule is the old combination of 4220 - 4495 kcs. where the guard is 4495 and the ground-air frequency is 4220 kcs. 4495 kcs. is guarded by these ACCS airway stations with supplementary guard frequencies of 2994 and 4917 4917.5 kcs.

The Canadian operated airway radios transmit on 2220, 4285 and 5500 kcs. in the majority of cases with 4895 kcs. the universal transmission frequency. The airways station, the range station and the control tower all guard the same frequencies. 3105 kcs. is the only standard guard frequency in use throughout Canada. Control towers transmit on 298 kcs.

Alaskan ranges are called by naming the station, followed by the word radio, as "Ladd Field radio". 3105 kcs. is guarded by all ranges with 4495 and 6210 kcs. as additional guard frequencies. Weather broadcasts are made over the range frequency at least twice every hour. All the Alaska ranges servicing this route are equipped with Z markers.

ACCS stations in Alaska guard 4495 kcs. for voice and 4595 kcs. for CW. In addition 3105 and 6210 kcs. (voice) are available. The station will answer you on any frequency called except for the 4220; 4495 kcs. combination. The same frequencies are guarded by ACCS control towers as are guarded by the airways. At almost every airport in Alaska the control tower transmits on 396 kcs.

If necessary, the aeronautical radio stations will guard other frequencies than those listed, but sufficient advance notice must be given to ensure an acknowledgment of the request. The same applies for a request extending regular hours of operation.

Besides regular aeronautical radio stations, there are many low powered private and government transmitters scattered along the route. These stations keep no regular watch hours nor do they guard any set series of frequencies. They are used largely for point to point communication. Their usefulness to aircraft is uncertain, but mention is made of them in case the trip planned does not follow regular scheduled routes. Marine beacons along the coastal route are used mainly for establishing fixes. They have an operating range varying between 20 miles and 200 miles which means the radio operator will have to be on his toes if searching for a low powered marine beacon. The operating hours are for only a few minutes out of every hour and this fact combined with the limited range of such equipment considerably restricts their use to air navigation. A list of the marine beacons which might be contacted along this route will be found in the radio tabulation section.

Mountainous areas have a disturbing influence on radio range operations. Legs are sometimes bent and often have multiples. False cones of silence are also common, but as all Alaskan stations are now equipped with Z markers, this phenomena should cause very little trouble to flight within the Territory. In Canada, though, many range stations do not have Z markers so false cones of silence must be guarded against. Multiples are particularly dangerous when found on the "On Course" range legs. Under these conditions, a pilot using the "On Course" leg to establish a heading away from a radio range will find himself in a mess of trouble.

Airway Traffic Control Centers are being set up in Alaska with functions corresponding to the Airway Traffic Control Centers in the United States. No information is available at the moment on any similar traffic centers in Canada, but it will be a good idea to check for this at Seattle or Great Falls. The Control Centers which will handle traffic on the United States to Alaska routes are:

1. Anchorage, Alaska (Merrill Field)
2. Fairbanks, Alaska (Ladd Field)
3. Great Falls, Montana (Gore Field)
4. Seattle, Washington (Boeing Field)

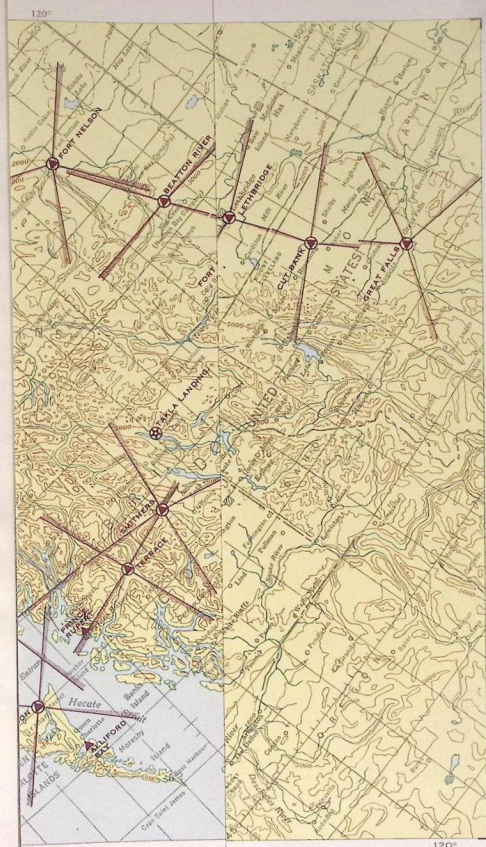
A radio reporting schedule will be given the pilot before he leaves. If he stays on his flight plan, he will report on the frequency position report once every 20 minutes in addition to the "Passing Over" reports. Such reports are to be made to ACCS airway stations over 4495 kcs. and will be acknowledged on 4220 kcs. Do not make the report to the airport tower.

A copy of the Department of Commerce publication "Air Navigation Radio Aids" should be obtained for the portion of the flight within the United States. Flight in Canada is in accordance with "ICAP Regulations for Control of Aircraft Movements in Canada", and in Alaska the "Joint Army, Navy, Alaskan Aircraft Control Committee Agreement (ANACAC)" will apply.

# RADIO FACILITIES

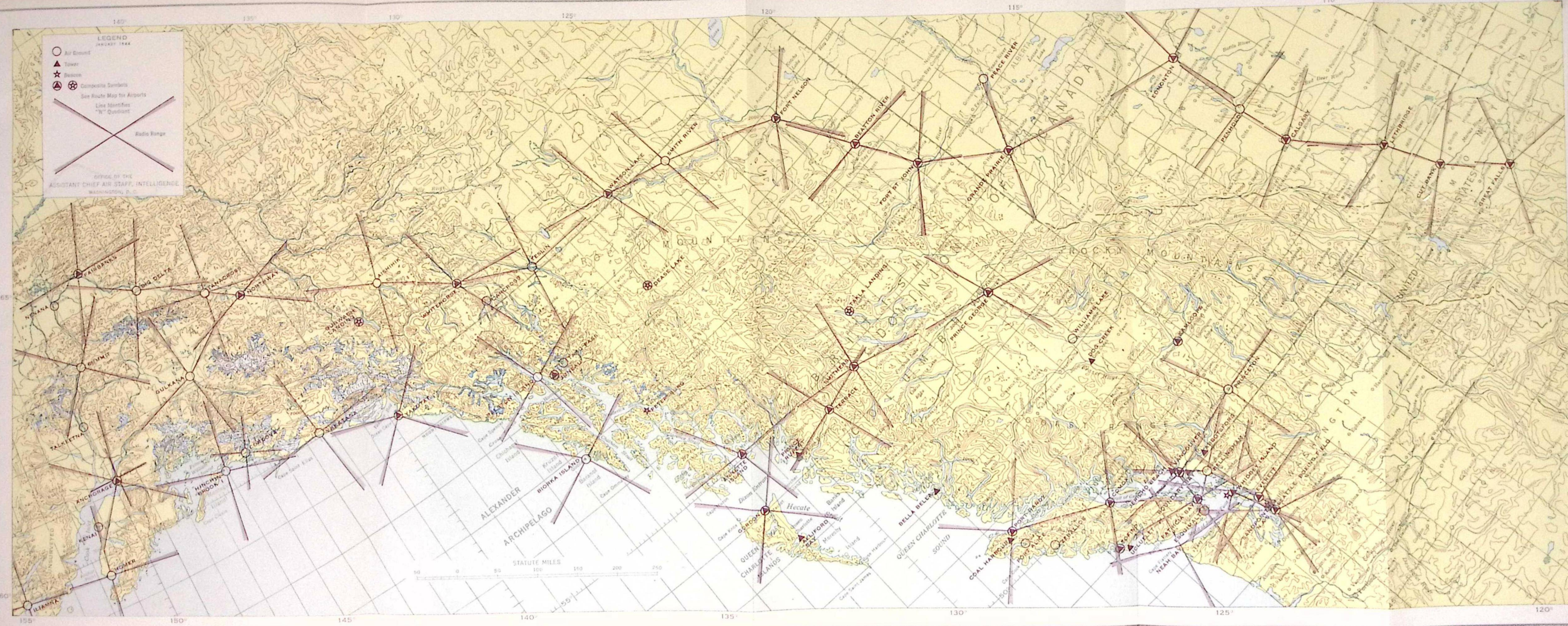
STATION	FACILITY	CALL	TRAN.	GENRS	TYPE	HOURS	OPERATOR	POSITION
ABBOTSFORD B. C.	Tower	Abtsford Tower	3017.5	3017.5 3105 4495	Voice	1430-0030		49°03'N 122°16'W
AISHNIK Y. T.	Air/Ground (Emergency)	VFFH	2612 4885	3105 4495 5390 6210		On request	D. O. T.	61°49'N 137°27'W
	Range	ZK (VFDB)	341	3105 4495 5390 6210	BRA	On request WX @ H - 40	D. O. T.	61°49'N 137°27'W
ALLIFORD BAY B. C. (Seaplane Base)	Tower	Alliford Tower	3017.5	3017.5 4495	Voice			53°12'N 131°59'W
ANCHORAGE ALASKA	Tower	Anchorage Tower	278		Voice	Continuous		61°15'N 149°49'W
	Beacon		177.5		YH	Continuous		61°15'N 149°49'W
	Range	HQ (KEDW)	338	3105 4495 6210	SBRAZ	Continuous	CAA	61°13'N 149°48'W
	Localizer	1R	5672.5 278		MLD	On request On request	CAA	61°13'N 149°48'W
(ELMENDORF)	Air/Ground (and D/F)	WX	2912 4220 4742.5 4917.5 3285 4595 6523	2912 4495 4742.5 4917.5 3285 4595 6523	Voice	Continuous	AACS	61°15'N 149°49'W
		WX	4917.5 3285 4595 6523	4917.5 3285 4595 6523		On request Continuous		
	Tower	Elmendorf Tower	396	3105 4495 4895 6210 7105	Voice	Continuous	AACS	61°15'N 149°49'W
		(VHF)	126.18 mc.	126.18 mc.	Voice	Continuous		
ANNETTE ISLAND ALASKA	Air/Ground	WYZF	2912 4220 4742.5 3285 4595 6523	2912 4495 4742.5 3285 4595 6523	Voice	Continuous	AACS	55°03'N 131°35'W
			1638 3285 4595 6523	1638 3285 4595 6523		"		
	Tower	KINH Annette Tower (WYZF)	396 3017.5	3105 3017.5 4495 4220 6210	Voice	Continuous	PAA AACS	55°03'N 131°35'W
	Range	KO (KXQP)	266	3105 4495 6210	SBRAZ	Continuous WX @ H-20, 48	CAA	55°03'N 131°36'W
			5672.5			On request		
BEATON RIVER B. C.	Range	ZC	365	3105 4495 6210		1400-0600		57°23'N 121°37'W
BELLA BELLA B. C. (Seaplane Base)	Tower	Bella Bella Tower	3017.5	3017.5 4495	Voice			52°09'N 128°05'W
BELLINGHAM WASHINGTON	Range	JJ (KEQH)	209	3105 4495 3117.5 6210	SRAZ	Continuous	CAA	48°50'N 122°35'W
BIG BELLA ALASKA	Air/Ground		3350 5960 189	3350 5960 189	CW			64°02'N 145°42'W

PROJECTION: ELIMENDORF SPHERICAL 20. VED. 620. 2708 12. 000000  
PROJECTION STANDARD PARALLELS 55° AND 65° SCALE 1:5,000,000



# LITIES

Position
64°02'N 145°42'W
56°05'N 135°32'W
49°05'N 122°59'W
61°21'N 138°59'W
51°06'N 114°01'W
51°07'N 113°56'W
60°10'N 134°31'W
50°36'N 127°35'W
49°45'N 124°37'W
60°24'N 146°06'W
60°29'N 145°25'W
58°29'N 130°01'W



**LEGEND**  
 JANUARY 1944

- Air Ground
- ▲ Tower
- ★ Beacon
- ⊗ Composite Symbols  
See Route Map for Airports
- Line Identifies "N" Quadrant
- ✕ Radio Range

OFFICE OF THE  
 ASSISTANT CHIEF AIR STAFF, INTELLIGENCE,  
 WASHINGTON, D. C.

STATUTE MILES  
0 50 100 150 200 250

# RADIO FACILITIES

STATION	FACILITY	CALL	TRANS.	GUARDS	TYPE	HOURS	OPERATOR	POSITION
BIG DELTA ALASKA	Range	JQ (KHDG)	379	3105 4495 6210	SBRAZ " "	Continuous WX @ H-20,48	CAA	64°02'N. 145°42'W.
BIORKA ISLAND ALASKA	Range	SK(KEQU)	323	3105	SBRAZ	Continuous WX @ H-20, 48 - 53	CAA	56°51'N. 135°32'W.
			4062.5	4495 6210	" "	On request "		
BOUNDARY BAY B. C.	Tower	Boundary Tower	3017.5	3017.5 4495	Voice			49°05'N. 122°59'W.
BURWASH LANDING Y. T.	Air/Ground	CZTW		1638 1674 5692.5 6570	CW	Day On Request " "	PAA	61°21'N 138°59'W.
	Beacon		314			" "	PAA	
CALGARY ALBERTA	Air/Ground	CYK		3212.5 4330 5642.5	Voice		TCA	
	Tower	Calgary Tower	278	3105 3917.5 4495 5390 6210		0100-1700 " " " " " "	D. O. T.	51°06'N. 114°01'W.
	Range	YC(VFA)	344	3105 3917.5 4495 6210	RAZV	Continuous " "	D. O. T.	51°07'N. 113°56'W.
CARCROSS Y. T.	Air/Ground		2228 4355		V or CW		N. A. Lt.	60°10'N. 134°41'W.
COAL HARBOUR B. C. (Seaplane Base)	Tower	Coal Hbr. Tower	3017.5	3017.5 4495	Voice			50°36'N. 127°35'W.
COMOX B. C.	Tower Range	QQ	3017.5 400	3017.5 3017.5 3105 4495 6210	Voice SRAZ " " "	Continuous " " "		49°45'N. 124°57'W.
CORDOVA ALASKA	Air/Ground	WYSC	4220	4495 3105 6210	Voice " "	Continuous " "	AACS	
(HINCHINEROOK I.)	Range	KA(KEOV)	4595 362	4595 3105 4495 6210	CW SBRAZ	Continuous WX @ H-20,43	CAA	60°24'N. 146°06'W.
	Localizer	FU	278		ML	On request	CAA	60°29'N. 145°25'W.
CUTBANK MONTANA	Tower	Cutbank Army Tower	396	3105 4495 6210	Voice " "	Continuous " "	CAA	
	Range	GV	263	3105 3117.5 4495 6210	SRA	Continuous	CAA	
DEASE LAKE B. C.	Air/Ground	C7HW	1638 1674 6570 2946	1638 1674 6570 2946	CW	Day On request On request	PAA and CPA	58°29'N. 130°01'W.
	Beacon	QD	4742.5 347	4742.5 347	Voice	Night Day PAA		
	Beacon	CHTW	1638	1638		CPA		
DOG CREEK B. C.	Tower	Dog Creek Tower	3017.5	3017.5 4495	Voice		D. O. T.	

# RADIO FACILITIES

STATION	FACILITY	CALL	TRANS.	GRADES	TYPE	HOURS	OPERATOR	POSITION	
EDMONTON ALBERTA	Air/Ground	WXAB	2994	2994	Voice	Continuous	AACS	53°35' N.	
			4220	4495	"	"	"	113°30' W.	
			4917.5	4917.5	"	"	"	"	
			130	130	CW	"	"	"	
				2644	"	"	"	"	
			6490	"	"	"	"		
			8700	"	"	"	"		
		VFDX	5390	5390	Voice	Continuous	D.O.T.	53°35' N.	
		CTU	3212.5	3212.5	Voice	Continuous	T.C.A.	113°30' W.	
			4330	4330	"	"	"	53°34' N.	
		5642.5	5642.5	"	"	"	113°31' W.		
	Tower	Edmonton Tower	CHB	4755	4755	Voice	Continuous	C.P.A.	53°34' N.
				5420	5420	"	"	"	113°31' W.
				278	3105	Voice	Continuous	RCAP	53°34' N.
				4330	"	"	"	"	113°31' W.
				4495	"	"	"	"	
			5390	"	"	"	"		
			5642.5	"	"	"	"		
			6210	"	"	"	"		
		(VHF)	126.18	126.18	"	"	"	"	
		mc.	500	"	"	"	"		
Range	XD	266	197	BRAZ	Continuous	D.O.T.	53°34' N.		
			3105	"	WX @ H-10,	"	113°37' W.		
			4330	"	High guard	"	"		
			4495	"	Continuous	"	"		
			4885	"	"	"	"		
		5390	"	"	"	"			
		5500	"	"	"	"			
		5642	"	"	"	"			
		6210	"	Day Guard	"	"			
		2870	3985	Continuous	"	"			
D/F					RCAP				
ESQUIMALT B. C.	Air/Ground	CZQV	1610	1610			C.P.A.	48°26' N.	
			4755	4755			"	123°26' W.	
			5390	5390					
			6590	6590					
			8360	8360					
		8675	8675						
		12960	12960						
	Tower	Paine Army	201	3105	Voice	Continuous		47°53' N.	
				1117.5	"	"	"	122°16' W.	
				4495	"	"	"	"	
			6210	"	"	"	"		
			126.18	126.18	"	"	"		
(VHF)		mc.		"	"	"			
Range		MI (XBQK)	224	3105	MRL	Continuous		47°51' N.	
				3117.5	"	"	"	122°16' W.	
				4495	"	"	"	"	
				4595	"	"	"	"	
			6210	"	"	"	"		
	6523	"	"	"	"				
FAIRBANKS (LADD FIELD) ALASKA	Air/Ground	WZY	4220	4495	Voice	Continuous	AACS	64°50' N.	
			4917.5	4917.5	"	On request	"	147°38' W.	
			2994	3105	"	Continuous	"	"	
				2994	"	"	"	"	
				6210	"	"	"	"	
		6150	"	"	"	"			
	(VHF)	126.18	126.18	"	"	"			
		mc.	260	"	"	"			
		4650	4650	CW	Continuous	"	"		
		4850	4595	"	"	"	"		
Tower	Ladd Tow- er	396	500	"	"	"	"		
			3105	"	"	"	"		
			4495	"	"	"	"		
			6210	"	"	"	"		
			6150	"	"	"	"		
(Russian fre- quency)	6150	6150	"	"	AACS	64°50' N.			
(VHF)	126.18	126.18	Voice	"	"	147°38' W.			
	mc.		"	"	"	"			

# RADIO FACILITIES

STATION	FACILITY	CALL	TRANS.	GRADES	TYPE	HOURS	OPERATOR	POSITION	
FAIRBANKS (LADD FIELD) ALASKA	Tower	Fairbanks Tower FX (KDCS)	278	278	Voice	Continuous	CAA	64°50' N.	
			260	3105	"	"	"	147°41' W.	
				4495	"	"	"	"	
				6210	"	"	"	"	
				5672.5	"	"	"	"	
	FORT NELSON B. C.	Air/Ground	WXAD	2994	2994	Voice	Continuous	AACS	58°48' N.
				4220	4495	"	"	"	122°41' W.
				4917.5	4917.5	"	"	"	"
				6490	6490	CW	"	"	"
8700				8700	"	"	"	"	
		VFDT	5390	197	Voice	"	D.O.T.		
				3105	"	"	"		
				4495	"	"	"		
				4885	"	"	"		
				5390	"	"	"		
			6210	"	"	"			
			9080	"	"	"			
Tower	Nelson Tower	278	3105	Voice	Continuous	RCAP	58°50' N.		
			4495	"	"	"	122°56' W.		
			4917.5	"	"	"	"		
			6210	"	"	"	"		
			126.18	126.18	"	"	"		
	(VHF)	mc.		"	"	"			
	Range	YE (VFCM)	332	197	BRAZ	Continuous	D.O.T.	58°48' N.	
				3105	"	WX @ H-10, 43	"	122°41' W.	
				4495	"	"	"	"	
				4885	"	"	"	"	
			5390	"	"	"	"		
	6210	"	"	"	"				
	9080	"	"	"	"				
FORT ST. JOHN B. C.	Air/Ground	CY30	1610	1610	CW		CFA	54°26' N.	
			4755	4755	Voice		"	124°17' W.	
			8560	8560	CW		"	"	
			5390	5390	CW		"	"	
			6590	6590	CW		"	"	
		8675	8675	CW		"	"		
		12960	12960	CW		"	"		
	Tower	WXAC	2994	2994	Voice	Continuous	AACS		
			4220	4495	"	"	"	"	
			4917.5	4917.5	"	"	"	"	
130			130	CW	Continuous	"	"		
2644			2644	"	"	"	"		
	6490	6490	"	"	"				
	8700	8700	"	"	"				
	10965	10965	"	"	"				
	2612	2612	Voice	Continuous	D.O.T.	56°18' N.			
	5390	5390	"	"	"	120°50' W.			
Tower	VFBJ	278	3105	Voice	Continuous	RCAP	56°14' N.		
			4495	"	"	"	120°44' W.		
			6210	"	"	"	"		
			5390	"	"	"	"		
			6210	"	"	"	"		
	(VHF)	126.18	126.18	"	"	"			
		mc.		"	"	"			
	Range	XJ (VFBJ)	320	197	BRAZ	Continuous	D.O.T.	56°18' N.	
				3105	"	WX @ H-10, 40	"	120°50' W.	
				4495	"	"	"	"	
			4885	"	"	"	"		
			5390	"	"	"	"		
	5500	"	"	"	"				
	6210	"	"	"	"				
	9080	"	"	"	"				
GORDON B. C.	Tower	Gordon Tower	3017.5	3017.5	Voice		RCAP	54°02' N.	
			4495	4495	"	"	"	132°10' W.	
					"	"	"	"	
					"	"	"	"	
					"	"	"	"	

# RADIO FACILITIES

STATION	FACILITY	CALL	TRANS.	GRANDS	TYPE	HOURS	OPERATOR	POSITION	
GORDON B. C.	Range	VK (VFPV)	203	3017.5 3105 6210 4495	SRAZ	Continuous			
						"	"		
GRANDE PRAIRIE ALBERTA	Air/Ground	VFDC	4220	4495	Voice	"	D. O. T.	55008' N, 118°49' W.	
			4184	197	"	"	"	"	"
			5390	3105 4885	"	"	"	"	"
				5390 5500 6210	"	"	"	"	"
				2090	CW	"	CPA	"	"
	Tower	Grande Prairie Tower	278	3105 4495	Voice	Continuous	D. O. T.	55°10' N, 118°53' W.	
				5390 6210	"	"	"	"	
				126.18 mc.	"	"	"	"	"
	Range	GU (VFBG)	221	4495 197 3105 4885	BRAZ	Continuous	D. O. T.	55°08' N, 118°49' W.	
				5390 5500 6210	"	"	"	"	"
GREAT FALLS (ARMY AIR BASE) MONTANA	Air/Ground	WXEN	4220	4495 6210	Voice	Continuous	AACS		
				4595 6200	CW	"	"	"	
	Tower	Gt. Falls Army Tower (VFP)	396	3105 4495	Voice	Continuous	AACS	47°30' N, 111°10' W.	
				126.18 mc.	"	"	"	"	"
(GORE FIELD)	Air/Ground	WXEN	4220	4495 4595 6200	Voice CW	Continuous	AACS		
				11445	"	"	"	"	
	Tower	Gt. Falls Army Tower (VFP)	396	3105 4495	Voice	Continuous	AACS	47°30' N, 111°10' W.	
				126.18 mc.	"	"	"	"	"
	Range	GT (KEOB)	317	3105 3117.5 4495 6210	SRAZ	Continuous	CAA	47°02' N, 111°23' W.	
				4495 6210	"	"	"	"	
Range	XY (KHDR)	385	3105 4495 6210	SBRAZ	Continuous	CAA	62°11' N, 145°30' W.		
			4495 6210	"	"	"	"		
Range	XA (KEOU)	362	3105 4495 6210	SBRAZ	Continuous	CAA	60°24' N, 146°06' W.		
			4495 6210	"	"	"	"		
Range	JW (KHZZ)	320	3105 4495 6210	BMRL	Continuous	CAA	59°38' N, 151°33' W.		
			4495 6210	"	"	"	"		
Range	JP (KXZO)	233	3105 4495 6210	BMRLZ	Continuous	CAA	59°04' N, 154°53' W.		
			4495	"	"	"	"		
Tower	Jericho Tower	248	3017.5 3105	Voice	"		49°17' N, 123°12' W.		
		3017.5	4495	"	"	"	"		

# RADIO FACILITIES

STATION	FACILITY	CALL	TRANS.	GRANDS	TYPE	HOURS	OPERATOR	POSITION
JUNEAU ALASKA	Air/Ground	WYSA	4220	4495	Voice	Continuous	AACS	58°22' N, 134°55' W.
				1638 4742.5	CW Voice	"	FAA	58°22' N, 134°55' W.
	Tower	Juneau Tower	396	4495 6210 4742.5 5652.5	Voice	1530 to 0800	AACS	58°22' N, 134°55' W.
(RALSTON ISLAND)	Range	JE (KRAA)	236	3105 4495 6210	SBRAZ	Continuous	CAA	58°31' N, 135°02' W.
				4220 5672.5	"	"	"	"
KAMLOOFS B. C.	Air/Ground	WYT	1610	5390 8260	Voice	"	CPA	
				4755 8675 5690 12960	"	"	"	"
KENAI ALASKA	Air/Ground	JS	278	3105 4495 6210	Voice	WX at H-13, 43	CAA	60°34' N, 151°16' W.
				3017.5 3017.5	"	"	"	"
LEATHERIDGE ALBERTA	Air/Ground	CYH	3212.5	3212.5 4330	Voice	"	T. C. A.	
				5642.5	"	"	"	"
	Tower	Leth- bridge Tower	278	3105 3917.5 4495	Voice	0100-1600	"	49°38' N, 112°48' W.
				5390 6210	"	"	"	"
Range	QL (VFS)	248	3105 4495 6210	RAZV	Continuous	WX @ H-09	"	49°38' N, 112°43' W.
			4495 6210	"	"	"	"	
NEAH BAY WASHINGTON	Range	KQ	362	3105	Voice	"	"	48°01' N, 124°33' W.
				4495 6210	"	"	"	"
NEMANA ALASKA	Air/Ground	XYWN	278	3105 4495 6210	Voice	Continuous	CAA	64°31' N, 149°03' W.
				2994 4495	"	"	"	"
NORTHWAY ALASKA	Air/Ground	WYSL	2994	2994 4495	Voice	Continuous	AACS	62°58' N, 142°06' W.
				4917.5	"	"	"	"
	Tower	WYSL	278	4595 3105 4495 6210	CW Voice	Continuous	AACS	62°58' N, 142°06' W.
Range	FM (KHDI)	400	4495 6210	SBRAZ	Continuous	CAA	62°58' N, 142°08' W.	
			4495 6210	"	"	"	"	
PATRICIA BAY B. C.	Air/Ground	CYW	3212.5	3212.5 4330	Voice	"	T. C. A.	
				5642.5	"	"	"	"
(Emergency)	VFDJ	Patricia Bay Tower	4900	3017.5 6210	Voice	Continuous	D. O. T.	48°39' N, 123°26' W.
				3017.5 4495 6210	"	"	"	"
(SIDNEY ISLAND)	Range	YJ (VFBC)	233	3017.5 6210	BRAY	Continuous	RCAP	48°38' N, 123°19' W.
				3105 6210	"	"	"	"

# RADIO FACILITIES

STATION	FACILITY	CALL	TRANSM.	CHANNELS	TYPE	HOURS	OPERATOR	POSITION
PEACE RIVER ALBERTA	Air/Ground	CHRI (CPA)	4755 5420	4755 5420	Voice "			56°14' N. 117°26' W.
FENHOLD ALBERTA	Range	QF (VFT)	326	3105 4495 6210	RAV " "	Continuous " "		52°08' N. 113°04' W.
PETERSBURG ALASKA	Beacon	FUJ	278			Continuous	CAA	
PORT ALICE B. C.	Air/Ground	VY4Z	1610 4755 5390 6690 8360 8675 12960	4755	Voice " " " " "		CPA	50°23' N. 127°26' W.
PORT HARDY B. C.	Tower	Hardy Tower	3017.5	3017.5	Voice "		RCAP	50°40' N. 127°23' W.
	Range	ZT (VFGH)	350	3017.5 3105 4495 6210	SRAZ " "	Continuous " "		50°42' N. 127°26' W.
PRINCE GEORGE B. C.	Air/Ground	WXAI VFDQ	4420 4495 5390 6240 6690	4495 4595 5390 6210	Voice CW Voice "	Continuous "	AACS	
			197 3105 4405 4885					
		CH6Y and CXY	1638 1752 2748 4742 5037 5310	1638 1752 2748 4742 5037 5310	CW " " " "	Continuous " " "	PAA and CPA	
	Tower	Prince George Tower	278 3017.5 3195	3105 3017.5 4495	Voice "	0100 to 1700 " "	ROAP	53°54' N. 122°40' W.
		(VHF)	116.1 mo.	116.1 mo.	"	"		
		(VHF)	126.18 mo.	126.18 mo.	"	"		
	Range	X3 (VFCP)	272	3105 4495 4885 6390 6210	BRAZ "	Continuous WX @ H-10, 43	D. O. T.	53°50' N. 122°58' W.
PRINCE RUPERT B. C. (Scapleno Base)	Tower	Prince Rupert Tower	3017.5	3017.5 4495	Voice "			54°20' N. 130°18' W.
PRINCETON B. C.	Air/Ground (emergency) Range	VFBD QF (VFP)	2104 4900 326	3105 6210 3105 6210			D. O. T.	49°09' N. 120°30' W.
SEATTLE (BOEING FIELD) WASHINGTON	Air/Ground	WZHL	2624 5900 7920	2624 5900 7920			D. O. T.	49°29' N. 120°30' W.
		Seattle	2644 2994 3005 4917.5 5777.5 6490	2644 2994 3005 4917.5 5777.5 6490	Voice " " " "		NWA	

# RADIO FACILITIES

STATION	FACILITY	CALL	TRANSM.	CHANNELS	TYPE	HOURS	OPERATOR	POSITION
SEATTLE (BOEING FIELD) WASHINGTON	Tower	Seattle	8700 10965 278	8700 10965 278	Voice "	Continuous	NWA	47°52' N. 122°18' W.
	Range	SA (KQZ)	260	3105 4495 3117.5 6210	SBRMZ "	Continuous "	CAA	47°29' N. 122°15' W.
(SAND POINT NAS)	Tower	Navy Seattle	230 3295 6970	2105 4495 3117.5 6210	Voice "	Day & on req Continuous	Navy	47°41' N. 122°16' W.
	Beacon	JO	246 540					47°40' N. 122°15' W.
	Localizer	NEJ	522		YG NL	2000-0030 & on request Continuous On request and WH		47°40' N. 122°15' W. 47°41' N. 122°15' W.
SMITHERS B. C.	Air/Ground	VFDS	4184 4220 5390	197 3105 4495 4885 5390 6210	Voice "	Continuous	D. O. T.	
	Tower	Smithers Tower	3017.5	3017.5	Voice "	Continuous	D. O. T.	54°49' N. 127°11' W.
	Range	YD (VPCK)	230	197 3105 4495 4885 5390 6210	BRAV "	Continuous WX @ H-10, 40	D. O. T.	127°06' W.
SNAG Y. T.	Range	XQ	239			UNDER CONSTRUCTION		
SUMMIT ALASKA	Air/Ground	JD (KEQR)	278	3105 4495 6210	Voice "	Continuous WX @ H-13, 43	CAA	
	Range	JD	221		BMR LZ		CAA	63°19' N. 149°12' W.
TAKLA LANDING B. C.	Air/Ground	CHTV	1638 6570 4742.5 2912 5037.5 314 1638	1638 6570 4742.5 2912 5037.5 314 1638	CW " Voice "	Day On request Day Night On request	PAA and CPA	55°29' N. 125°56' W.
	Beacon	YQ (Z26Z)	1638				PAA CPA	
TAKU PASS ALASKA	Air/Ground	KIHO	1638 1674 4742.5	1638 1674 4742.5	CW " Voice "	Day On request Day		58°27' N. 134°00' W.
TALKKEHTNA ALASKA	Air/Ground	KEQS (AO)	278	3105 4495 6210	Voice "	Continuous WX @ H-13, 43	CAA	62°19' N. 150°05' W.
TANACROSS ALASKA	Air/Ground Range	KINC (KIND)	1638 317	1638 317	CW BMR LZ	Continuous H - 20, 48	PAA CAA	63°21' N. 143°18' W.
TERRACE B. C.	Tower	Terrace Tower	3017.5	3017.5	Voice "			54°36' N. 128°56' W.
	Range	XT	251	3105				54°32' N. 128°56' W.
TESLIN Y. T.	Air/Ground	VFFJ	5390	3105 4495 4885 5390	Voice "	Continuous	D. O. T.	



### RADIO FACILITIES

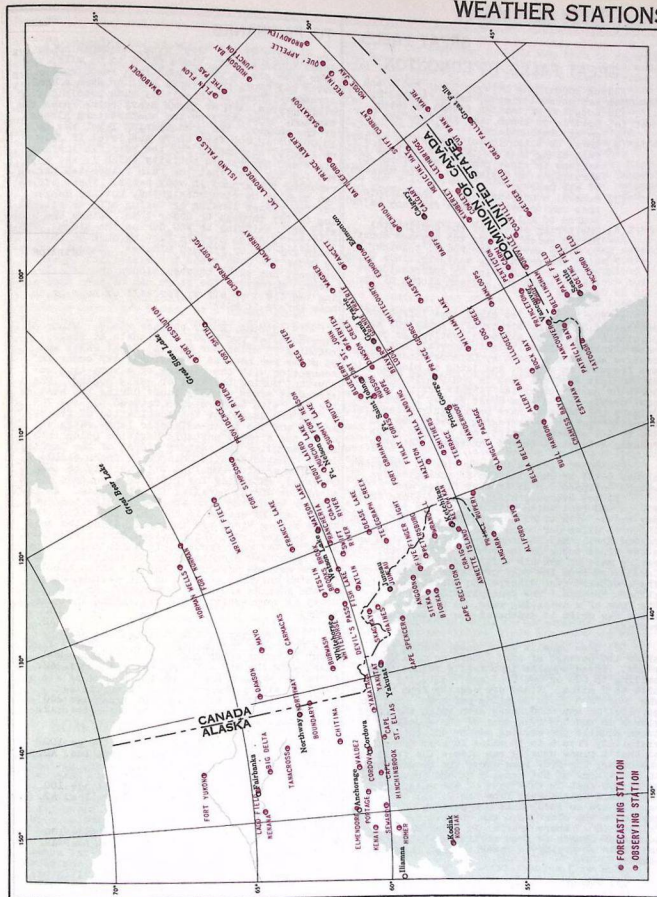
STATION	FACILITY	CALL	TRANS.	GENRES	TYPE	HOURS	OPERATOR	POSITION
YAKUTAT ALASKA	Range	VY (KRQW)	332		SBRAZ	Continuous	CAA	59°23' N 139°44' W
TEBALLAS B. C.	Air/Ground	CE9Z	1610 4755 5390 6690 8360 8675 12960		V or CH " " " " " " " " " "		CPA	49°05' N 126°51' W

### MARINE RADIO BEACONS

STATION	POSITION	IDENT.	FREQUENCY	HOURS	OPERATOR
CANADA					
DEAD TREE POINT (VOR)	53 21 30 N 151 55 55 W	XXX --	308	Continuous	A2
LANGARA ISLAND (VOP)	54 15 13 N 153 03 27 W	HHH ---	308	H:00 for 10-minute periods.	A2.
POINT ATKINSON (VOV)	49 19 51 N 123 15 49 W	VVV --	296	H:02 and H:32 for 10-minute periods.	A2.
QUATAINO (VOC)	50 26 26 N 128 02 27 W	BBB --	296	H:01 for 10-minute periods.	A2.
RACE ROCKS (VOF)	48 17 54 N 123 31 50 W	JJJ ---	296	H:00 and H:30 for 10-minute periods.	Range 10 miles. A2.
TRIPLE ISLAND (BOV)	54 17 35 N 130 52 50 W	000 ---	308	H:01 for 10-minute periods.	A2.
ALASKA					
CAPE DECISION LIGHT STATION (NDBA)	56 08 09 N 134 08 09 W	U ( . . )	286	Continuous	Range 100 miles. A2.
CAPE HINCHINBROOK LIGHT STATION (NDBK)	60 14 12 N 146 39 06 W	V ( . . )	292	H:10 and H:40 for 10-minute periods.	Range 100 miles. A2.
CAPE ST. ELIAS LIGHT STATION (NDBE)	59 47 48 N 144 36 12 W	O ( - - )	286	H:10 and H:40 for 10-minute periods.	Range 200 miles. A2.
CAPE SPENCER LIGHT STATION (NDBC)	58 12 00 N 136 38 18 W	F ( _ )	286	Continuous	Range 200 miles. A2.
FIVE FINGER ISLAND LIGHT STATION (NDBF)	57 16 05 N 133 37 21 W	D ( . . )	298	Continuous	Range 100 miles. A2.
MARY ISLAND LIGHT STATION (NDBD)	55 05 53 N 131 10 57 W	N ( _ )	298	Continuous	Range 100 miles. A2.
SEWINGEL ISLAND LIGHT STATION (NDBH)	58 32 46 N 134 55 12 W	X ( . . )	298	Continuous	Range 100 miles. A2.
TREE POINT	54 48 12 N 130 55 54 W	F ( . . . )	294		Range 100 miles. A2.

All stations operate continuously during fog.

### WEATHER STATIONS



## GREAT FALLS TO FAIRBANKS

## GREAT FALLS TO EDMONTON

Flying conditions between Great Falls and Edmonton are unusually good, being favored by:

- (1) Location of landing fields on level prairie or bench land far from any major obstructions.
- (2) Level or slightly rolling nature of terrain along this route, with no high elevations in close proximity to form obstructions to flying, or to the movement of air masses.
- (3) General continentality of the climate, this region being remote from any major source of moisture.
- (4) Sheltering effect of the Continental divide which lies on an average about 80 miles west of the route, together with the prevailing westerly winds which are warmed and dried by compression as they descend the eastern slopes of the Rockies.

As fog is rare, low cloudiness infrequent, contamination of the air by city smoke is negligible around the airports, optical or damp haze uncommon, rainfall light, snowfall not excessive and snow cover light, winds which are frequent in winter, and icing in clouds milder and less frequent than in regions to the west, north or east; commercial flights during the past decade to and from Great Falls, Lethbridge, Calgary and Edmonton have been highly successful, all scheduled trips, and delayed trips running between 1/2 and 5/8 throughout the year.

The chief factors contributing to the occasional delay or cancellation of schedules for planes equipped for instrument flying are:

- (1) Low overcast nimbus with ceilings from 100 to 500 feet with lines persist for a 15 to 25 miles per hour. This condition occurs snow winds occur in connection with cold fronts during April, May, September or October when moving mass of mP air which has crossed the Cordillera from the Gulf of Alaska and is working southward over Alberta and Saskatchewan into the form of a drifting rain, or a steady snow runways.

(2) Snow squalls which occur during or after the passage of cold fronts or cold occluding to 600 usually can be seen and visibility to 2 miles. Winds usually from WNW, or from 15 to 30 miles per hour. The gustiness with which they close in and the frequency of the squalls. Visibility from 6 to 30 miles in most directions the clear, ice-free zone above the clouds which in the winter do not usually extend above 10,000 feet in the squall drifts away from the field, and squalls are so local that one field. Often they may be in the clear when the observations are "closed in." Where a traffic is thick the main field is not or trying to sneak in just ahead of a squall.

(3) Summer rain and thunder squalls. These

are usually of the "dry" type, accompanied by a local blowing dust, winds of 45 to 65 miles per hour with strong gusts sometimes reaching 75 miles per hour, occasional rain or even a small amount of sleet is invariably much less frequent than sleet (virga) and at times heavy rains reach the surface, especially on the southwestern slope of the ranges. The condensation level may reach 2,000 or 3,000 feet at about sea level in July or August, accounting for the terrific surface winds and convective activity which is set up, and for the fact that the rain evaporates before reaching the ground in many cases. These storms are usually be circumnavigated, that is, they are usually for planes landing or taking off, or are dangerous to fly through or under them. Winds are generally from the SW. Winds are usually of short duration, but the probability is often zero in blowing dust. Visibility is often zero in blowing dust. Wind field for ten or fifteen minutes. Except for flights under the CnW cloud the visibility is excellent, and skies between clouds are usually clear. Moreover, the storm can be seen approach the field or airway for half an hour or an hour before it hits.

(4) Strong, gusty surface winds. Winds of over 60 miles per hour, with gusts at times reaching 75 miles per hour at Great Falls and 95 miles per hour at Lethbridge, may occur in connection with the passage of a cold front in elusion, during the Fall or early Spring. These winds usually occur during the heat of the day, with temperature between 70° and 75° F. and are caused by the combination of frontal action and the super-adiabatic lapse rates set up in the already unstable maritime polar (mP) air descending the eastern slopes of the Cordillera. Characteristic Chinook or Föhn clouds (lenticular alto-cumulus) will usually be seen overhead extending for fifty or a hundred miles along the airway parallel to the divide. An irregular barometer with abnormally high readings for the season is the only indication that well defined front is imminent, since the only lode, is the cold front aloft which does not protrude to the extreme surface where precipitation due to its high moisture content on the western slopes drifts the Rockies and Coastal Ranges, and is further dried by compression while descending the east slopes.

(5) Temporarily low ceilings and rain or snow following the passage of a cold front aloft. About 24 hours after the passage of a cold front aloft, when the mP air mass has reached Saskatchewan or western North Dakota, a front is built up above the surface which is sufficiently high to provide for the fresh westerlies over-ride, especially if the strength of these westerlies is increasing.

Alto-stratus will build up to the east of the airway and the precipitation area will work back over the airway from the east, giving zero conditions over the airway from the east and other low ranges, the Belt, Highwood, Bearspaw and ceilings between 800 and 2,000 feet of the airway, and ceilings of 200 feet along, caught in a rain zone. The pilot will be caught as occurs west of the divide (Seattle and Spokane) under similar conditions. It is well to cloud-formation occasional reversal of the normal lead extend to greater heights, especially as the force of hurricane force (80 to 120 miles per hour

from SW. to NW.) and icing may be severe aloft.

Forecasting the advent of bad weather in the Great Falls-Edmonton area is not as difficult for the experienced pilot or pilot who is on the spot, as the prediction of improvement in the weather after a day or so of persistent bad weather. The weather is usually stable, cold, Arctic air fills in the low valley, cold, cold, Arctic of the Rockies, the less dense maritime air masses from the west tend to override the pool of cold air below which pool does not disappear until the southwest or west winds become strong enough to remove the cold air by turbulence. The balance between the two air masses is delicate that it is often possible to tell within 36 or 48 hours just when the bad winds will predominate over the stable north-westerly winds. This usually exists between mid-September and early June, and is the despair of forecasters in the regions along the Continental divide where this stationary front exists. As can be seen from the above discussion, practically all of the bad weather in this region occurs just east of the Continental Divide, and even fronts or waves are moving at a normal speed from west to east the bad weather is only temporary and is minimized further by the down-slope tendency of the prevailing winds.

A word might be said about the variation from the normal pattern of the climate which might be expected in this region from year to year. At Great Falls in winter the temperature usually goes above freezing in such a season, resulting in removal of all snow and even drying up the fields. During January and early February 1942 there were four weeks of Chinook weather with continuous CnW conditions completely bare ground and not even enough frost to produce freezing and thawing of the unfurrowed ground. Wind maximum average over 20 miles per hour and occasionally 40 or more during flights with light planes difficult, but producing ideal conditions for heavier craft. On the other hand during the winter of early February 1936 the average temperature was several degrees below zero, snowfall was frequent and totaled from 15 to 20 inches during the month, being about twice the normal, and during low temperatures the snow stayed on the ground for weeks a rare occurrence. Normally 10 to 20 below is the coldest experienced conditions and occasionally temperatures between 30 and 40 below have occurred. This is mild compared with conditions encountered at Edmonton or Regina, however. At Lethbridge and Calgary conditions are intermediate between those at Great Falls and Edmonton. Average snowfall at Great Falls is practically the same as at Edmonton—only it does not accumulate at Great Falls.

## EDMONTON TO WHITEHORSE

The route from Edmonton to Whitehorse traverses about a thousand miles of plains and mountainous country. The first 400 miles is over level or slightly rolling prairie, the next third in narrowing canyon and mountain gorges, and the last portion over rugged mountain ridges. About 100 miles of open fields are in the cultivated, farm land; half of which is near Edmonton and the other half in the Peace River Valley beginning at Grande Prairie.

The airway inclines from Edmonton toward the Continental Divide which may soon be seen stretching like a wall from the northwest to the

## WEATHER SUMMARY

southeast horizon. On a clear day, about 500 miles of the Canadian Rockies may thus be seen in the west, with unbroken prairie and land and at 4,500 feet country to the north. A plane in this air route for a clear every obstruction along the way at Watson Lake. An elevation of miles, almost as would clear every ridge along the entire airway, horse to Fairbanks. However, from Grande Prairie to Port St. John and after the plane reaches converge on the airway 7,000 and 8,000 feet high and the wild gorge of the Liard River are entered and from the Liard River the summits 8,000' high are descended gracefully to the airway.

From September to the first of June, a plane is in the icing zone. The clouds flying through the danger of icing in clouds at all elevations of 7,000 feet or over which are required to clear the Cordillera, between Port Nelson and Whitehorse. This is a region of little cloudiness, mounted at Port Nelson and the plane can avoid difficult visibility so that a during the course of a year, if the pilot is alert to front conditions that involve icing danger in this region.

Warm type occlusions are frequently encountered over the ranges between Whitehorse and the northern Prairies. During the late summer and fall the greatest deal of moisture is contained in the layers of air between 6,000 feet and 18,000 feet - the levels at which flights over this territory must be made. Most of the moisture is mounted on the western slopes of the Interior to occasionally produce rapid cloud formation and slightly lowering ceilings from an alto-stratus deck in connection with cold fronts. If a pilot understands the nature of this phenomenon he can take advantage of the lee or the lee side of the mountain range, the lowest ceilings, the heaviest snow or the greatest icing danger occurs on the windward western slopes of the mountains. The lee side become tenuous and disappear within thirty or forty miles, and snowfall and heavy icing usually extends for only a few miles beyond a major summit.

The important thing to remember in this region is that prevailing winds blowing into may reach very high velocities aloft, 100 to 120 miles per hour from the WSW, to WNW, being not uncommonly from the NW. On the lee slopes will be warm, dry and the air turbulent at all flying levels, but ceilings will be high and the air will be clear and the pilot need not concern himself with icing danger, except in local dust squalls, and danger of surface fog, icing, low stratus or precipitation will be negligible at reasonable distances from the mountains.

Across the mountains bad weather may be encountered over the east of the higher ranges, but low cloud layers will seldom be unbroken for great distances, due to turbulence. The chances of encountering extensive layers of low clouds are greater when planes are greater when slowly moving frontal systems, or stationary fronts, override or parallel the Rockies, especially in May, June, and July. A plane flying in this area may need to fly at 15,000 feet or higher to top an unbroken layer of stratocumulus from Whitehorse to Grande Prairie with the weather in the latter part of the winter fogged in or the

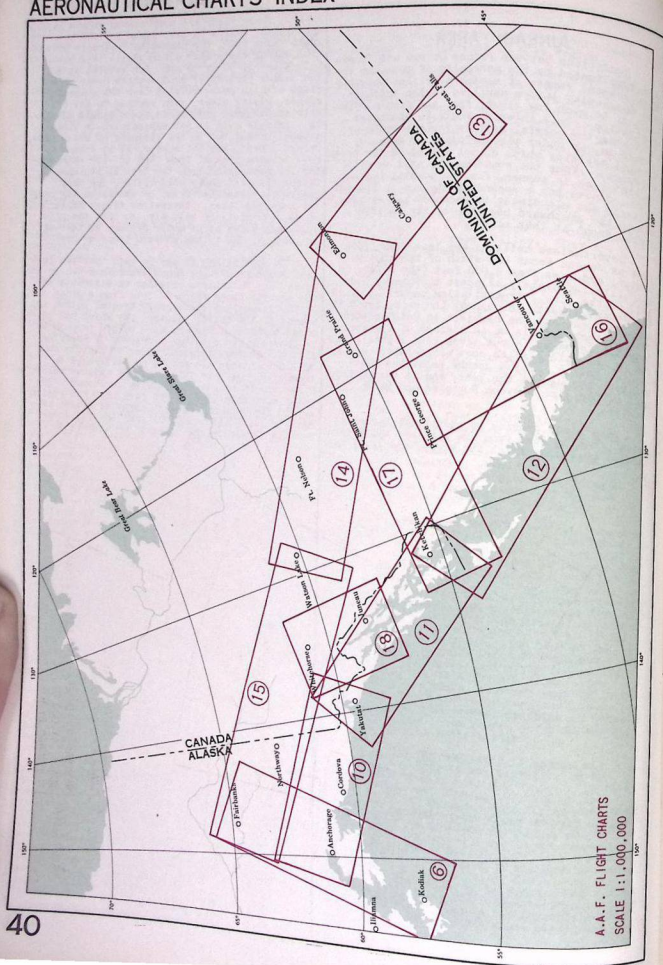






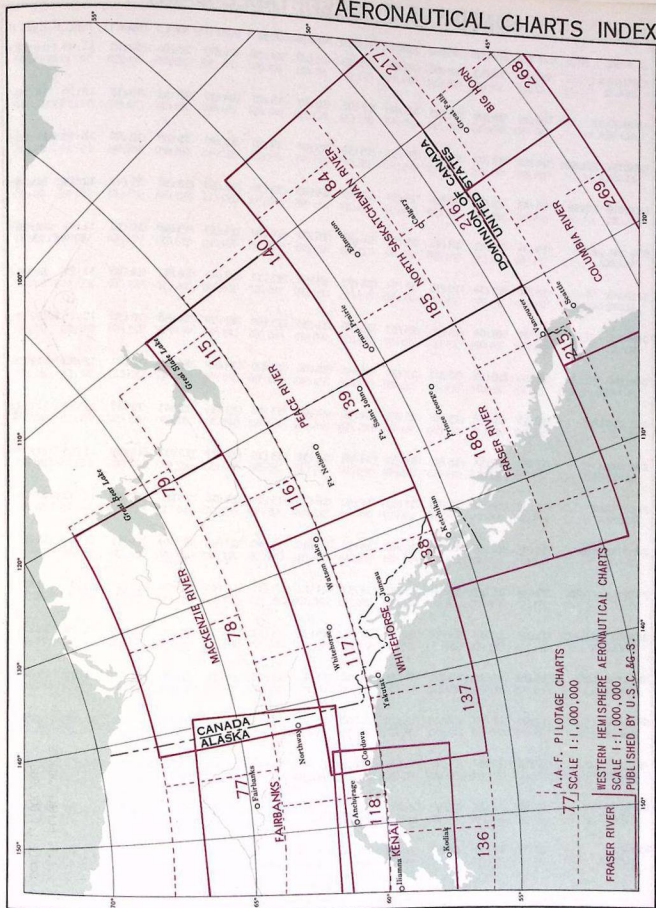


# AERONAUTICAL CHARTS INDEX



A.A.F. PILOTAGE CHARTS  
SCALE 1:1,000,000

# AERONAUTICAL CHARTS INDEX



A.A.F. PILOTAGE CHARTS  
SCALE 1:1,000,000  
WESTERN HEMISPHERE AERONAUTICAL CHARTS  
SCALE 1:1,000,000  
PUBLISHED BY U.S.C. & G.S.

## SUNRISE AND SUNSET TABLE G. C. T.

NAME	JAN. 1	JAN. 15	FEB. 1	FEB. 15	MAR. 1	MAR. 15	APR. 1	APR. 15	MAY 1	MAY 15	JUNE 1	JUNE 15
ATSIHTIK YUKON	18:29 23:58	18:13 24:27	17:36 25:10	16:58 25:52	16:13 26:34	15:28 27:11	14:38 27:56	13:49 28:32	13:00 29:16	12:21 29:53	11:44 30:32	11:27 31:05
ANCHORAGE ALASKA	19:09 24:50	18:59 24:48	18:23 25:18	17:46 26:42	17:01 27:24	16:17 28:00	15:27 28:44	14:39 29:20	13:51 30:03	13:12 30:40	12:36 31:18	12:00 31:40
ANNETTE ISLAND ALASKA	17:12 24:27	17:02 24:48	16:39 25:21	16:11 25:50	15:39 26:18	15:04 26:47	14:21 27:21	13:45 27:48	13:08 28:20	12:40 28:45	12:15 29:14	12:06 29:26
BEATON RIVER B. C.	16:43 23:32	16:33 23:54	16:06 24:32	15:34 25:02	15:04 25:34	14:23 26:05	13:36 26:41	12:58 27:11	12:18 27:44	11:47 28:14	11:19 28:45	11:08 29:00
BIG DELTA ALASKA	19:34 23:59	19:11 24:33	18:26 25:18	17:42 26:14	16:51 27:01	16:02 27:43	15:02 28:33	14:13 29:15	13:18 30:05	12:31 30:50	11:44 31:40	11:16 32:11
CALGARY ALBERTA	15:40 23:39	15:34 23:57	15:15 24:25	14:51 24:50	14:23 25:15	13:43 25:39	12:44 26:10	12:11 26:56	11:48 27:18	11:27 27:40	11:00 28:00	10:50 28:15
COMOX B. C.	16:19 24:28	16:04 24:45	15:55 25:11	15:33 25:37	15:06 26:00	14:36 26:23	13:59 26:50	13:30 27:12	12:58 27:37	12:36 27:58	12:16 28:19	12:00 28:30
COROVUA ALASKA	18:50 24:41	18:36 25:07	18:02 25:50	17:26 26:28	16:43 27:08	16:00 27:43	15:09 28:26	14:21 29:01	13:38 29:42	13:01 30:17	12:26 30:54	12:12 31:14
DOG CREEK B. C.	16:14 24:08	16:08 24:27	15:48 25:48	15:24 25:21	14:56 25:46	14:25 26:10	13:46 26:34	13:15 27:03	12:41 27:30	12:18 27:52	11:57 28:15	11:50 28:26
EDMONTON ALBERTA	15:50 23:24	15:44 23:43	15:21 24:15	14:55 24:52	14:24 25:10	13:52 25:36	13:10 26:02	12:37 26:33	12:11 27:02	11:35 27:26	11:13 27:51	11:04 28:04
FAIRBANKS ALASKA	19:57 23:50	19:30 24:29	18:36 25:28	17:52 26:17	17:00 27:08	16:10 27:50	15:07 28:42	14:16 29:16	13:18 30:19	12:28 31:07	11:30 32:05	10:36 33:04
FORT NELSON B. C.	17:05 23:22	16:53 23:47	16:22 24:27	15:48 25:08	15:10 25:36	14:30 26:10	13:40 26:50	12:59 27:22	12:15 28:00	11:41 28:33	11:09 29:07	10:56 29:26
FORT ST. JOHN B. C.	16:36 23:37	16:27 23:58	16:01 24:33	15:32 25:04	14:57 25:35	14:14 26:04	13:37 26:39	12:59 27:08	12:20 27:41	11:51 28:08	11:24 28:38	11:14 28:52
GRANDE PRAIRIE ALBERTA	16:23 23:36	16:15 23:56	15:50 24:30	15:22 25:02	14:49 25:29	14:14 25:57	13:31 26:31	12:55 26:58	12:17 27:30	11:49 27:56	11:24 28:24	11:15 28:37
GREAT FALLS MONTANA	15:13 23:43	15:10 23:59	14:53 24:25	14:33 24:47	14:08 25:08	13:40 25:29	13:06 25:53	12:38 26:13	12:09 26:55	11:49 27:14	11:24 27:44	11:15 27:52
GULKANA ALASKA	19:06 24:25	18:49 24:54	18:11 25:41	17:32 26:22	16:46 27:05	16:00 27:43	15:11 28:29	14:20 29:06	13:29 29:51	12:47 30:29	12:11 31:09	11:53 31:33
JUWEAU ALASKA	17:51 24:12	17:39 24:36	17:08 25:16	16:35 25:51	15:58 26:25	15:17 26:59	14:28 27:37	13:48 28:09	13:04 28:47	12:31 29:19	11:59 29:53	11:46 30:10
LETHBRIDGE ALBERTA	15:28 23:41	15:23 23:58	15:05 24:25	14:43 24:49	14:16 25:12	13:46 25:34	13:10 26:01	12:41 26:22	12:10 26:47	11:49 27:07	11:29 27:28	11:23 27:39
MEHANA ALASKA	19:57 24:02	19:31 24:39	18:43 25:37	17:58 26:24	17:06 27:12	16:16 27:56	15:14 28:47	14:24 29:31	13:27 30:22	12:38 31:10	11:46 32:04	11:06 32:47

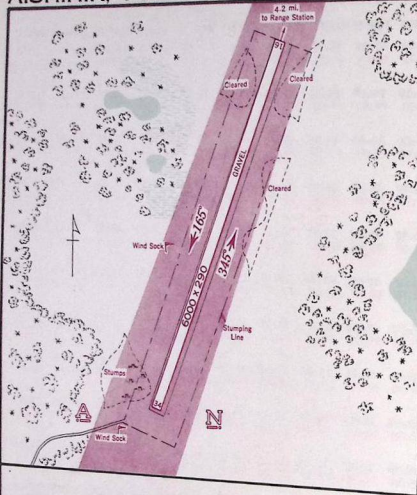
Note: Subtract 24:00 from sunset figures exceeding 24:00.

## SUNRISE AND SUNSET TABLE G. C. T.

NAME	JAN. 1	JAN. 15	FEB. 1	FEB. 15	MAR. 1	MAR. 15	APR. 1	APR. 15	MAY 1	MAY 15	JUNE 1	JUNE 15
NORTHWAY ALASKA	19:05 23:58	18:40 24:29	18:00 25:04	17:22 26:04	16:34 26:49	15:46 27:29	14:52 28:16	14:02 29:03	13:09 29:43	12:26 30:25	11:43 31:10	11:24 31:57
PENHOLD ALBERTA	15:45 23:33	15:39 23:52	15:19 24:21	14:54 24:47	14:24 25:14	13:53 25:39	13:14 26:08	12:42 26:32	12:07 27:02	11:43 27:23	11:22 27:46	11:14 27:58
PORT HARDY B. C.	16:31 24:34	16:26 24:51	16:06 25:20	15:43 25:44	15:16 26:12	14:45 26:32	14:08 27:02	13:38 27:22	13:05 27:48	12:42 28:10	12:22 28:31	12:15 28:43
PRINCE GEORGE B. C.	16:30 23:59	16:23 24:18	16:00 24:49	15:33 25:18	15:02 25:46	14:29 26:13	13:47 26:45	13:07 27:11	12:36 27:36	12:10 28:01	11:47 28:17	11:37 28:34
SEATTLE WASHINGTON	15:58 24:27	15:54 24:43	15:37 25:08	15:17 25:30	14:52 25:52	14:25 26:13	13:50 26:32	13:22 26:57	12:53 27:20	12:33 27:39	12:15 27:58	12:10 28:08
SEWARD ALASKA	19:01 25:02	18:48 25:28	18:15 26:10	17:37 26:47	17:00 27:23	16:18 28:01	15:27 28:39	14:45 29:13	14:05 29:53	13:59 30:27	13:23 31:03	12:48 31:22
SMITHERS B. C.	16:53 24:12	16:45 24:32	16:20 25:05	15:53 25:34	15:23 26:03	14:47 26:31	14:04 27:04	13:29 27:31	12:52 28:02	12:24 28:27	12:00 28:54	11:50 29:08
SMITH RIVER B. C.	17:27 23:32	17:15 23:57	16:42 24:39	16:06 25:16	15:28 25:51	14:46 26:26	13:55 27:07	13:13 27:40	12:28 28:08	11:52 28:34	11:18 29:09	11:04 29:28
SNAG YUKON	18:51 24:00	18:37 24:30	17:49 25:19	17:14 26:00	16:27 26:44	15:40 27:23	14:49 28:00	13:59 28:47	13:20 29:33	12:26 30:16	11:46 31:01	11:27 31:19
SUMMIT ALASKA	19:38 24:21	19:17 24:54	18:34 25:46	17:52 26:40	17:03 27:16	16:15 28:05	15:18 28:45	14:29 29:25	13:35 30:12	12:45 30:56	12:07 31:43	11:42 32:11
TALKEETNA ALASKA	19:28 24:19	19:10 25:09	18:31 25:57	17:51 26:39	17:05 27:22	16:18 28:01	15:27 28:47	14:37 29:25	13:45 30:11	13:04 30:50	12:25 31:32	12:05 31:57
TANACROSS ALASKA	19:15 23:58	18:54 24:30	18:12 25:22	17:29 26:07	16:40 26:53	15:52 27:33	14:55 28:22	14:06 29:02	13:12 29:51	12:27 30:37	11:43 31:24	11:18 31:49
TESLIN YUKON	17:54 23:55	17:41 24:21	17:08 25:08	16:32 25:53	15:53 26:32	15:11 27:12	14:20 28:06	13:38 28:52	12:52 29:31	12:16 30:16	11:41 30:56	11:27 31:25
VANCOUVER B. C.	16:03 24:28	15:59 24:44	15:41 25:10	15:21 25:34	14:56 26:16	14:28 26:40	13:53 27:01	13:25 27:24	12:55 27:43	12:34 28:03	12:16 28:23	12:11 28:33
WATSON LAKE YUKON	17:38 23:39	17:25 24:05	16:52 24:47	16:16 25:24	15:37 26:00	14:55 26:35	14:04 27:16	13:22 27:50	12:36 28:30	11:55 29:04	11:25 29:40	11:11 29:59
WHITEHORSE YUKON	18:07 23:50	17:57 24:22	17:28 25:06	16:45 25:45	16:02 26:25	15:18 27:01	14:27 27:42	13:42 28:20	12:54 29:02	12:17 29:37	11:41 30:15	11:26 30:35
YAKATAGA ALASKA	18:33 24:13	18:20 25:00	17:47 25:42	17:11 26:55	16:32 27:30	15:50 28:11	14:59 28:45	14:17 29:21	13:31 29:55	12:55 30:35	12:20 30:55	12:06 31:54
YAKUTAT ALASKA	18:16 24:27	18:04 24:51	17:32 25:32	16:57 26:09	16:19 26:44	15:38 27:18	14:46 27:58	13:55 28:32	13:25 29:11	12:56 29:44	12:12 30:18	11:54 30:37

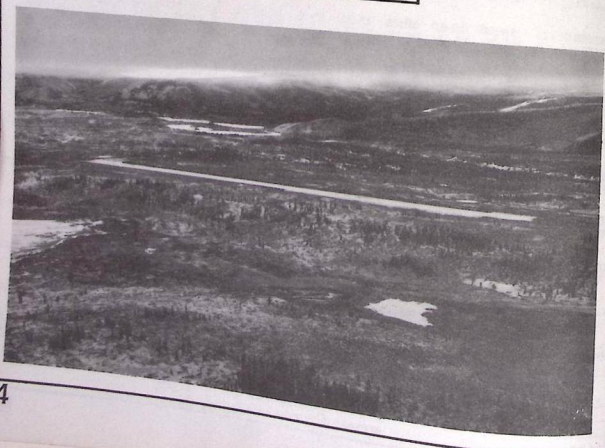
Note: Subtract 24:00 from sunset figures exceeding 24:00.

# AISHIHIK, YUKON TERRITORY, CANADA



## DESCRIPTION

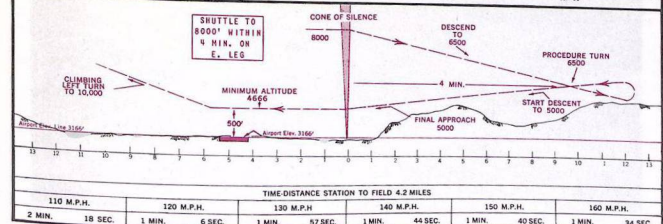
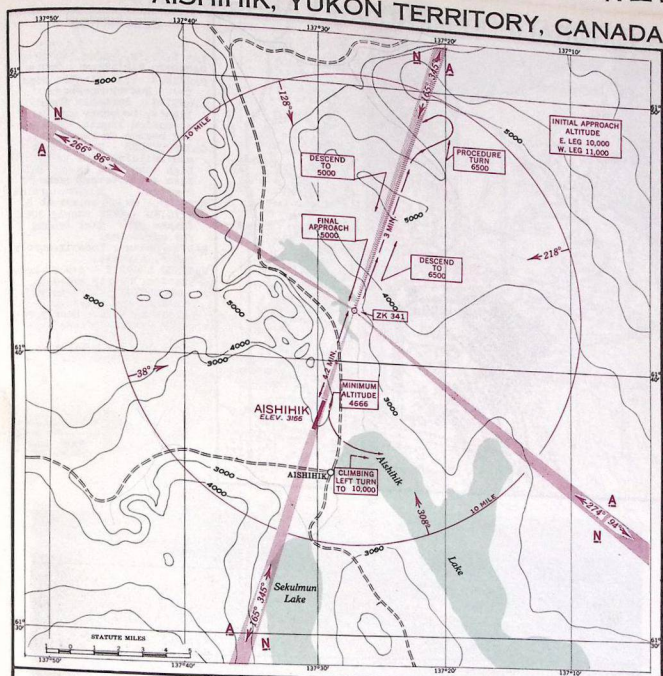
LAT. 61°38' N., LONG. 137°30' W.  
 MAGNETIC VARIATION - 330 E.  
 MARKINGS - Wind sock 500' from S. end of strip. Flag outline strip.  
 LIGHTING - Lighting to be installed. Lanterns at night.  
 OBSTRUCTIONS - Approaches clear. Outlying mountains on all sides except to S.  
 REPAIRS - NONE.  
 SERVICING - Emergency supply of fuel in drums.  
 RADIO - Airways, radio range.  
 WEATHER SERVICE - Hourly reports available.  
 ACCOMMODATIONS - Barracks under construction.



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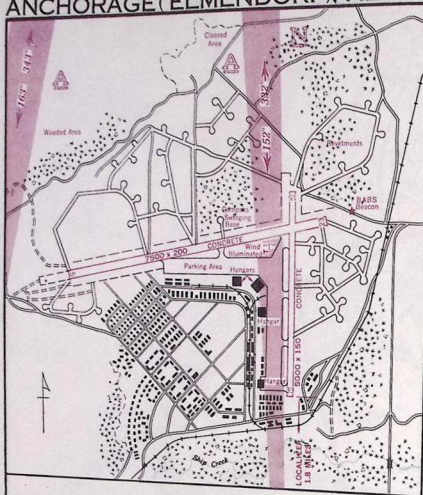
# АИШИХИКЪ АУКОНЪ ТЕРРИТОРИЯСЪ КАНАДАСЫ

## AISHIHIK, YUKON TERRITORY, CANADA



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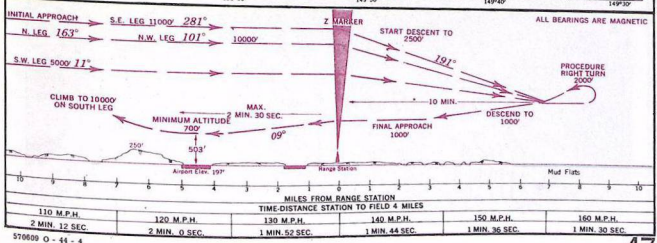
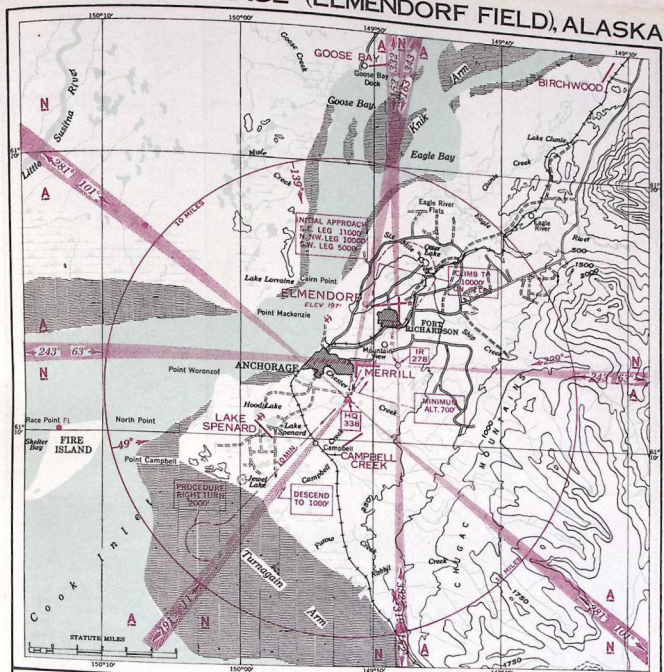
# ANCHORAGE (ELMENDORF), ALASKA



## DESCRIPTION

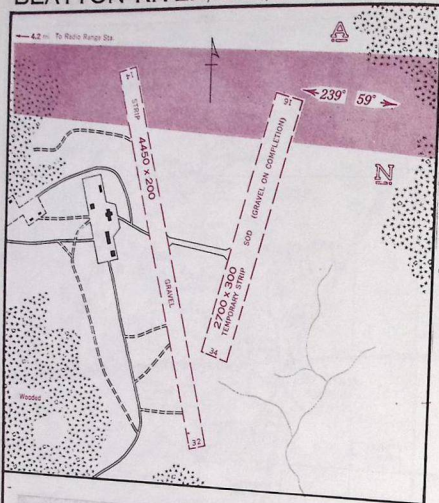
LAT. 63°15' N., LONG. 149°48' W.  
 MAGNETIC VARIATION - 27° E.  
 MARKINGS - Illuminated wind tee. Runway markers. Lights, boundary flood-structure lights. Flashing beacon on request.  
 OBSTRUCTIONS - Water tower and building area to SW. High mountains to E. NE. Five steel towers (300', 2 miles).  
 REPAIRS - Major repairs. SERVICING - Bulk supply 100 octane gas. Tank trucks for servicing.  
 RADIO - Range, localizer, tower, airways.  
 WEATHER SERVICE - AAF 24-hr. station, hourly reports.  
 ACCOMMODATIONS - Extensive barracks and messing; hotels in town. Hospital.  
 WEATHER - Rain 15" per year, snow 77" per year. FOG about 30 days per year.

# ANCHORAGE (ELMENDORF FIELD), ALASKA





# BEATTON RIVER, B.C., CANADA

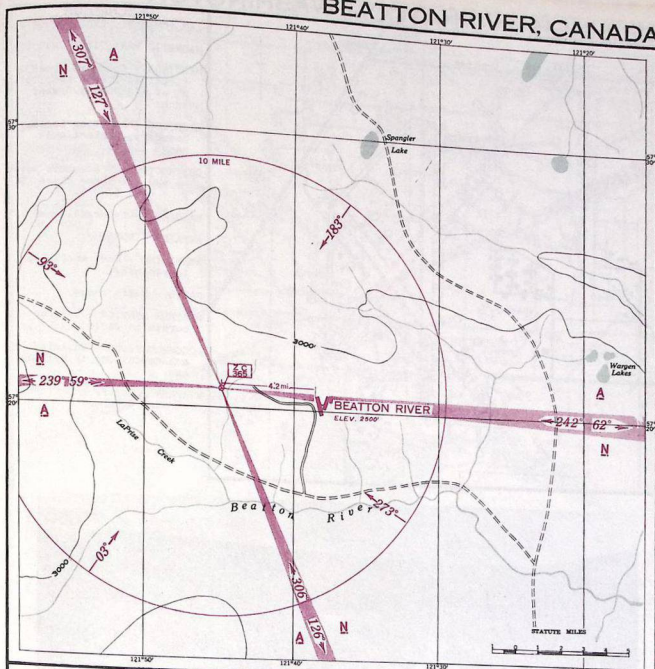


**DESCRIPTION**  
 LAT. 57°20' N., LONG. 121°38' W.  
 MAGNETIC VARIATION - 31°30' E.  
 MARKINGS - Area flagged.  
 LIGHTING - Boundary lights and beacon to be installed. Flares available.  
 OBSTRUCTIONS - NONE.  
 REPAIRS - NONE.  
 RADIO - Range, tower.  
 ACCOMMODATIONS - Barracks for 28 men.  
 OPERATED BY - RCAF.



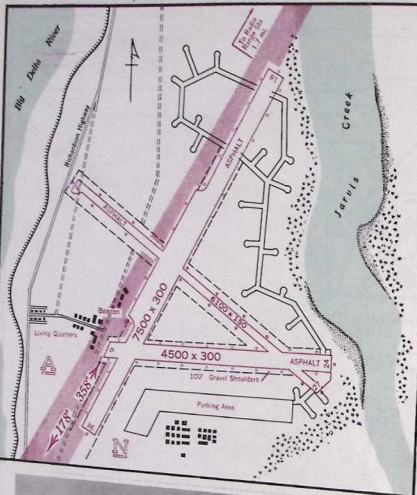
NANDANAY RIVER CANADIAN

# BEATTON RIVER, CANADA





# BIG DELTA, ALASKA



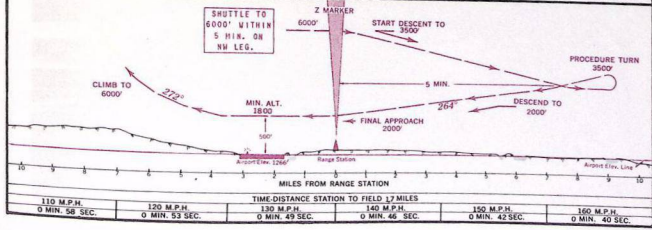
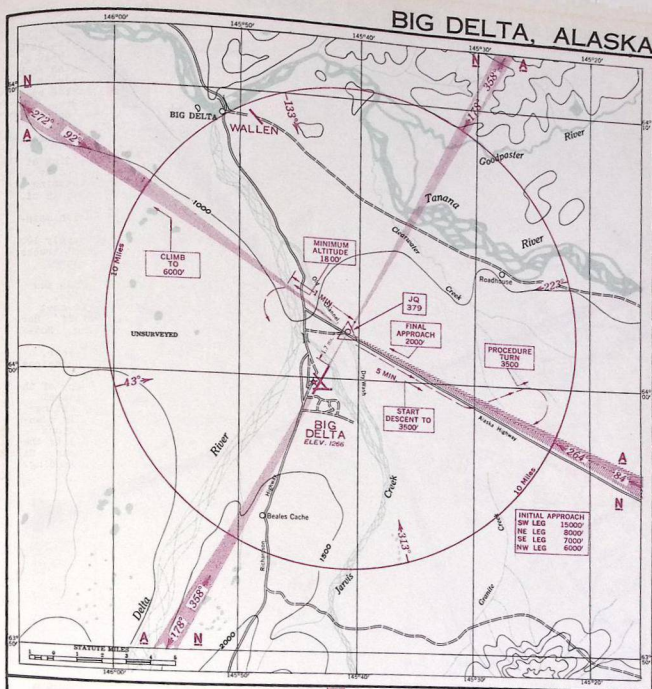
**DESCRIPTION**

LAT. 64°00' N., LONG. 145°04' W.  
**MAGNETIC VARIATION** - 51° E.  
**MARKINGS** - illuminated sock on tower at W. side of runway. Runways marked by small black flags.  
**LIGHTING** - Runway, boundary, approach, range and oblique beacons. Rotating beacons.  
**OBSTRUCTIONS** - Building at W. end of E/W runway. Mountain range reaching 13,740' to the S., 15 mi. distant.  
**REPAIRS** - 1st echelon maintenance.  
**SERVICING** - Bulk supply 100-octane fuel. Fuel trucks, tower.  
**RADIO** - Airways, range, tower.  
**WEATHER SERVICE** - CAA and AAF 24-hour station.  
**ACCOMMODATIONS** - Quonset huts for Army Staff. Barracks and messing. Hospital.  
**WEATHER** - Rain 20" year, snow 60" year. Occasional fog during winter.  
**REMARKS** - This is one of the best fields in Alaska. Wing covers and heating units, available in quantity. Wind conditions troublesome to pilots the majority of the year. Call CAA radio before landing.



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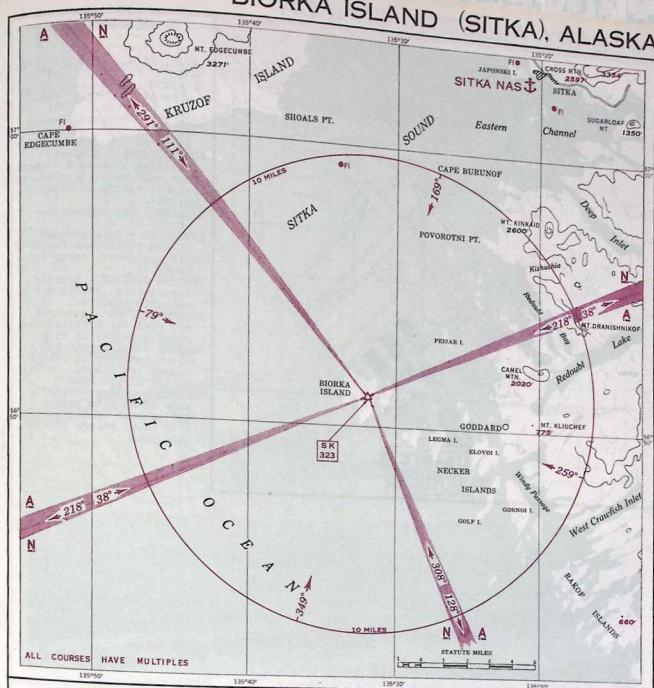
# BIG DELTA, ALASKA



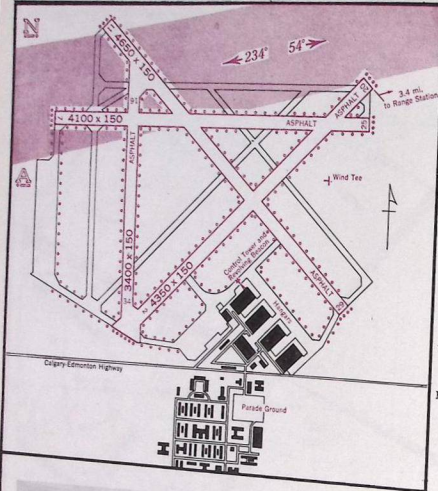
TIME-DISTANCE STATION TO FIELD 17 MILES			
110 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.
0 MIN. 58 SEC.	0 MIN. 53 SEC.	0 MIN. 49 SEC.	0 MIN. 46 SEC.
150 M.P.H.	160 M.P.H.	170 M.P.H.	180 M.P.H.
0 MIN. 42 SEC.	0 MIN. 38 SEC.	0 MIN. 35 SEC.	0 MIN. 32 SEC.

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# BIORKA ISLAND (SITKA), ALASKA



# CALGARY, ALBERTA, CANADA

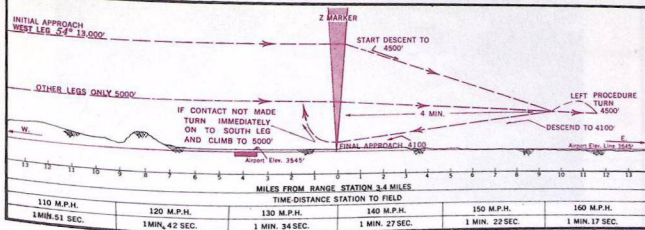
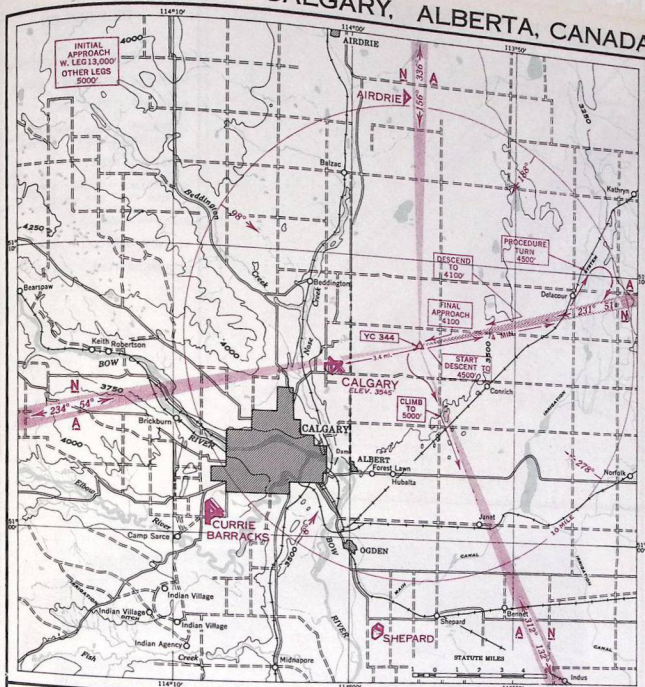


## DESCRIPTION

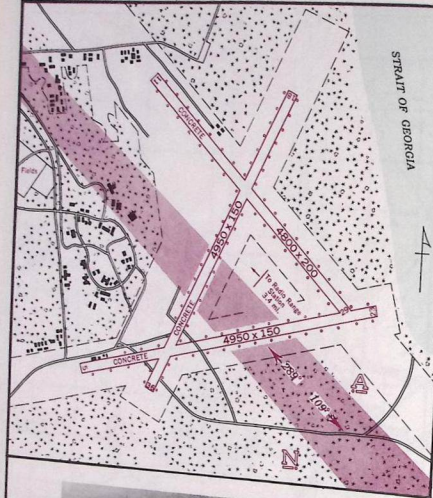
**LAT.** 51°06'N., **LONG.** 114°01'W.  
**MAGNETIC VARIATION** - 24° E.  
**MARKINGS** - Wind cone, illuminated wind tee. Runways numbered.  
**LIGHTING** - Rotating beacon flashing "CY" obstruction and boundary lights.  
**OBSTRUCTIONS** - Airport building area to S. Minimum safe altitude anywhere within radius of 25 mi. - 5,500'.  
**REPAIRS** - 3rd echelon repairs.  
**SERVICING** - Bulk storage 91 and 100 octane fuel.  
**RADIO** - Airways, range and tower.  
**WEATHER SERVICE** - Limited forecasting, hourly and synoptic reports.  
**ACCOMMODATIONS** - Quarters and mess for officers and men. Hospital in city.  
**WEATHER** - Fog rare. Upslope activity in winter causes low clouds. Visibility always good.  
**REMARKS** - Calgary controls and contact should be made with tower before entering this zone.



# CALGARY, ALBERTA, CANADA



# COMOX, B. C., CANADA



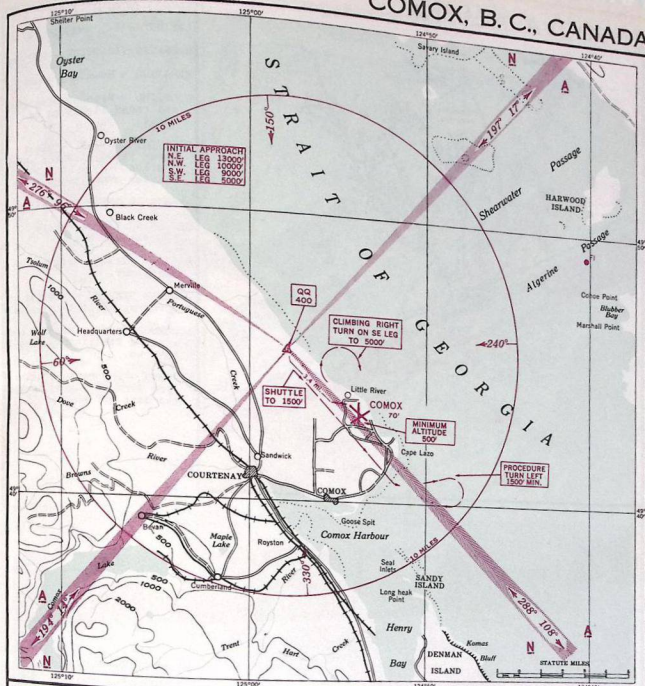
## DESCRIPTION

LAT. 49°43' N., LONG. 124°54' W.  
 MAGNETIC VARIATION - 25° E.  
 MARKINGS - Wind tee.  
 LIGHTING - Rotating beacon, contact lights. Flares.  
 REPAIRS - NONE.  
 SERVING - 90 and 100 octane fuel available.  
 WEATHER SERVICE - NONE.  
 ACCOMMODATIONS - NONE.

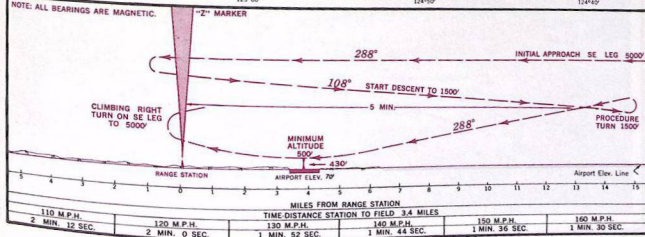


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# COMOX, B. C., CANADA



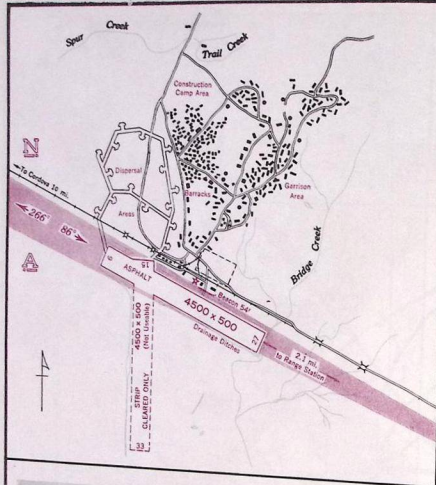
NOTE: ALL BEARINGS ARE MAGNETIC.



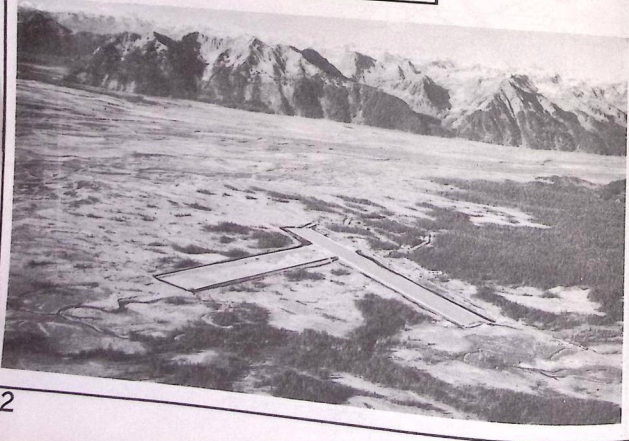
MILES FROM RANGE STATION			
110 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.
2 MIN. 12 SEC.	2 MIN. 0 SEC.	1 MIN. 52 SEC.	1 MIN. 44 SEC.
TIME DISTANCE STATION TO FIELD 1.4 MILES			
110 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.
2 MIN. 36 SEC.	2 MIN. 24 SEC.	1 MIN. 52 SEC.	1 MIN. 44 SEC.

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# CORDOVA, ALASKA

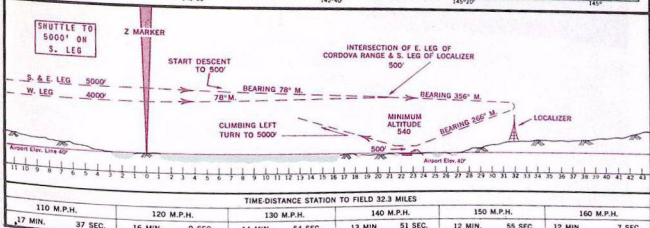
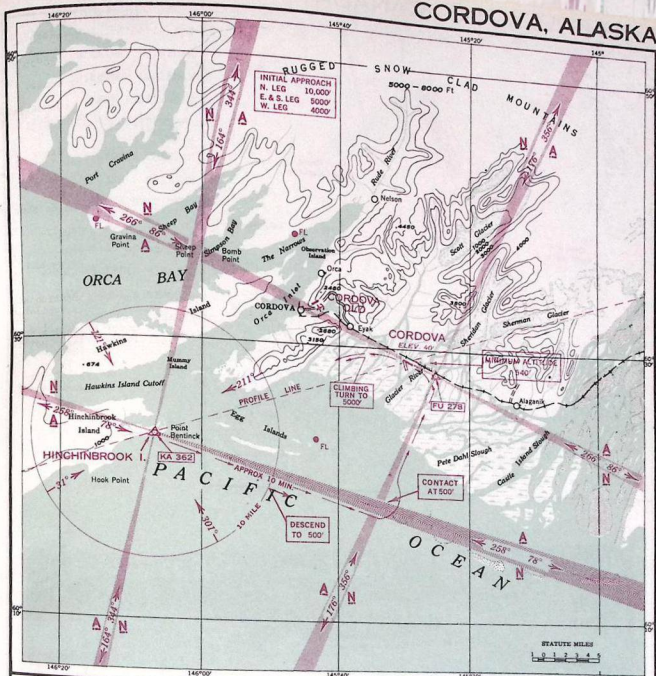


**DESCRIPTION**  
 LAT. 60°29' N., LONG. 145°30' W.  
 MAGNETIC VARIATION - 28°35' E  
 MARKINGS - Boundary cones.  
 LIGHTING - Beacon, boundary and range lights on request.  
 OBSTRUCTIONS - E. - Steel tower (150') lighted about 2 miles. W. - Childs Glacier overflow.  
 REPAIRS - USAF machine shop.  
 SERVICING - Bulk supply. 100 octane fuel.  
 RADIO - Airways, range and localizer.  
 WEATHER SERVICE - Station at Cordova. Reports available.  
 ACCOMMODATIONS - Housing and messing facilities. Hotels in town.  
 WEATHER - Fog rare. Occurs from June to August, about two days per month.



62

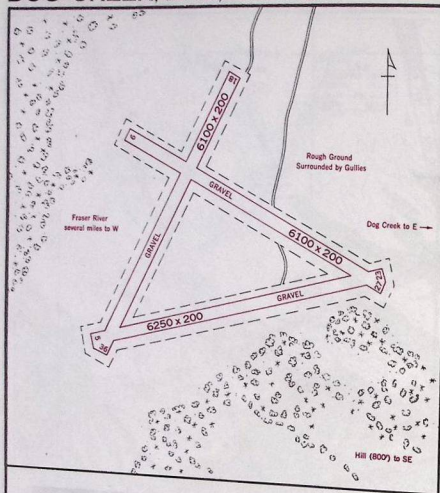
# CORDOVA, ALASKA



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63

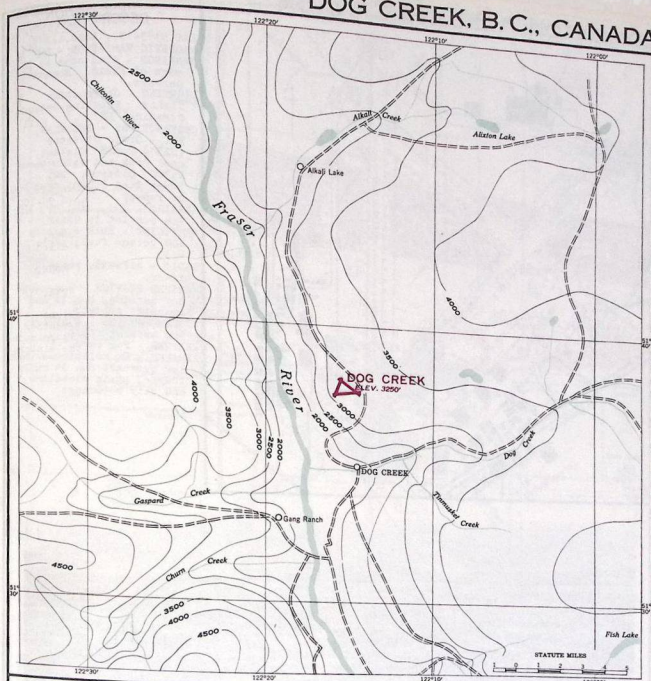
# DOG CREEK, B. C., CANADA



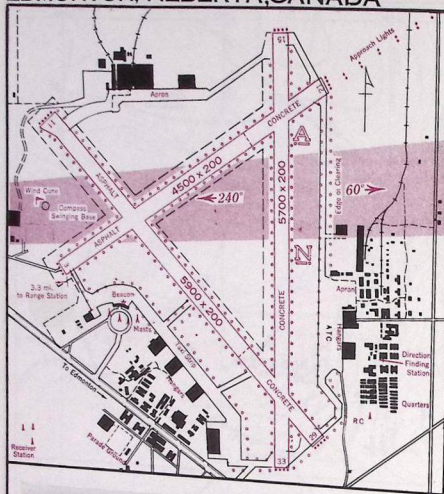
**DESCRIPTION**  
 LAT. 51°58' N., LONG. 122°16' W.  
 MAGNETIC VARIATION - 26° E.  
 MARKINGS - NONE.  
 LIGHTING - NONE.  
 OBSTRUCTIONS - SE. - Hill (800')  
 HANGARS - NONE.  
 REPAIRS - NONE.  
 SERVICING - Limited 90-100 octane gas.  
 RADIO - Control tower. Range to be installed.  
 WEATHER SERVICE - NONE.  
 ACCOMMODATIONS - NONE.  
 REMARKS - An excellent field under all-weather conditions. Will be maintained during the winter.



# DOG CREEK, B. C., CANADA



# EDMONTON, ALBERTA, CANADA



**DESCRIPTION**

LAT. 53°04' N. LONG. 113°03' W.  
 MAGNETIC VARIATION - 25° E.  
 MARKINGS - Wind cone at SW edge of field. Boundary markers.

**LIGHTING** - Obstruction lights. Rotating beacon flashing "EM".

**OBSTRUCTIONS** - SEE PLAN.  
 NW - Grain elevator (223') 2,408' distant; coal dock and water tower 2,300' distant. SW. Power line 1,000' from end of runway.

**REPAIRS** - 1st, 2nd, 3rd and 4th sections by USAAP.

**SERVICING** - Bulk quantity 100 octane fuel; ample oil.

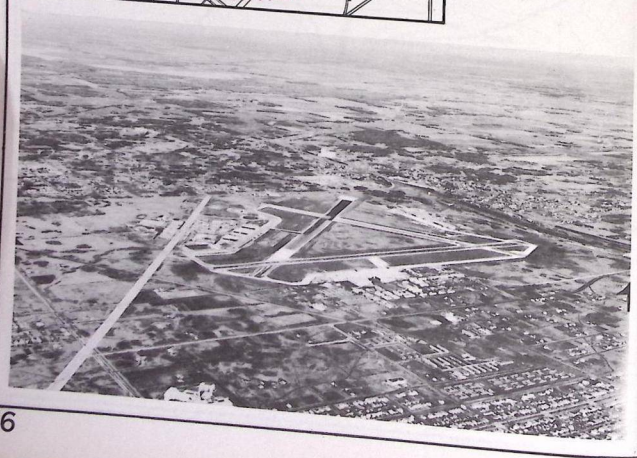
**RADIO** - Airways, range and tower.

**WEATHER SERVICE** - Forecasting service, hourly and synoptic reports.

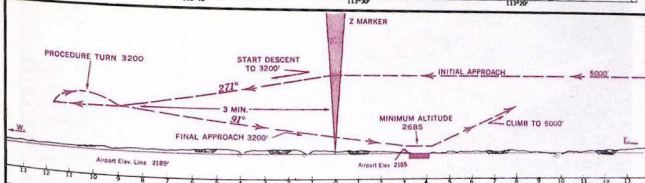
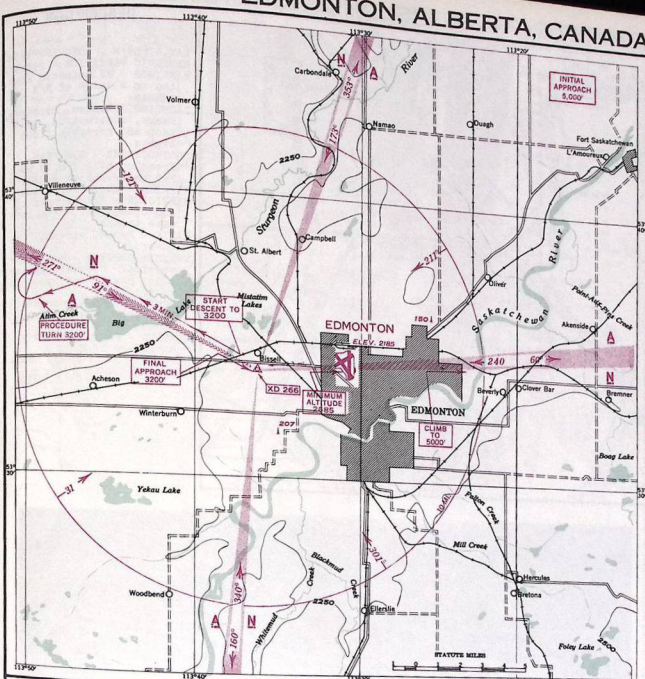
**ACCOMMODATIONS** - Quarters and mess at field.

**WEATHER** - Fog rare.

**REMARKS** - Do not circle under low overcast due to radio towers, grain elevators and city buildings.



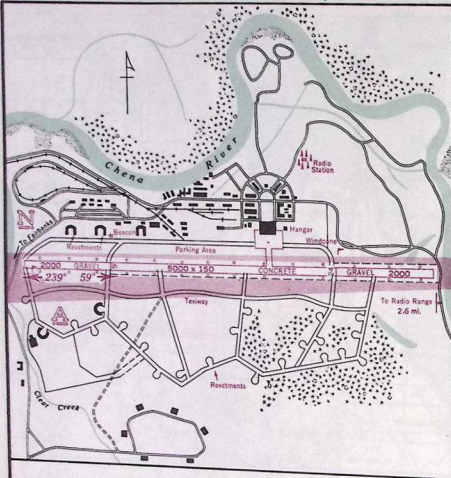
# EDMONTON, ALBERTA, CANADA



MILES FROM STATION					
TIME-DISTANCE STATION TO FIELD 3.3 MILES					
110 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.	150 M.P.H.	160 M.P.H.
1 MIN. 48 SEC.	1 MIN. 39 SEC.	1 MIN. 33 SEC.	1 MIN. 25 SEC.	1 MIN. 19 SEC.	1 MIN. 14 SEC.



# FAIRBANKS (LADD FIELD), ALASKA



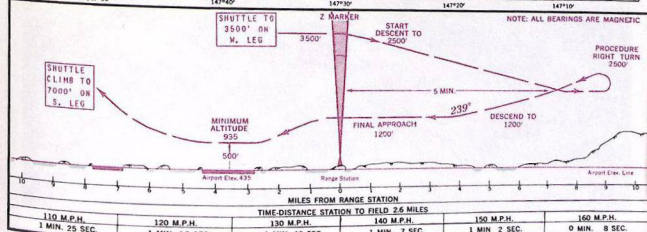
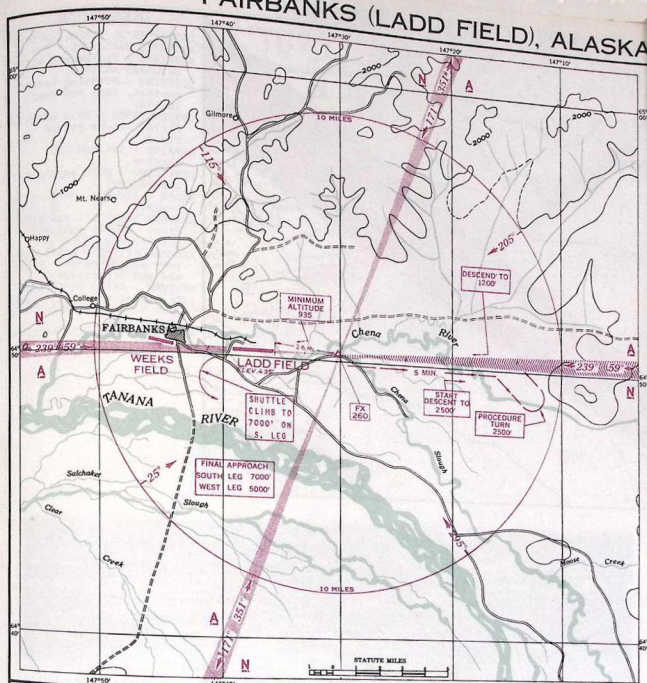
**DESCRIPTION**

**LAT. 64°50' N., LONG. 147°03' W.**  
**MAGNETIC VARIATION - 30° E.**  
**MARKINGS -** Wind tee N. or runway. Wind socks at each end.  
**LIGHTING -** Oscillating beacon, approach, runway and boundary lights.  
**OBSTRUCTIONS -** Hill across river at E. end of runway. 675' hill 1 mile N.  
**REPAIRS -** Complete repair depot.  
**SERVICING -** Bulk supply 91 and 100 octane fuel. Refueling trucks.  
**RADIO -** Airways, range and tower.  
**WEATHER SERVICE -** AAF 24-hr. station. Hourly reports.  
**ACCOMMODATIONS -** Barracks and officers quarters at field, mess. Hospital.  
**WEATHER -** Fog prevails when less than 40° F.  
**REMARKS -** Use approach procedure.



70

# FAIRBANKS (LADD FIELD), ALASKA



NOTE: ALL BEARINGS ARE MAGNETIC

PROCEDURE RIGHT TURN 2500

5 MIN.

SHUTTLE CLIMB TO 3500' ON W. LEG

SHUTTLE CLIMB TO 7000' ON S. LEG

MINIMUM ALTITUDE 935

START DESCENT TO 2500'

FINAL APPROACH 1200'

DESCEND TO 1200'

Range Station

Avionics Elev. 435'

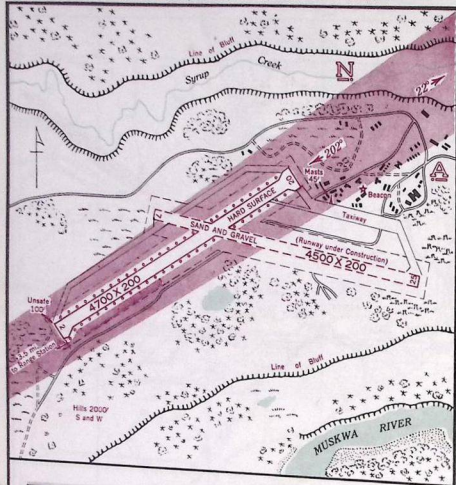
Avionics Elev. 2500'

MILES FROM RANGE STATION

110 M.P.H.	130 M.P.H.	150 M.P.H.	160 M.P.H.
1 MIN. 25 SEC.	1 MIN. 18 SEC.	1 MIN. 7 SEC.	0 MIN. 8 SEC.

71

# FORT NELSON, B. C., CANADA

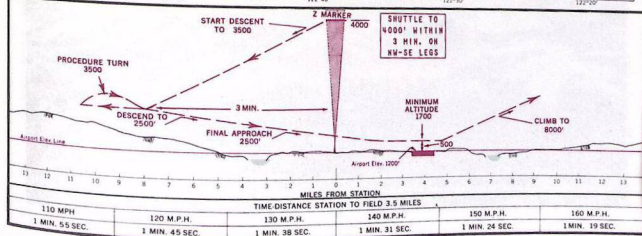
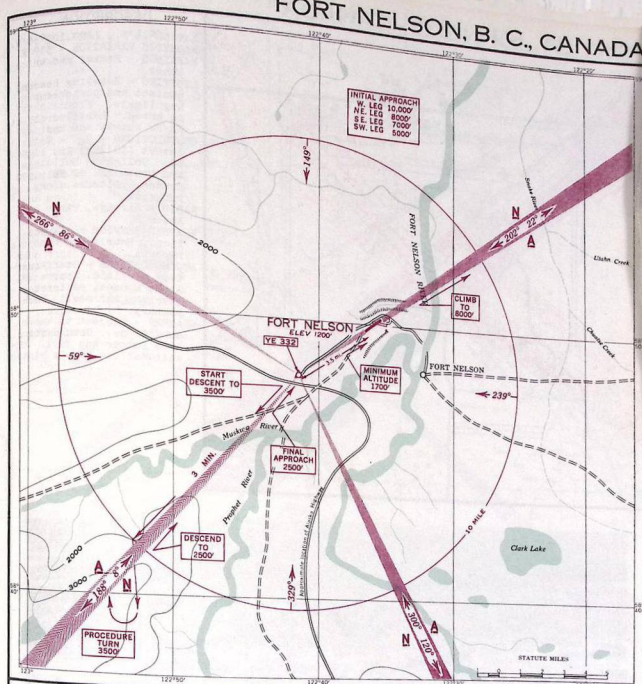


**DESCRIPTION**  
 LAT. 58°50' N., LONG. 122°36' W.  
 MAGNETIC VARIATION - 330 E.  
 MARKINGS - Orange and white boundary markers.  
 LIGHTING - Rotating beacon, contact, taxi and ramp lights.  
 OBSTRUCTIONS - Well drill at field. Trees around field.  
 REPAIRS - 1st and 2nd echelon.  
 SERVICING - Bulk supply 100 octane fuel.  
 RADIO - Airways, range and tower.  
 WEATHER SERVICE - AAF station. Hourly and synoptic reports.  
 ACCOMMODATIONS - Staff quarters and barracks. First aid and dispensary.  
 WEATHER - often restricted in summer and fall. Subject to considerable ground fog.  
 REMARKS - Land with caution.



72

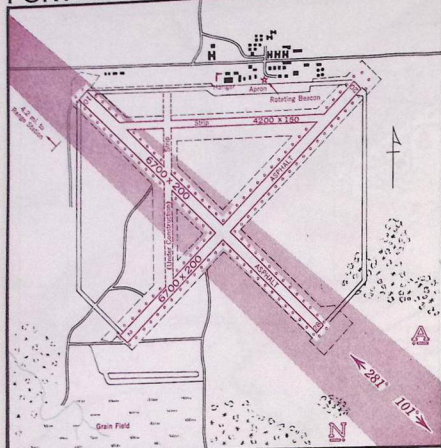
# FORT NELSON, B. C., CANADA



MIN. DIST. FROM STATION					
110 MPH	120 M.P.H.	130 M.P.H.	140 M.P.H.	150 M.P.H.	160 M.P.H.
1 MIN. 55 SEC.	1 MIN. 45 SEC.	1 MIN. 38 SEC.	1 MIN. 31 SEC.	1 MIN. 24 SEC.	1 MIN. 19 SEC.

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# FORT ST. JOHN, B. C., CANADA



## DESCRIPTION

LAT. 56°14' N., LONG. 120°04' W.  
MAGNETIC VARIATION - 30° E.  
MARKINGS - Runway marker cones.

**LIGHTING** - Rotating beacon, contact and portable runway lights. Floodlights on apron. Lanterns on NE/SW runway and taxiway.  
**OBSTRUCTIONS** - NW - Radio towers (50') 2 mi., lighted. Unlighted buildings and brush SE. of NE approach. Ditches along runways.

**RADIO** - Airways, range and tower.

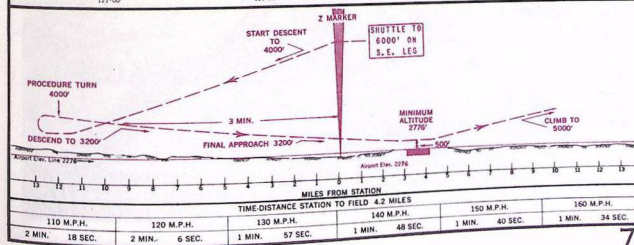
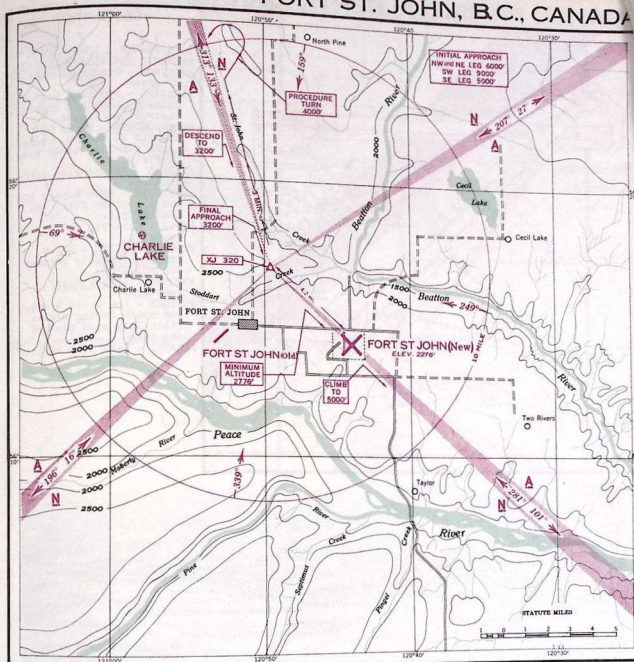
**WEATHER SERVICE** - AAF station. Hourly and synoptic reports.

**ACCOMMODATIONS** - Staff quarters at field. Barracks, stout houses, officers quarters and mess. Dispensary.

**WEATHER** - Subject to smoke conditions. Ground fog late summer and fall. Occasional ice fog in winter.

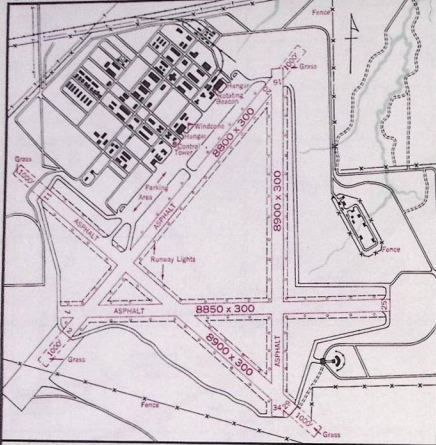


# FORT ST. JOHN, B. C., CANADA





# GREAT FALLS (ARMY AIR BASE), MONT



## DESCRIPTION

LAT. 47°30' N., LONG. 111°10' W.

MAGNETIC VARIATION - 20° E.

MARKINGS - Field fenced.

LIGHTING - Rotating beacon.  
Stationary and mobile  
floodlights, runway lights

OBSTRUCTIONS - Stacks 2½ mi.  
NW.

REPAIRS - Major army and  
navy repair facilities;  
major engine repairs.

SERVICING - Available.

RADIO - Airways, radio range  
at Gore Field, control  
tower.

WEATHER SERVICE - 24-hour  
weather service. Army  
weather station.

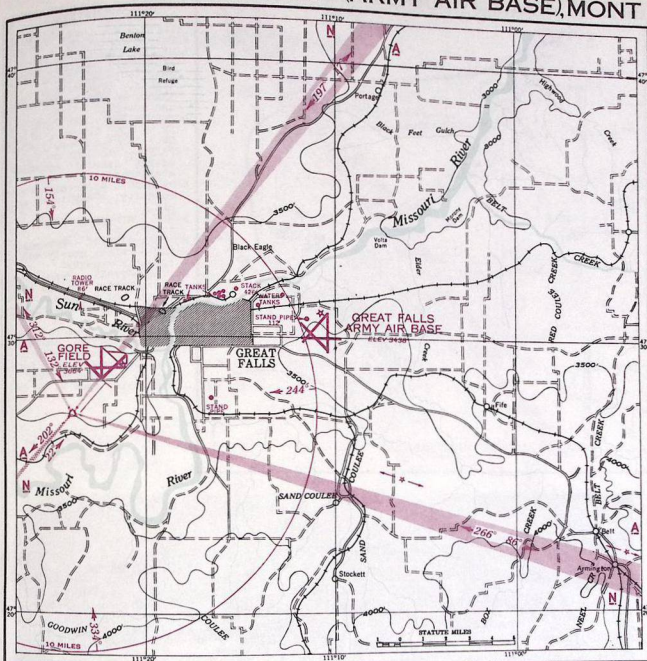
ACCOMMODATIONS - Army can-  
tonment; messing.

WEATHER - Fog 30 days an-  
nually. Precipitation -  
14" annually.

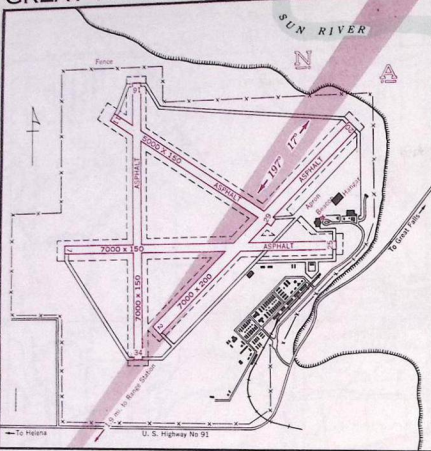
OPERATED BY - USAAF.



# GREAT FALLS (ARMY AIR BASE), MONT



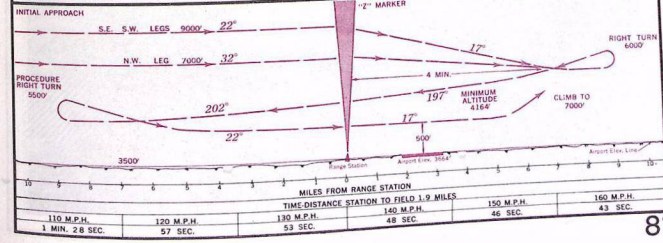
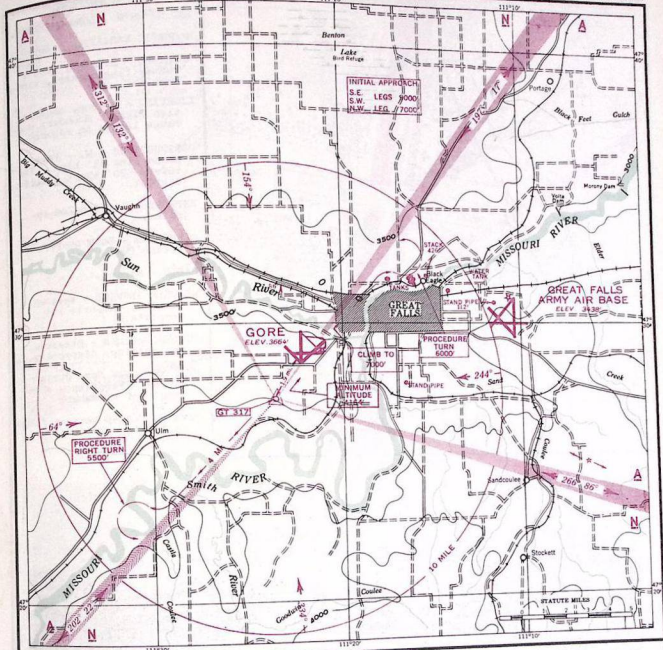
# GREAT FALLS (GORE FIELD), MONTANA



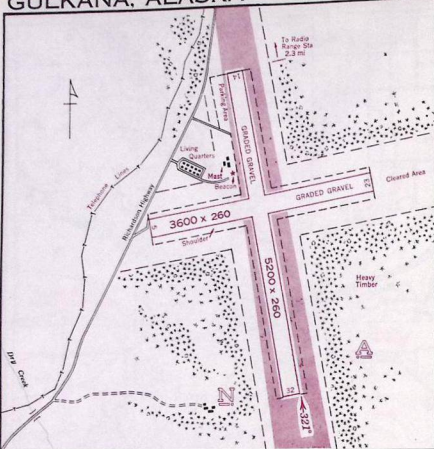
**DESCRIPTION**  
 LAT. 47°29' N. LONG. 111°22' W.  
 MAGNETIC VARIATION - 20° E.  
**LIGHTING** - Revolving and stationary beacons. Boundary, range and flood lights. Obstruction lights on all buildings and towers.  
**OBSTRUCTIONS** - SEE PLAN.  
 SW. - 135' tower 2 1/2 miles.  
 NW. - 150' towers, 3/4 mi.  
**REPAIRS** - 4th echelon repairs. Complete overhaul available.  
**SERVICING** - 91 octane gas in quantity. Tank truck and pit.  
**RADIO** - Airways, range, tower.  
**WEATHER SERVICE** - Forecasting service; hourly and synoptic reports.  
**ACCOMMODATIONS** - Barracks and quarters for 520 officers and 1,700 e.m.  
**WEATHER** - Fog 30 days annually.  
**REMARKS** - Bad downdrafts at edge of plateau, dangerous on approach or take-off from runway 20. Runway 25 bad when strong winds blow from W. or SW.



# GREAT FALLS (GORE FIELD), MONTANA



# GULKANA, ALASKA



## DESCRIPTION

LAT. 62°09'N., LONG. 145°29'W.

MAGNETIC VARIATION - 29°40'E

MARKINGS - Boundary cones, runway flag markers, wind sock.

LIGHTING - Beacon, obstruction lights. Boundary and range lights on request.

OBSTRUCTIONS - W. - Telephone line 15' high. Two towers 500' apart 3 miles distant.

REPAIRS - 1st echelon repairs.

SERVICING - Bulk supply 100 octane fuel.

RADIO - Range.

WEATHER SERVICE - Weather station. Reports not complete.

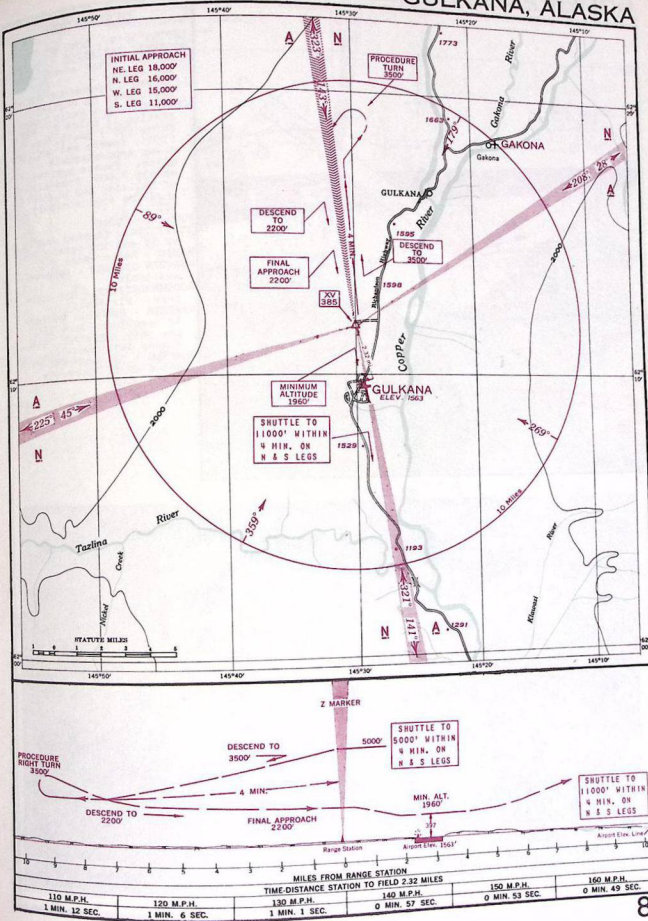
ACCOMMODATIONS - Barracks and messing, dispensary.

WEATHER - Low fogs during winter. First snow about middle of November.

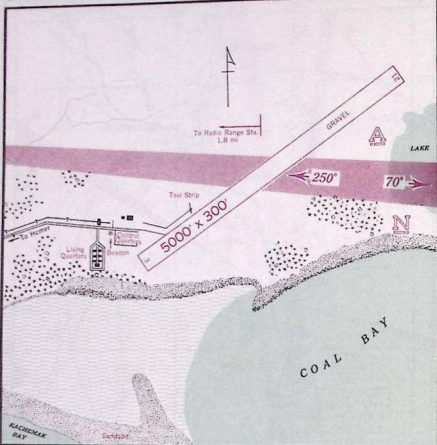
REMARKS - Stay between fields on landing or take-off.



# GULKANA, ALASKA



# HOMER, ALASKA



## DESCRIPTION

LAT. 59°38' N., LONG. 151°30' W.  
MAGNETIC VARIATION - 25° E.  
MARKINGS - Wind sock, boundary cones.

**LIGHTING** - Beacon and boundary lights on request.  
**OBSTRUCTIONS** - Radio range station 1 1/2 miles W. NNW. - Three (50') masts, two (150') towers and one (98') tower approximately 2 miles. Towers approximately 2,000' from slope of hillside and highest ones are approximately 400'.

**REPAIRS** - NONE.  
**SERVICING** - Limited supply of 80 and 100-octane gas.  
**RADIO** - Radio range.

**WEATHER SERVICE** - Reports available.

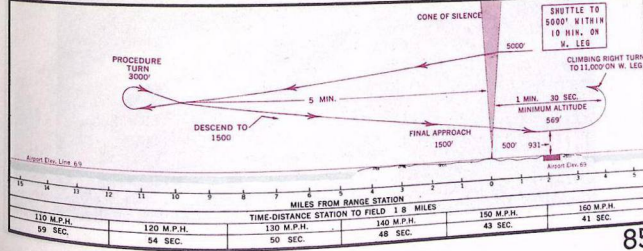
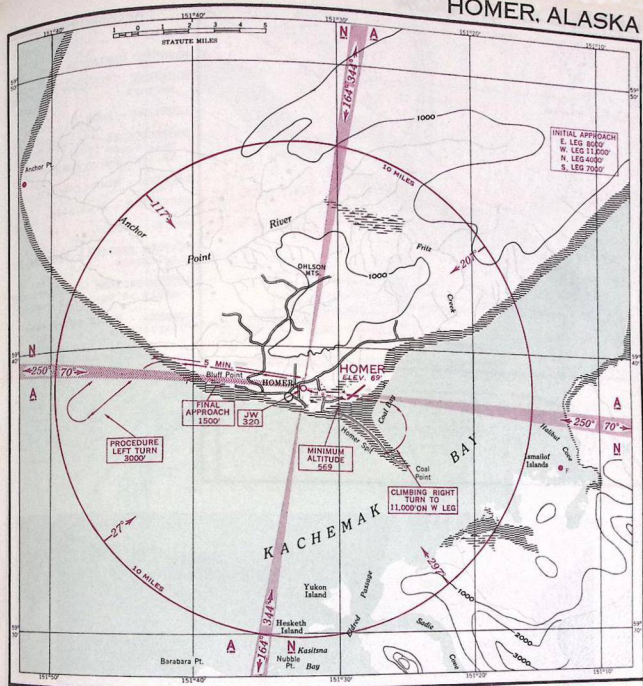
**ACCOMMODATIONS** - CAA quarters. First aid.

**WEATHER** - Rainfall average 42" per year; snow 140" per year. Average 201 cloudy days annually.

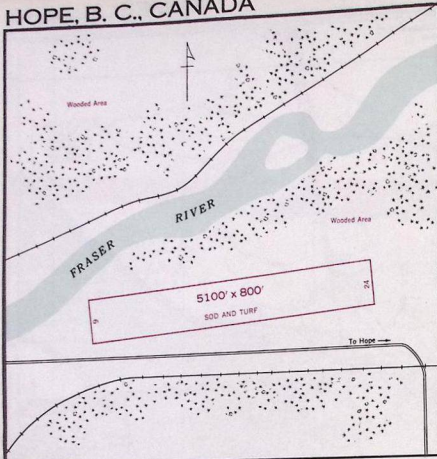
**REMARKS** - Has been designated as an emergency field only.



# HOMER, ALASKA

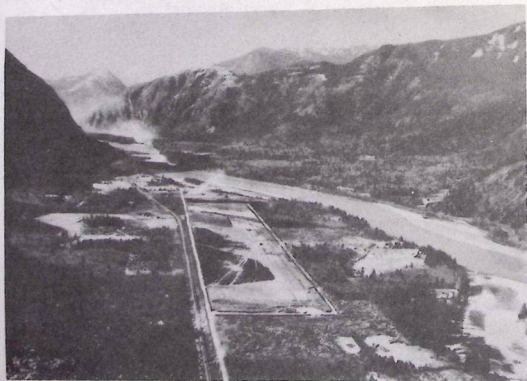


# HOPE, B. C., CANADA

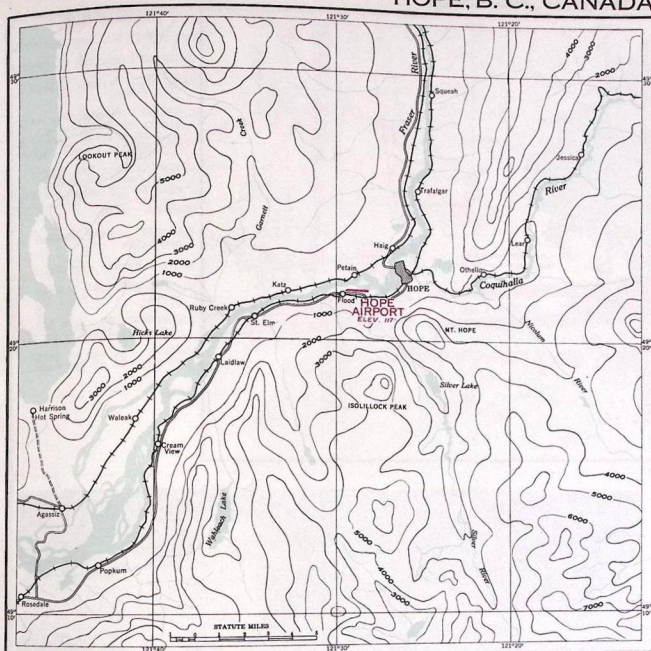


## DESCRIPTION

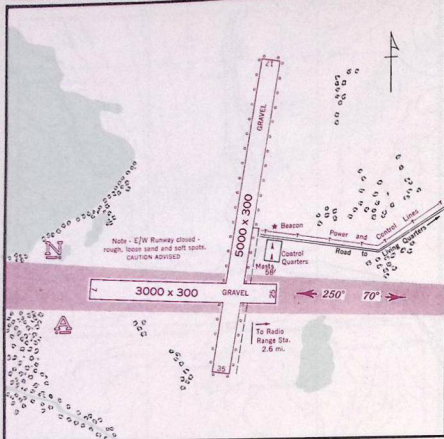
LAT. 49°22' N., LONG. 121°29' W.  
 MAGNETIC VARIATION - 24° E.  
 MARKINGS - Circular boundary markers.  
 LIGHTING - NONE.  
 OBSTRUCTIONS - E. and W. - Tall trees (700'). S., SE. and SW. - Mountains.  
 REPAIRS - Minor repairs.  
 SERVICING - Available.  
 RADIO - NONE.  
 WEATHER SERVICE - Weather by telegraph.  
 ACCOMMODATIONS - Quarters and meals in town.  
 REMARKS - Field under construction.



# HOPE, B. C., CANADA



# ILIAMNA, ALASKA

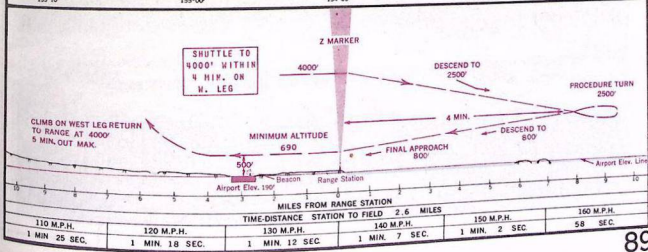
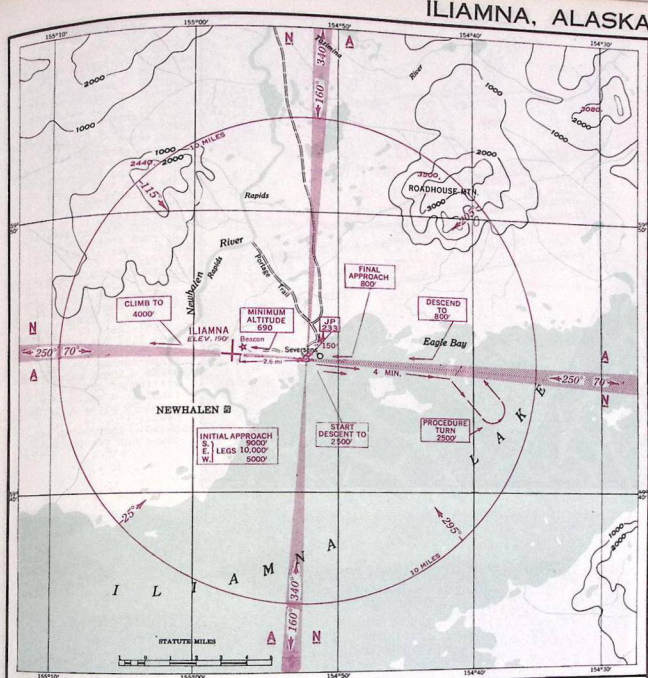


## DESCRIPTION

LAT. 59°45' N., LONG. 154°07' W  
 MAGNETIC VARIATION - 23°30' E  
 MARKINGS - Hazards marked with flags.  
 LIGHTING - Beacon, boundary lights on 17-35 runway only on request. Obstruction lights on all night.  
 OBSTRUCTIONS - Two (150') towers approximately 1 mile NE. of range station.  
 REPAIRS - NONE.  
 SERVICING - Very limited quantity.  
 RADIO - Range, airways.  
 WEATHER SERVICE - Hourly reports.  
 ACCOMMODATIONS - Limited. CAA quarters.  
 WEATHER - Cloudy or partly cloudy 90% of the time.

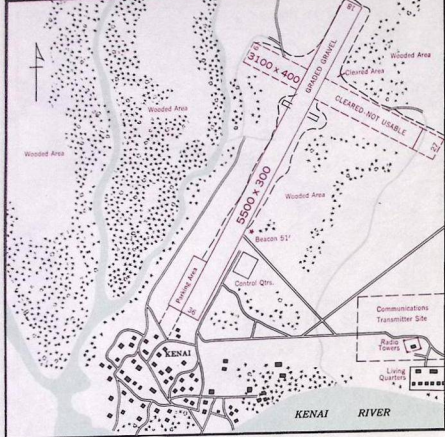


# ILIAMNA, ALASKA



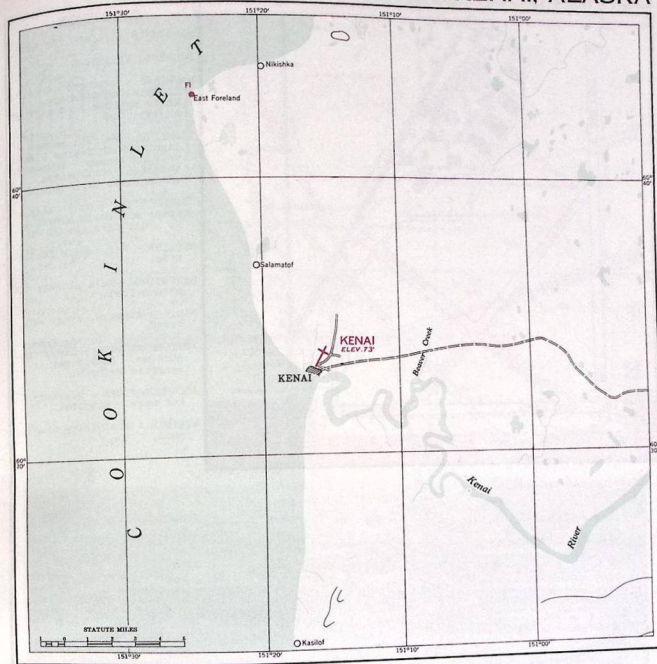
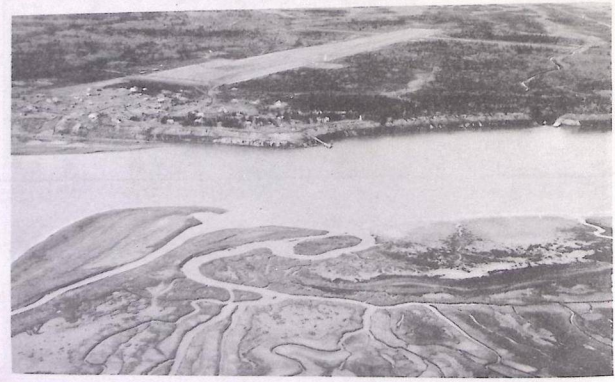


KENAI, ALASKA

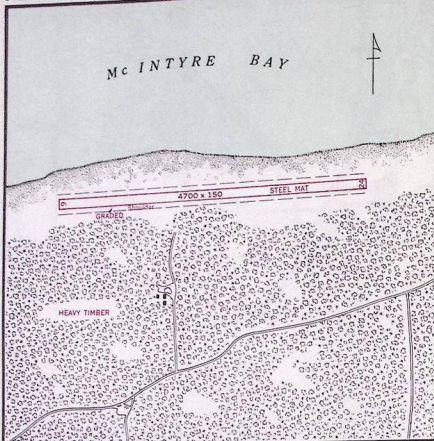


DESCRIPTION

LAT. 60°34' N. . LONG. 151°16' W.  
 MAGNETIC VARIATION - 26° E.  
 MARKINGS - Wind cone, boundary cones.  
 LIGHTING - Beacon, boundary and range lights on request. Obstruction lights on all night.  
 OBSTRUCTIONS - S. - Antenna poles and trees.  
 REPAIRS - NONE.  
 RADIO - Airways, tower.  
 WEATHER SERVICE - Reports available.  
 ACCOMMODATIONS - CAA quarters and limited accommodations in town.  
 WEATHER - Little fog from December to February. Low clouds build up against mountains.

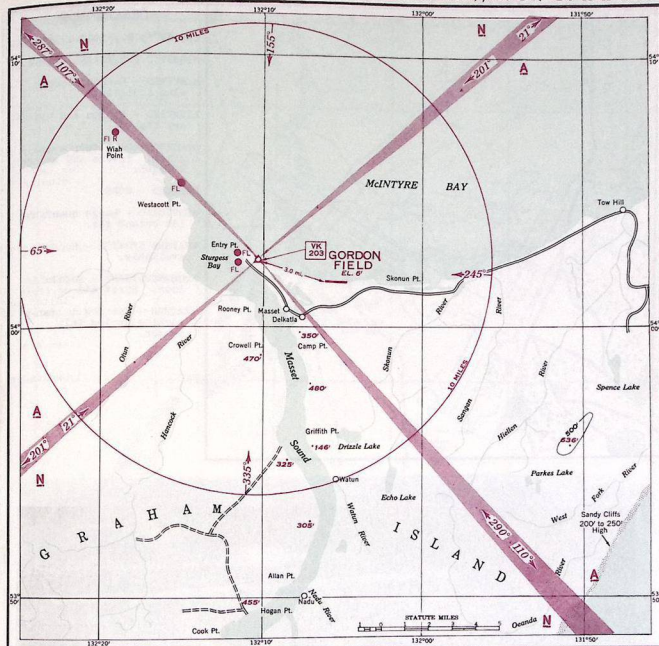






DESCRIPTION

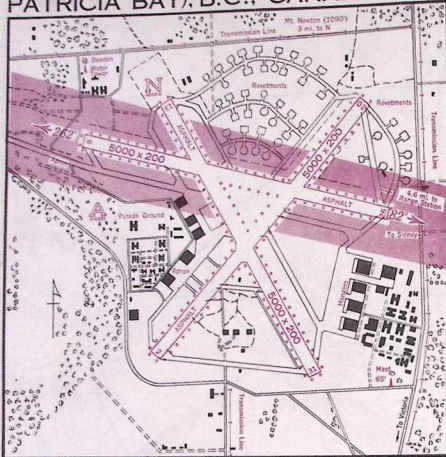
LAT. 54°02' N., LONG. 132°05' W.  
 MAGNETIC VARIATION - 28° E.  
 MARKINGS - Wind sock.  
 LIGHTING - NONE.  
 OBSTRUCTIONS - Approaches good. Ridge of trees 3,000' W. end of runway.  
 REPAIRS - Servicing; emergency repairs including 2 mechanics.  
 SERVICING - 100-octane fuel available.  
 RADIO - Radio range, control tower.  
 WEATHER SERVICE - NONE.  
 ACCOMMODATIONS - Limited accommodations for transients.  
 OPERATED BY - Western Air Command.  
 REMARKS - Formerly known as Massett Field.







# PATRICIA BAY, B.C., CANADA

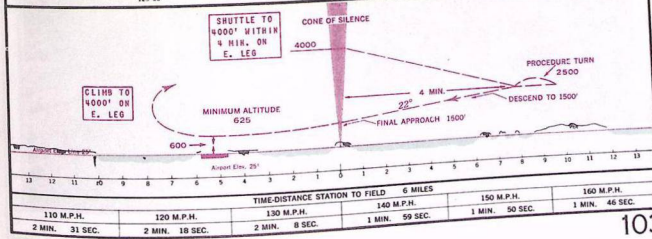
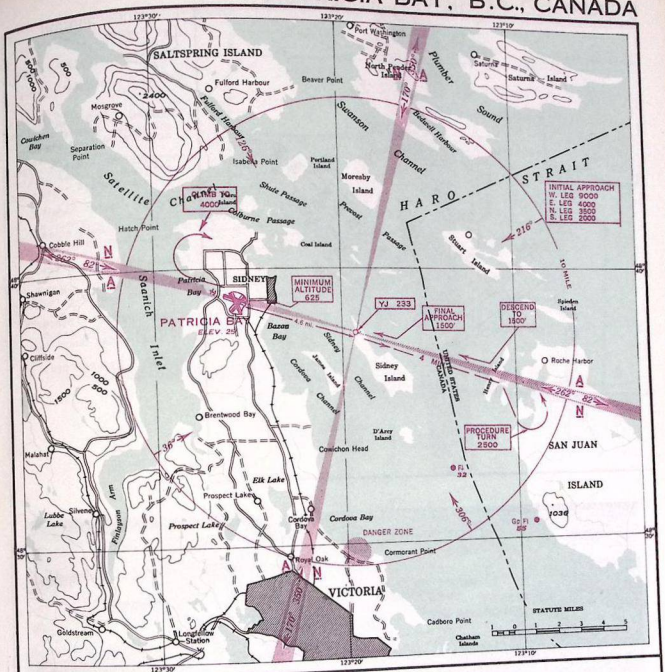


## DESCRIPTION

- LAT. 48°59' N., LONG. 123°26' W.  
 MAGNETIC VARIATION - 24° E.  
 MARKINGS - Wind sock and illuminated wind tee.  
 LIGHTING - Beacon, contact and obstruction lights. Runway flare path.  
 OBSTRUCTIONS - Buildings and hangars E. and W.  
 REPAIRS - Maintenance and minor repairs.  
 SERVICING - Bulk supplies of 90 and 100 octane fuel.  
 RADIO - Airways, range and cover.  
 WEATHER SERVICE - D.O.T. station.  
 ACCOMMODATIONS - Barracks and messing; hospital. Hotel in Sidney.  
 WEATHER - Local fogs during winter.

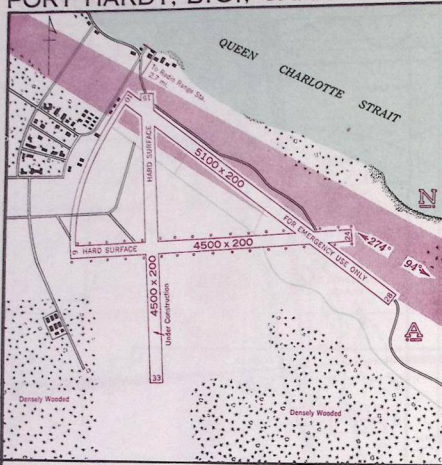


# PATRICIA BAY, B.C., CANADA





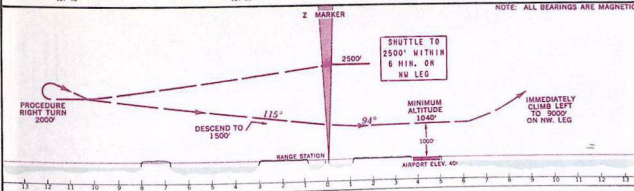
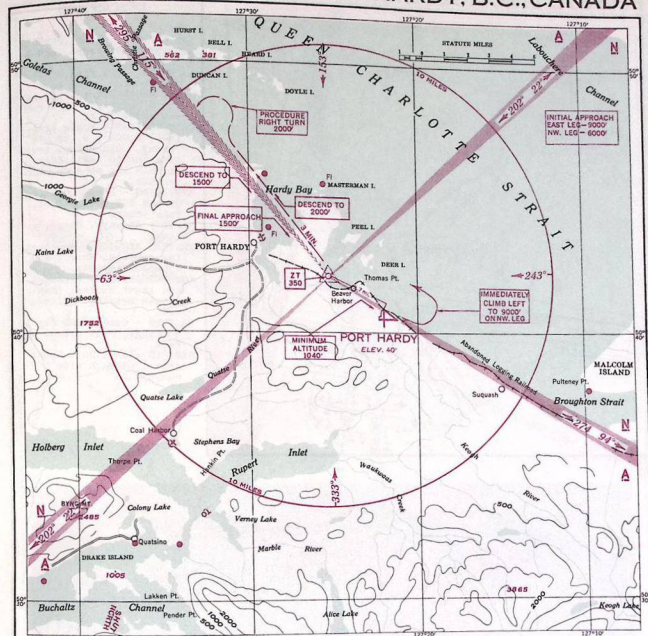
# PORT HARDY, B.C., CANADA



**DESCRIPTION**  
 LAT. 50°40' N., LONG. 127°23' W.  
 MAGNETIC VARIATION - 26° E.  
 MARKINGS - SEE PLAN.  
 LIGHTING - Rotating beacon, contact lights.  
 OBSTRUCTIONS - Trees in all directions  
 REPAIRS - Routine maintenance.  
 SERVICING - 90 and 100 octane fuel.  
 ACCOMMODATIONS - NONE.  
 WEATHER - Fog during July to September.



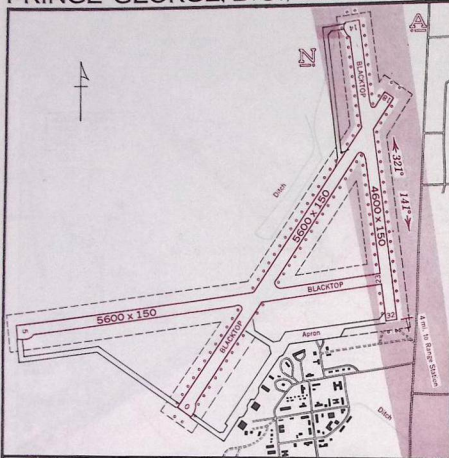
# PORT HARDY, B.C., CANADA



TIME-DISTANCE STATION TO FIELD 2.7 MILES

130 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.	150 M.P.H.	160 M.P.H.
1 MIN. 29 SEC.	1 MIN. 21 SEC.	1 MIN. 15 SEC.	1 MIN. 10 SEC.	1 MIN. 4 SEC.	1 MIN. 2 SEC.

# PRINCE GEORGE, B.C., CANADA

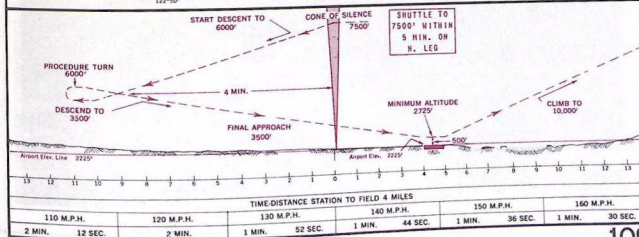
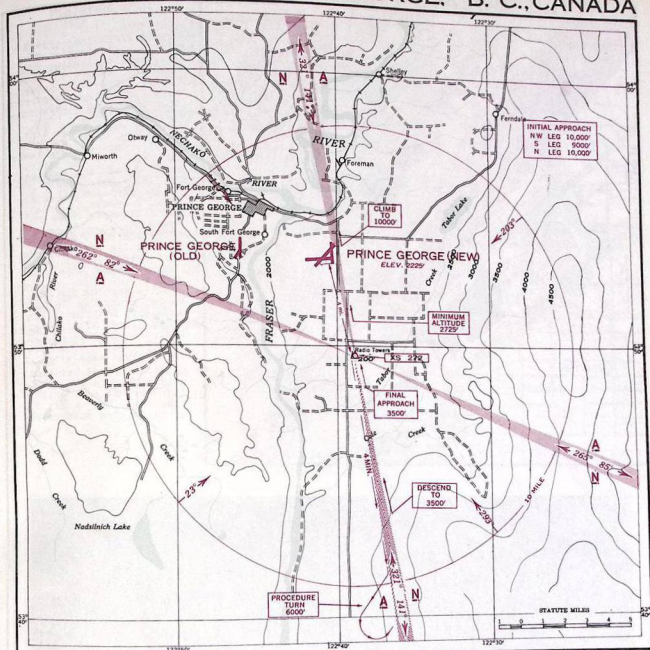


## DESCRIPTION

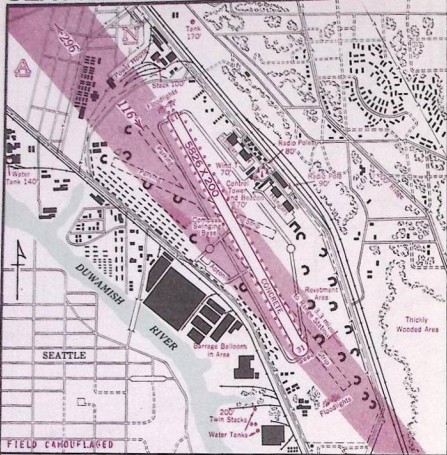
**LAT. 53°05' N., LONG. 122°04' W.**  
**MAGNETIC VARIATION - 28° E.**  
**MARKINGS - Wind sock.**  
**LIGHTING - SEE PLAN.** Rotating beacon. Two amber and green lights 150' from end of runways. E/W runways not lighted.  
**OBSTRUCTIONS -** Power line (30') 2,000', S. of N/S runway. Old beacon tower adjacent to taxi strip.  
**REPAIRS -** 1st echelon maintenance.  
**SERVICING -** Large quantity 90 and 100 octane fuel. Tank trucks.  
**RADIO -** Airways, range, tower.  
**WEATHER SERVICE -** Forecasting service, hourly and synoptic reports.  
**ACCOMMODATIONS -** Barracks and stout houses; transient messing. First aid.  
**WEATHER -** Occasional fog in mornings. Low clouds and haze.  
**REMARKS -** WARNING: Loose gravel on each side of runway.



# PRINCE GEORGE, B. C., CANADA



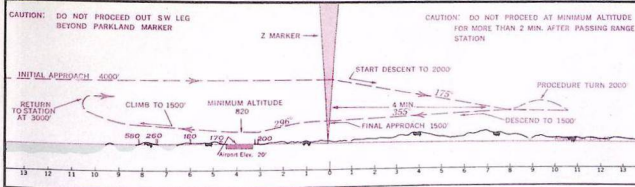
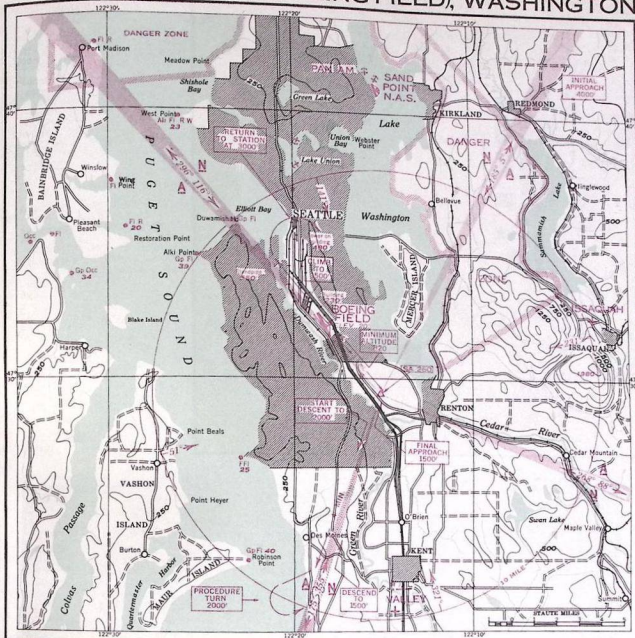
# SEATTLE (BOEING FIELD), WASHINGTON



**DESCRIPTION**  
 LAT. 47°32' N. . LOG. 122°18' W.  
 MAGNETIC VARIATION - 23° E.  
 MARKINGS - Illuminated wind tee, name on landing ramp, boundary markers.  
 LIGHTING - Beacon, boundary, range, contact, obstruction and flood lights.  
 OBSTRUCTIONS - N. - Power company buildings. E. - Power line. SE. - Towers (125'). Barrage balloons in area.  
 REPAIRS - Complete repairs.  
 SERVICING - Bulk supply 100 octane fuel and oil. 4 pits, 2 trucks.  
 RADIO - Airways, range and tower.  
 WEATHER SERVICE - Complete forecasting service. 24 hour operation.  
 ACCOMMODATIONS - Hotels in city.  
 WEATHER - Morning fog and smoke, heavy fog 15 days annually, maximum in Oct.  
 REMARKS - Area within 4 mi. radius of airport closed to all traffic 1830-0800 PWT daily. Taxi with caution. Field has been extensively camouflaged to represent residential district. Not easily discernable. See photograph.

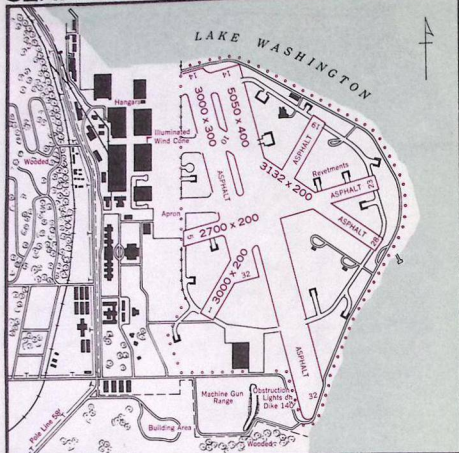


# SEATTLE (BOEING FIELD), WASHINGTON



TIME DISTANCE STATION TO FIELD 3.3 MILES					
110 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.	150 M.P.H.	160 M.P.H.
1 MIN. 48 SEC.	1 MIN. 39 SEC.	1 MIN. 33 SEC.	1 MIN. 25 SEC.	1 MIN. 19 SEC.	1 MIN. 14 SEC.

# SEATTLE (SAND POINT N.A.S.), WASHINGTON

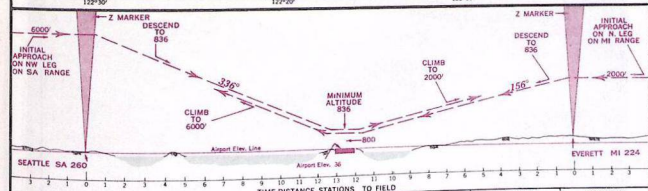
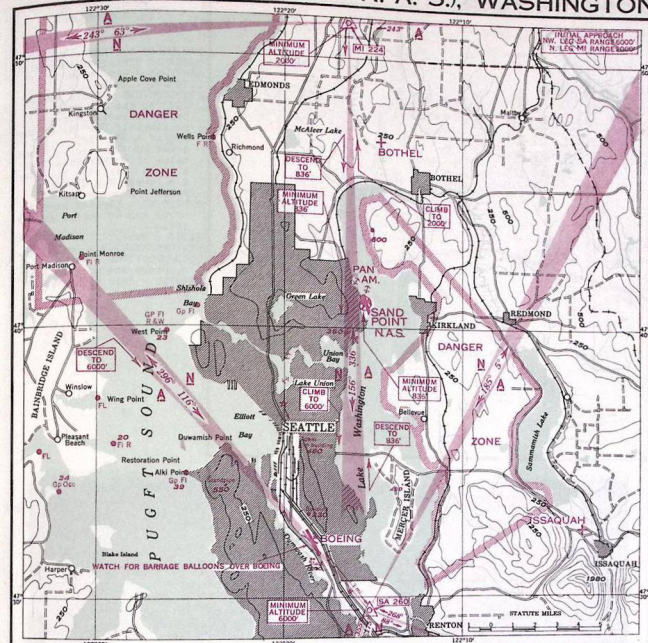


**DESCRIPTION**

LAT. 47°41' N., LONG. 122°16' W  
 MAGNETIC VARIATION - 23° E.  
 MARKINGS - Illuminated wind cone. Runways numbered.  
 LIGHTING - Floodlights and boundary light.  
 OBSTRUCTIONS - W. - Hills (400') and hangars. S. - Hills (150') and trees. NE. - Hills (650') 1 1/2 mi.  
 REPAIRS - Major repairs.  
 SERVICING - Bulk supply fuel 23 pits and 12 service trucks.  
 RADIO - Airways, range, tower.  
 WEATHER SERVICE - 24-hour CAA forecasting in Seattle.  
 ACCOMMODATIONS - Barracks and mess.  
 OPERATED BY - U. S. Navy  
 REMARKS - Seaplane facilities available here.

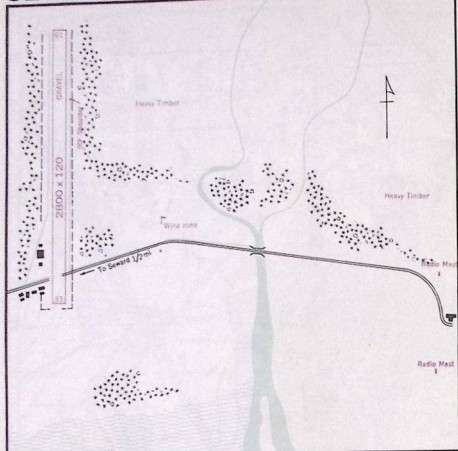


# SEATTLE (SAND POINT N. A. S.), WASHINGTON



	TIME-DISTANCE STATIONS TO FIELD					
	110 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.	150 M.P.H.	160 M.P.H.
FROM SA RANGE	3.4 MILES	7 MIN. 19 SEC.	6 MIN. 42 SEC.	6 MIN. 11 SEC.	5 MIN. 45 SEC.	5 MIN. 22 SEC.
FROM MI RANGE	4.1 MILES	6 MIN. 46 SEC.	6 MIN. 12 SEC.	5 MIN. 43 SEC.	5 MIN. 19 SEC.	4 MIN. 59 SEC.

## SEWARD, ALASKA

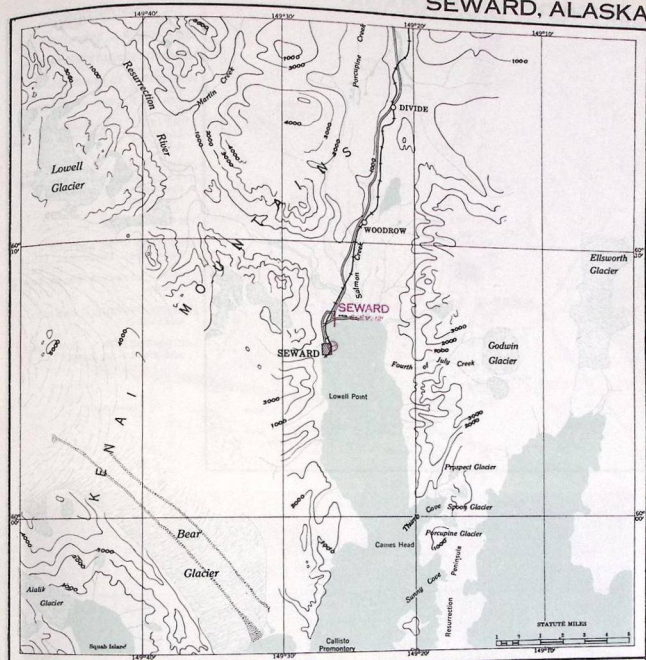


## DESCRIPTION

LAT.  $60^{\circ}07'N$ , LONG.  $149^{\circ}26'W$ .  
 MAGNETIC VARIATION -  $26^{\circ}30'E$   
 MARKINGS - Wind cone.  
 LIGHTING - NONE.  
 OBSTRUCTIONS - Radio tower  
 800' to the N. Railroad  
 bridge across river ap-  
 proximately 800' N. of the  
 end of N./S. strip. 50'  
 trees on all sides. Moun-  
 tains rise sharply E. and  
 W. 2 to 5 miles. E. - Ra-  
 dio towers  $3/8$  mile.  
 REPAIRS - Minor repairs.  
 SERVICING - Limited supply  
 of 75 and 80 octane gas at  
 field.  
 RADIO - Tower.  
 WEATHER SERVICE - Available.  
 ACCOMMODATIONS - Barracks,  
 quarters and mess in town.  
 WEATHER - Rain  $65^{\circ}$ , snow  $80^{\circ}$   
 No fogs.

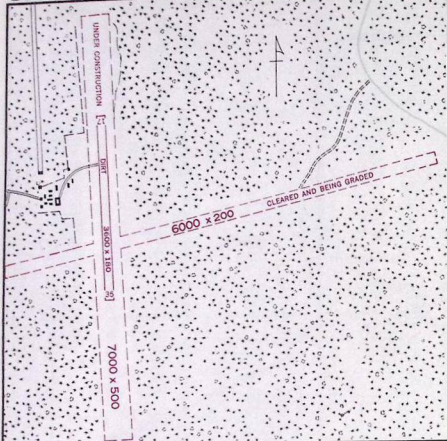


## SEWARD, ALASKA



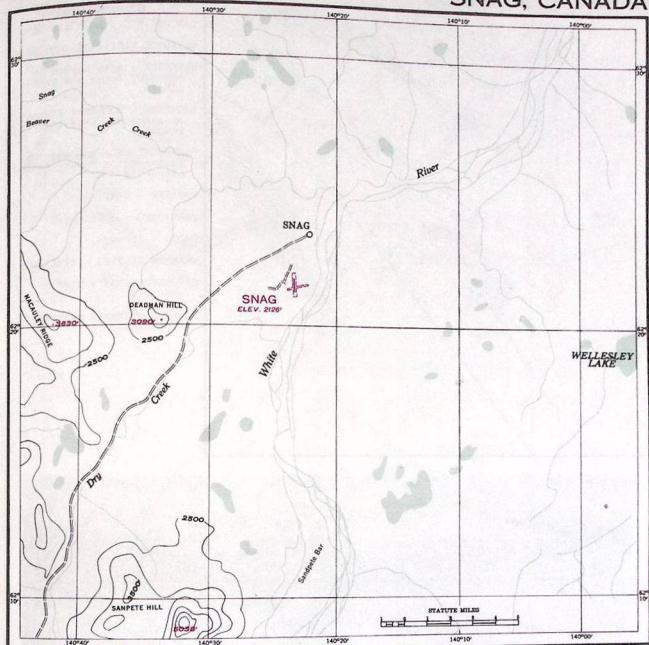
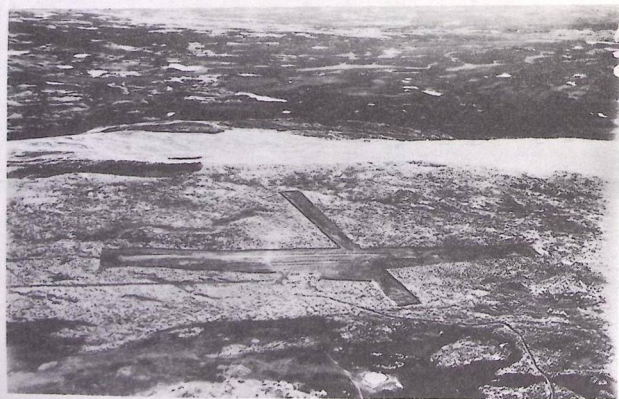




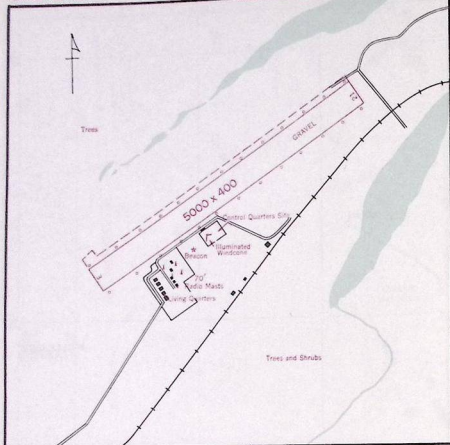


## DESCRIPTION

LAT. 62°22'N., LONG. 140°25'W.  
 MAGNETIC VARIATION - 32° E.  
 MARKINGS - White flags outline landing strip.  
 LIGHTING - Lighting to be installed.  
 OBSTRUCTIONS - N. - Small hill 5 miles.  
 REPAIRS - NONE.  
 SERVICING - Small emergency supply of fuel.  
 RADIO - Range.  
 WEATHER SERVICE - Observations. Hourly reports.  
 ACCOMMODATIONS - Barracks and accommodations under construction.



# SUMMIT, ALASKA



## DESCRIPTION

LAT. 63°19'N., LONG. 149°08'W.

MAGNETIC VARIATION - 28°20'E.

MARKINGS - Area marked by boundary cones and lights. Circle.

LIGHTING - Boundary lights on request. Rotating beacon.

OBSTRUCTIONS - Men and equipment on runway intermittently.

REPAIRS - NONE.

SERVICING - Available.

RADIO - Airways.

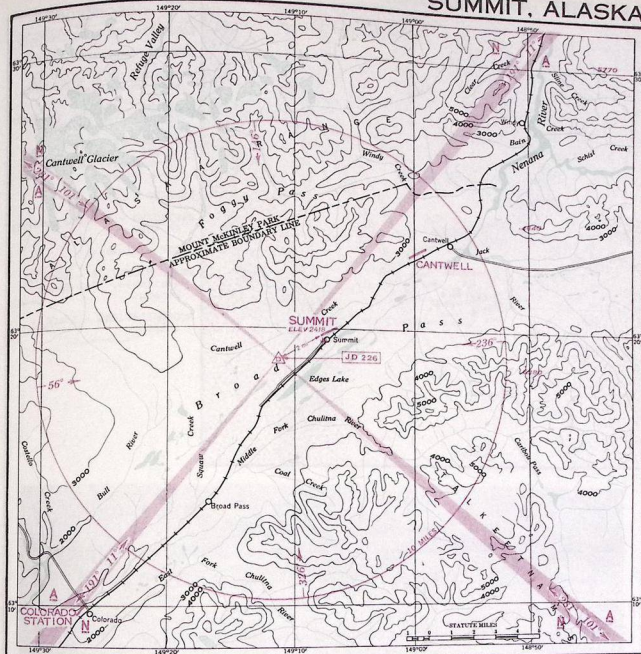
WEATHER SERVICE - Available.

ACCOMMODATIONS - Staff quarters.

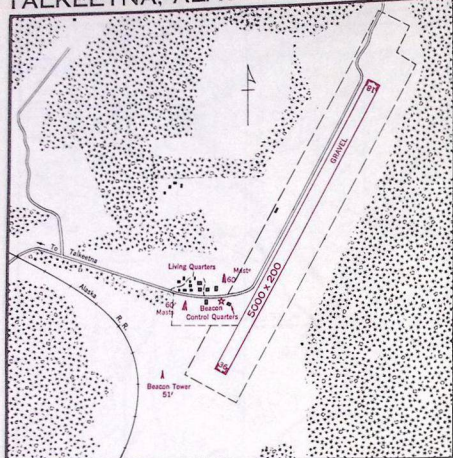
WEATHER - Yearly rainfall very light.



# SUMMIT, ALASKA



# TALKEETNA, ALASKA

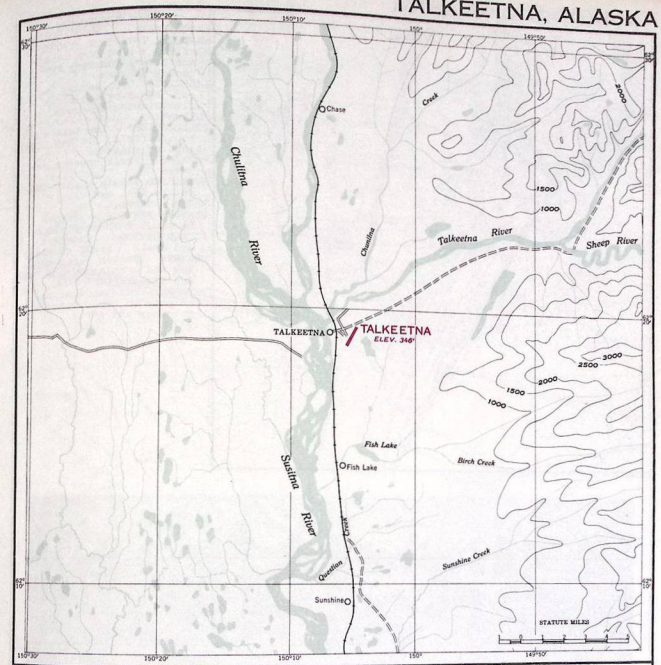


## DESCRIPTION

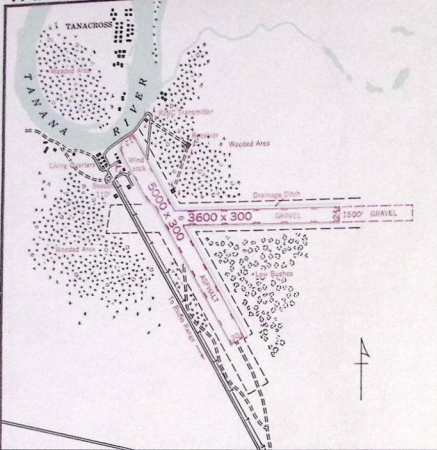
- LAT. 62°19'N., LONG. 150°05'W.
- MAGNETIC VARIATION - 26°45'E
- MARKINGS - Wind cone. Un-safe area flagged.
- LIGHTING - Beacon. Boundary lights being installed.
- OBSTRUCTIONS - Approaches clear. Open trench between runway and parking area flagged.
- REPAIRS - NONE.
- SERVICING - Limited quantity in town.
- RADIO - Airways.
- WEATHER SERVICE - Reports available. CAA Weather Bureau.
- ACCOMMODATIONS - Staff quarters.



# TALKEETNA, ALASKA



# TANACROSS, ALASKA

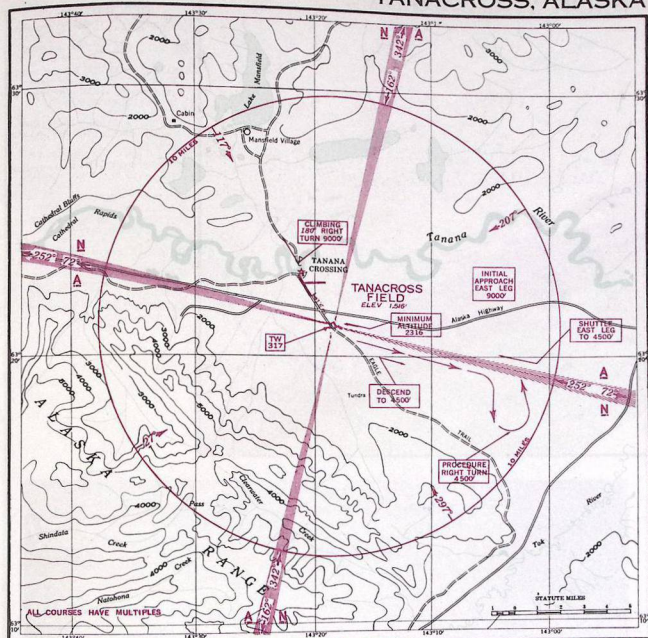


## DESCRIPTION

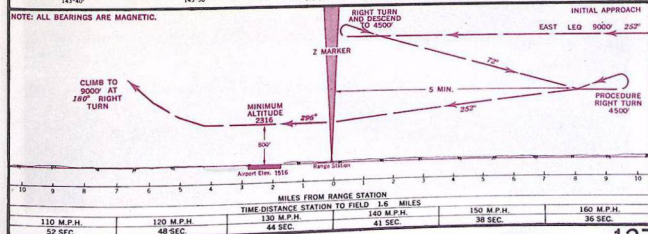
LAT. 65°02'3" N., LONG. 143°02'0" W.  
 MAGNETIC VARIATION - 51050' E.  
 MARKINGS - Wind sock on beacon tower, boundary and runway markers.  
 LIGHTING - Oscillating beacon, boundary and apron floodlights, approach lights.  
 OBSTRUCTIONS - Low bush surrounds field, ditches along edge of runways.  
 REPAIRS - First echelon repairs.  
 SERVICING - Bulk supply 100 octane fuel and oil.  
 RADIO - Range.  
 WEATHER SERVICE - Weather Bureau, 12-hour station.  
 ACCOMMODATIONS - Quarters and meals, Staff quarters.  
 WEATHER - Fog in early morning and evening during fall and winter.  
 REMARKS - Ski landings can be made on river between November and April.



# TANACROSS, ALASKA

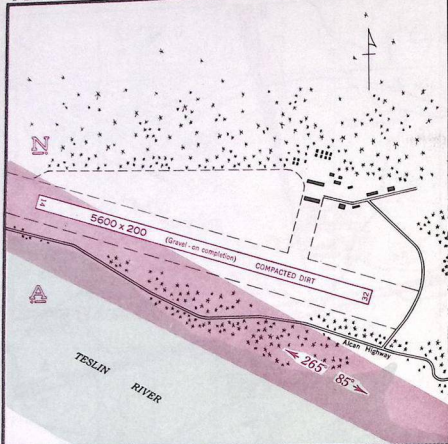


NOTE: ALL BEARINGS ARE MAGNETIC.



MILES FROM RANGE STATION			
1.5 MILES	1.0 MILES	0.5 MILES	0.0 MILES
110 M.P.H.	120 M.P.H.	130 M.P.H.	140 M.P.H.
52 SEC.	48 SEC.	44 SEC.	41 SEC.
			150 M.P.H.
			38 SEC.
			160 M.P.H.
			36 SEC.

# TESLIN Y. T., CANADA



## DESCRIPTION

LAT. 60°10'N., LONG. 132°04'W.

MAGNETIC VARIATION - 33° E.

MARKINGS - White flags outline usable runway area in summer, small spruce trees in winter.

LIGHTING - Flares and lanterns available for emergency.

OBSTRUCTIONS - High terrain directly NE.

REPAIRS - NONE.

SERVICING - Emergency supply 91 octane gas.

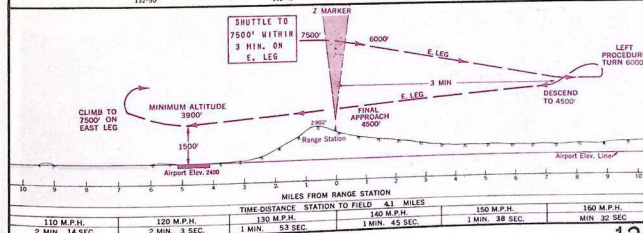
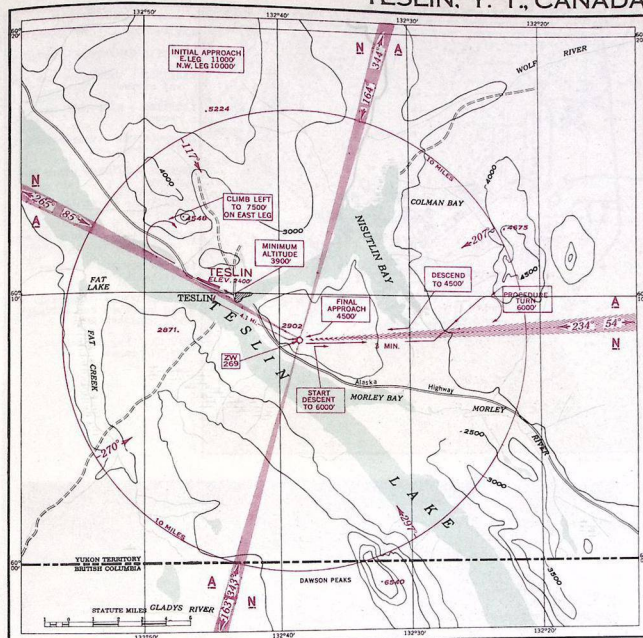
RADIO - Airways, range.

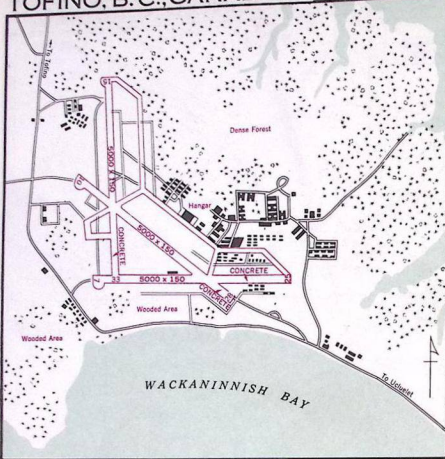
WEATHER SERVICE - Hourly reports by radio.

ACCOMMODATIONS - Emergency accommodations.

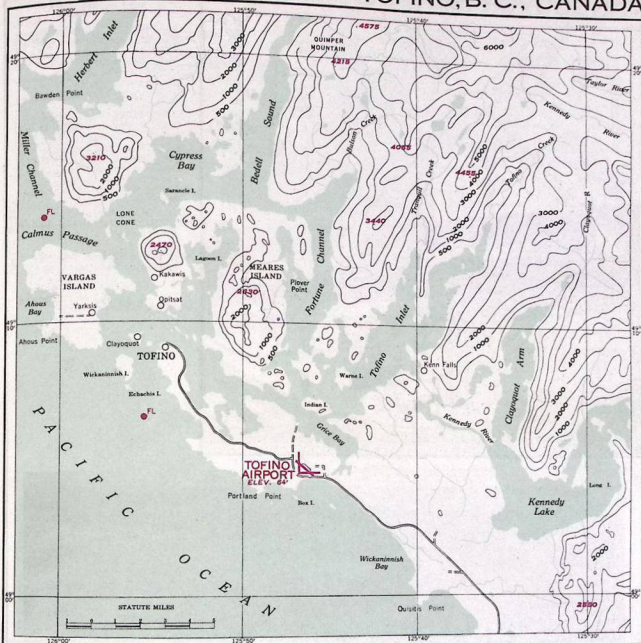


# TESLIN, Y. T., CANADA





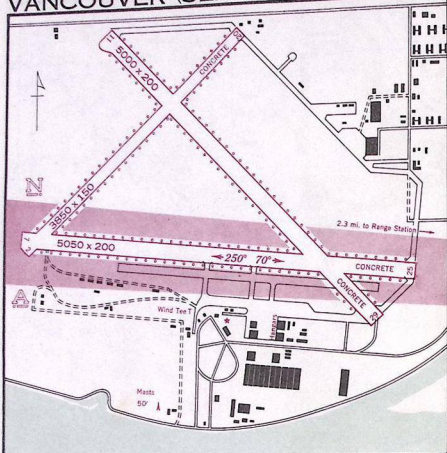
**DESCRIPTION**  
 LAT. 49°05' N., LONG. 125°46' W.  
 MAGNETIC VARIATION - 24°30' E.  
 MARKINGS - Wind cone and runway markers.  
 LIGHTING - Flarepath on request.  
 OBSTRUCTIONS - Timber in all directions.  
 REPAIRS - Limited minor repairs.  
 SERVICING - 90 and 100 octane fuel.  
 RADIO - Tower. Range under construction.  
 WEATHER SERVICE - Reports available.  
 ACCOMMODATIONS - Barracks and quarters for officers and enlisted men.  
 WEATHER - Fog during July to September.



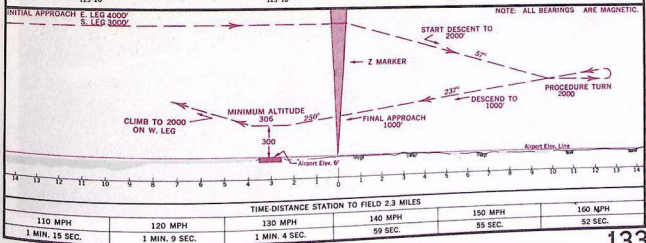
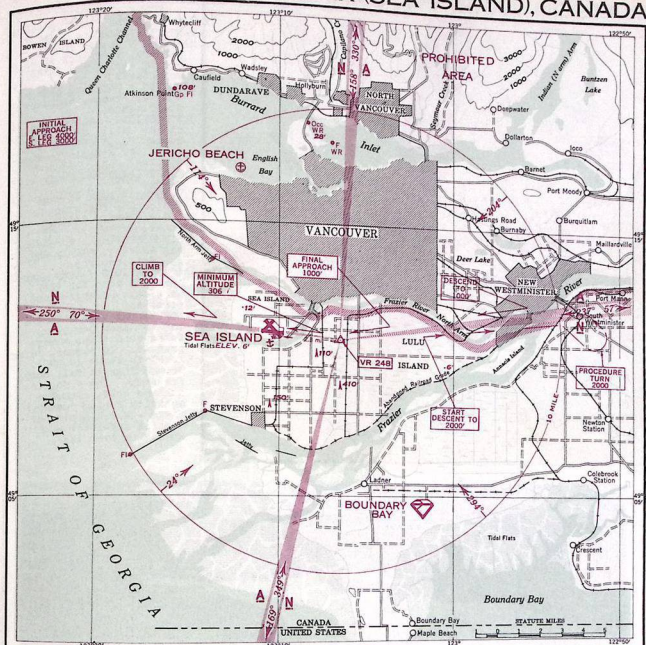
# VANCOUVER (SEA ISLAND), B. C. CANADA

## DESCRIPTION

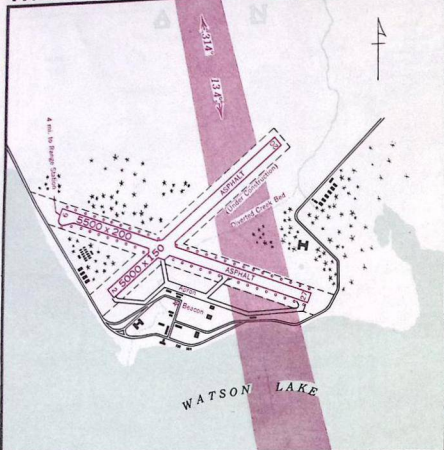
LAT. 49°11' N., LONG. 123°10' W.  
 MAGNETIC VARIATION - 24° E.  
 MARKINGS - Boundary markers.  
 Name on hangar.  
 LIGHTING - Rotating beacon, contact, boundary and obstruction lights. Floodlight.  
 OBSTRUCTIONS - N., NE. and SE. - Power lines.  
 REPAIRS - Complete repairs.  
 SERVICING - Bulk supply 90-100 octane fuel.  
 RADIO - Airways, range, tower and radar beacon, tower and radar beacon, station. Hourly and synoptic observations.  
 ACCOMMODATIONS - Messing and quarters for 1,500 at field.  
 WEATHER - Ground fog in morning, October - March.



# VANCOUVER (SEA ISLAND), CANADA



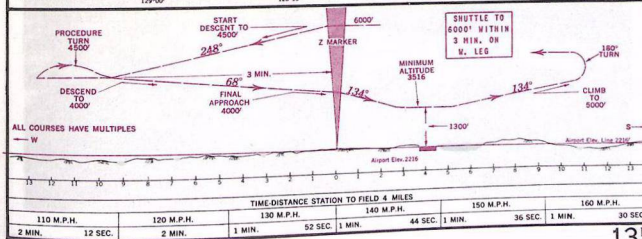
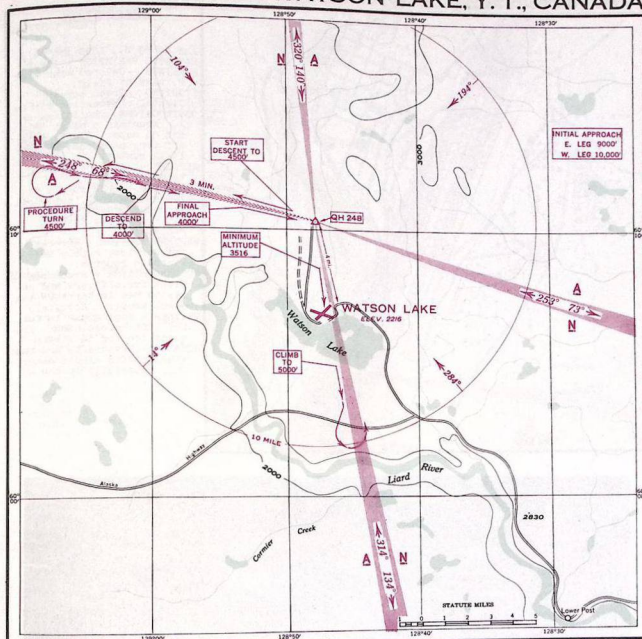
# WATSON LAKE, Y. T., CANADA

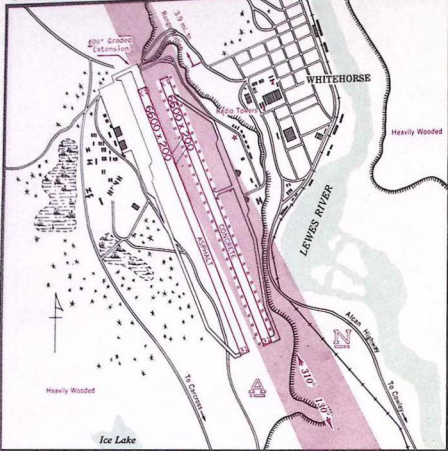


LAT. 60°07' N., LONG. 108°48' W.  
 MAGNETIC VARIATION - 34° E.  
 MARKINGS - Wooden runway markers, wind sock at SE. end of strip, red flags and flares.  
 LIGHTING - Rotating beacon, contact, range, boundary, floodlights.  
 OBSTRUCTIONS - Approaches clear. Hills to N. and E. Runway 20/50' higher than lake. N. - Radio towers - 4 miles.  
 REPAIRS - 2nd echelon repairs.  
 SERVICING - Bulk storage of 100 octane fuel.  
 RADIO - Airways radio, range, tower.  
 WEATHER SERVICE - Forecasting service, hourly and synoptic reports.  
 ACCOMMODATIONS - Army quarters and mess for 426 garrison. Hospital and first aid.  
 WEATHER - Average 15" rain and 66" snow per year. Icing conditions always present. In summer, icing level is about 10,000'. Ground fogs in fall until freezeup. Ice - fog in extreme cold. Cumulus activity during summer.  
 REMARKS - Watch depth perception in winter when coming in over lake.



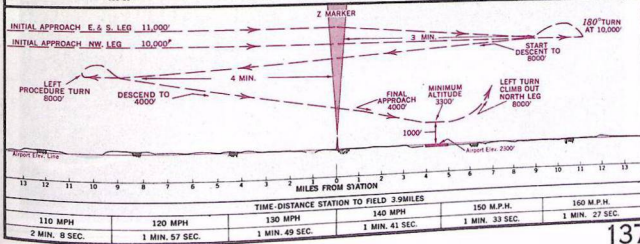
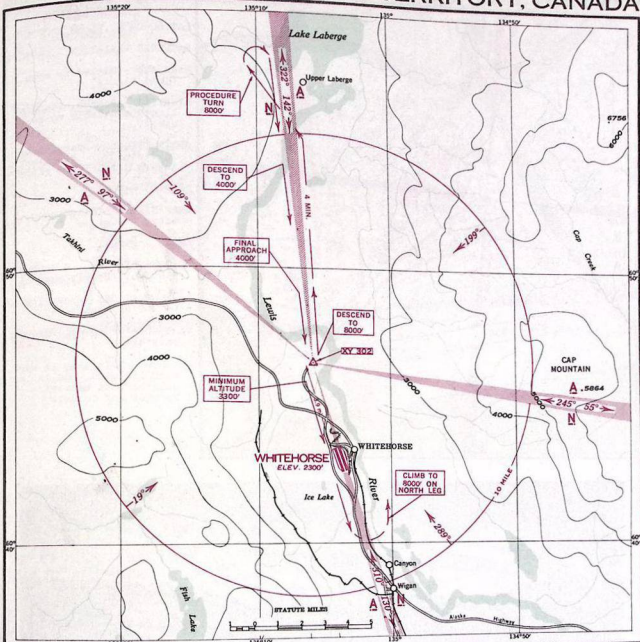
# WATSON LAKE, Y. T., CANADA



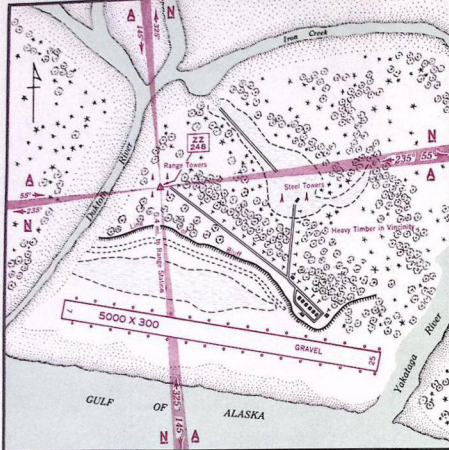


DESCRIPTION

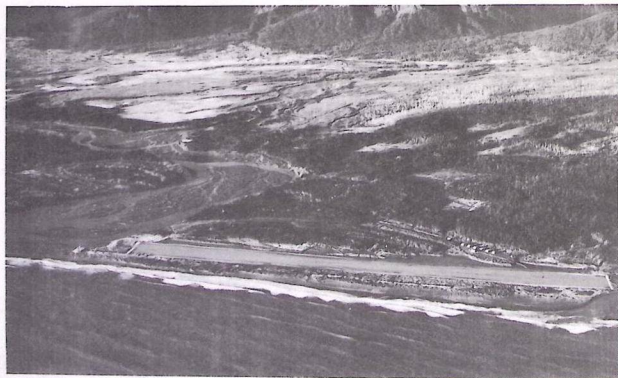
LAT. 60°43' N., LONG. 135°00' W.  
 MAGNETIC VARIATION - 330 E.  
 MARKINGS - Colored wind sock  
 W. side of field.  
 LIGHTING - Green corner  
 lights, obstruction lights  
 OBSTRUCTIONS - Buildings on  
 E. Mountain 5 miles SE,  
 not on maps. Bluffs fall  
 off very near ends of  
 13-31 runway.  
 REPAIRS - 2nd echelon main-  
 tenance.  
 SERVICING - Bulk supply 91,  
 100 octane fuel, ample oil  
 Two tank trucks, pits.  
 RADIO - Airways, tower,  
 range.  
 WEATHER SERVICE - Forecast-  
 ing service, hourly and  
 synoptic reports.  
 ACCOMMODATIONS - Accommoda-  
 tions for officers and en-  
 listed men in barracks and  
 stout houses. Hospital.  
 WEATHER - Fogs occur in fall  
 but lift before noon. Fre-  
 quent ice fog in winter.  
 REMARKS - Downdrafts are bad.  
 Wide traffic circle danger-  
 ous, especially in the W.



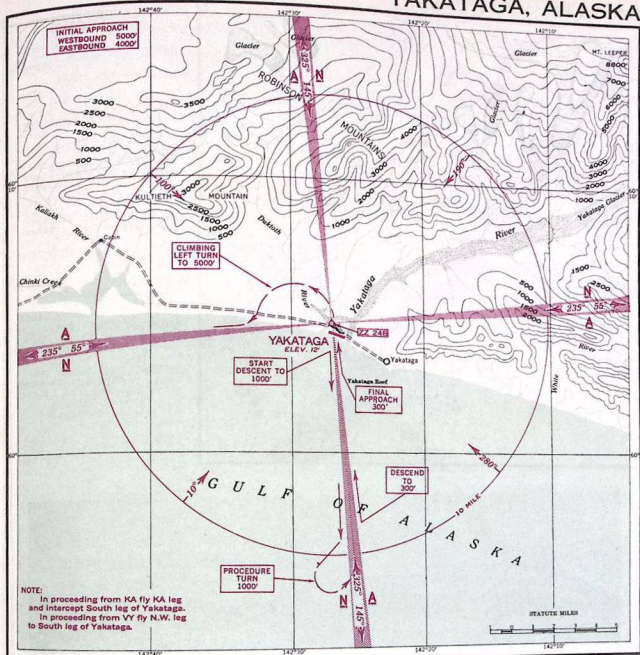
# YAKATAGA, ALASKA



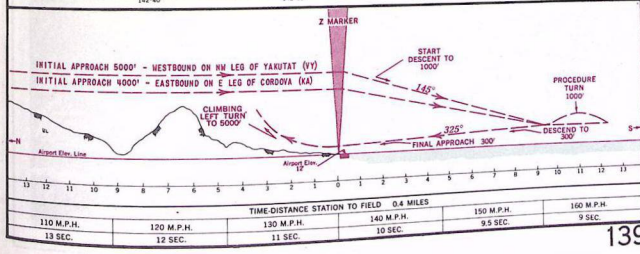
**DESCRIPTION**  
 LAT. 60°04' N., LONG. 142°26' W.  
**MAGNETIC VARIATION** - 29°30' E  
**MARKINGS** - Marked by cone field lights.  
**LIGHTING** - Beacon, boundary lights available on request.  
**OBSTRUCTIONS** - Heavy timber in vicinity. Two steel towers ½ mile from strip.  
**REPAIRS** - NONE.  
**SERVICING** - Limited quantity.  
**RADIO** - Range.  
**WEATHER SERVICE** - U.S. Navy station. Hourly reports.  
**ACCOMMODATIONS** - Very limited. Staff quarters.  
**WEATHER** - Heavy rain and snowfall.  
**REMARKS** - This area is very much isolated, and is the only airport between Yakutat and Cordova.



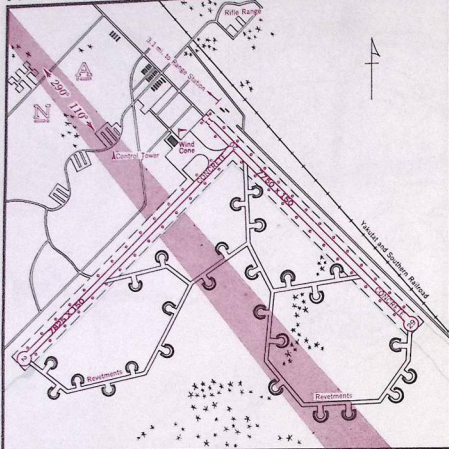
# YAKATAGA, ALASKA



**NOTE.**  
 In proceeding from KA fly KA leg and intercept South leg of Yakataga.  
 In proceeding from VY fly N.W. leg to South leg of Yakataga.



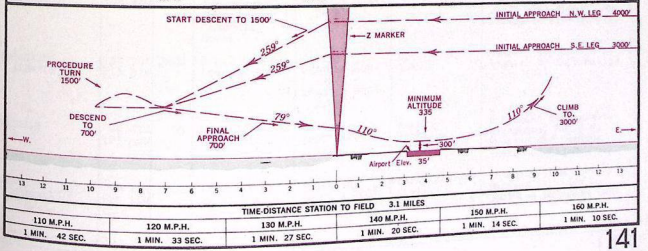
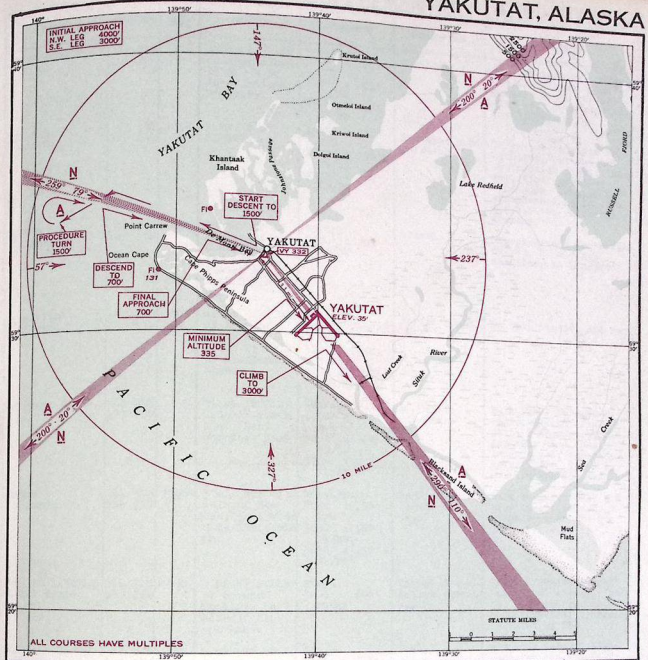
# YAKUTAT, ALASKA



**DESCRIPTION**  
 LAT. 59°30' N., LONG. 139°40' W.  
 MAGNETIC VARIATION - 30° E.  
 MARKINGS - SEE PLAN.  
 LIGHTING - Runway and obstruction lights. Lighting truck for emergency.  
 OBSTRUCTIONS - NW - Range towers. W - Radio towers. 75' crane may be in vicinity of runways.  
 REPAIRS - 2nd echelon.  
 SERVICING - Bulk storage 100 octane fuel. Tanks.  
 RADIO - Airways, range and tower.  
 WEATHER SERVICE - AAF 24-hr. station. Complete service.  
 ACCOMMODATIONS - Extensive quarters at field; army mess.  
 WEATHER - Low clouds prevail throughout the year.



# YAKUTAT, ALASKA



NAME	POSITION	ELE FEET	LOCATION	DIMENSION	DESCRIPTION	FACILITIES
ABBOTSFORD B. C.	49 01N 122 22W	175	About 4 mi. SW of Abbotsford; 1½ mi. N of International Boundary.	Runways: 5100' x 200' E/W 5100' x 200' NE/SW 5100' x 200' NW/SE	Concrete.	Fuel, telephone, radio; beacon, contact lights; hangar, minor repairs; wind tee; accommodations for 1,284.
AIRDRIE ALBERTA	51 16N 113 56W	3650	4 mi. S of Airdrie.	2975' x 100' N/S 2975' x 100' NW/SE 2975' x 100' NE/SW	Runways: Hard surfaced.	Telephone; limited fuel; boundary, contact and obstruction lights; han- gar; minor repairs; wind cone, landing tee; accommodations for 144. R.C.A.F. No. 4 Training Command.
BIRCHWOOD ALASKA	61 24N 149 32W	80	18 mi. NE of Anchorage; be- tween Knik Arm and the Alaska RR. Near Birchwood Stn.	Strip: 5000' x 200' NE/SW	Gravel.	Reported safe for wheels 6/7/43. U. S. Army Auxiliary to Elmendorf.
BLACKFALDS ALBERTA	52 24N 113 54W	3000	About 5 mi. WNW of town of Blackfalds; about ½ mi. N of Blindman River.	Strips: 5200' x 1000' N/S 4200' x 1000' NW/SE 4200' x 1000' ENE/WNW	Strips: Turf, u/c.	To have repairs and rad-
BOUNDARY BAY B. C.	49 05N 123 00W	5	½ mi. ESE of Ladner; about 1 mi. N of Boundary Bay.	Runways: 5000' x 200' E/W 5000' x 200' NE/SW 5000' x 200' NW/SE	Runways: Concrete.	Bulk fuel; telephone, radio; beacon, flare path; 2 hangars; R.C.A.F. repairs; wind cone, landing tee; accommo- dates 1,236. R.C.A.F. Western Air Command.
BOWDEN ALBERTA	51 59N 114 01W	3100	3 mi. NNE of town of Bow- den; just W of Olds/Innisfail RR.	Runways: 3050' x 150' E/W 3050' x 150' NE/SW 3050' x 150' NW/SE	Hard surfaced. Usable all year.	Bulk storage fuel; con- trol tower; beacon; 2 hangars; quarters for 748. R.C.A.F.
BURWASH LANDING FLIGHT STRIP NO. 8 YUKON	61 22N 139 00W	2500	1 mi. NW center of Burwash Landing; on W side of Klua- ne Lake.	Strip: 3000' x 200' NW/SE	Strip: Gravel, natural drain- age.	Limited 80-100 octane fuel, fuel storage; rad- io, weather reports; minor repairs; wind cone operated by FAA.
CAMPBELL CREEK ALASKA	61 09N 149 45W	275	6 mi. SE of Anchorage; just S of Campbell Creek.	Strip: 5000' x 200' NE/SW	Gravel.	Reported July 27, 1943 safe for any type air- craft with wheels. Aux- iliary to Elmendorf.
CARSTAIRS ALBERTA	51 30N 113 57W	3400	8 mi. SE of town of Car- stairs.	Strips: 2640' x 600' N/S 2640' x 600' E/W	Sod, sandy loam.	Beacon, two course lights. No information since 6/41.
CASSIDY B. C.	49 03N 123 52W	95	About 2 mi. SE of Cassidy.	Runway: 5000' x 200' N/S	Runway: Asphalt.	2 hangars authorized; telephone. R.C.A.F. Western Air Command emergency field.
CHAMPION ALBERTA	50 13N 113 11W	3200	About ¼ mi. SW of Champ- ion.	*Runways: 6200' x 400' 3600' x 500'	Turf; all-way field.	*Construction held up pending decision to purchase or lease land.

# SUPPLEMENTARY LANDING FIELDS

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NAME	POSITION	ELE. FEET	LOCATION	DIMENSION	DESCRIPTION	FACILITIES
CLARESHOLM ALBERTA	50 00N 113 38W	3325	About 3 mi. SW of large town of Clare-sholm.	Double runways: 3200' x 100' & 5000' x 100' NW/SE 3100' x 100' & 3100' x 100' NNW/SSW 3100' x 100' & 5000' x 100' NE/SW	Runways: Hard surfaced.	Bulk storage fuel; control tower, radio, telephone; beacon, obstruction and contact lights; 7 hangars; repairs; wind cone, landing tee and runway markings; quarters for 1,436. R.C.A.F.
COWLEY ALBERTA	49 38N 114 05W	3850	5 mi. N of town of Cowley; 1 mi. W of Oldman River.	Strips: 3600' x 500' NE/SW 3600' x 500' NW/SE 600' x 800' N/S d/c	Strips: Turf.	90 oct. fuel; radio range, telephone, and teletype; beacon, boundary, and obstruction lights; minor repairs; boundary and circle markings; hotel in town. D. of T.
CRANBROOK B. C.	49 32N 115 46W	2990	1 mi. NE center Cranbrook.	Strip: 3000' x 600' NNE/SSW	Strip: Sod, slightly rough. All-weather field.	Limited fuel; telegraph, telephone, teletype, radio, radio range; rotating beacon, contact and obstruction lights; wind cone, boundary markings; hangars; accommodations in town. D. of T.
CURRIE BARRACKS CALGARY, ALBERTA	51 01N 114 08W	3675	4 mi. SW center of Calgary; 4 mi. W Bow River.	Runways: 3 double: 2950' x 100' & 3000' x 100' N/S 3050' x 100' & 3200' x 100' NW/SE 3200' x 100' & 3000' x 100' NE/SW	Runways: Hard surfaced.	Fuel; radio, telephone, teletype, telegraph, control tower; revolving beacon, contact and obstruction lights; 4 hangars; repairs; wind cone illuminated landing tees; accommodations for 1401. R.C.A.F. #3.
CUTBANK MONTANA	48 36N 112 22W	3840	About 3 mi. SW of Cutbank.	Runways: 5000' x 150' NW/SE 4500' x 50' NNE/SSW 5000' x 150' WSW/ENE	Runways: Paved.	Telephone; wind cone; full lighting. Accommodations in town.
DAWSON CREEK B. C.	55 45N 120 15W	2250	About 1 mi. SSW of town of Dawson Creek.	Strip: 5500' x 500'	Strip: Compacted earth with gravel surface.	Fuel; telephone and telegraph in Dawson Creek; limited accommodations. Spruce trees mark strip.
DE WINTON ALBERTA	50 49N 113 50W	3325	8 mi. E of De Winton; 1 1/2 mi. SW of Bow River.	Runways: 3100' x 150' NW/SE 3000' x 150' NE/SW 3200' x 150' WNW/ESE	Runways: Surfaced.	Bulk storage fuel; telegraph; rotating beacon, flarepath on request; 2 hangars; control tower; wind cone; road to De Winton; accommodations for 1,014. R.C.A.F.
EMSION ALBERTA	50 29N 113 20W	2434	7 1/2 mi. ESE of Emsion; 6 mi. NW of Vulcan.	Runways: 3175' x 150' & 3175' x 150' NW of Vulcan. 3175' x 150'	Runways: Hard surfaced. All-year fld.	Telephone; hangar; accommodations for 9 officers and 91 men. R.C.A.F. No. 4 Training Command.
FAIRBANKS (WEEKS FIELD) ALASKA	64 50N 147 44W	437	3/4 mi. SW of Fairbanks; just S of Chena River.	Strip: 5400' x 400' NW/SE 1350' x 150' NW/SE	Strip: Sandy loam; subject to floods during ice jams.	Fuel; telephone, telegraph, teletype, radio, radio range; weather, beacon, flares; hangars; major repairs; wind cone. Seaplane anchorage in Chena River just NW of airport.

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# SUPPLEMENTARY LANDING FIELDS

NAME	POSITION	ELE. FEET	LOCATION	DIMENSION	DESCRIPTION	FACILITIES
GAKONA ALASKA	62 18N 145 18W	1250	1 mi. SW of Gakona.	Strip: 4000' x 250' NE/SW	Strip: Sod and gravel; timber bordering runways.	Limited fuel; telephone, radio, weather reports; hangars; minor repairs; wind sock; highway to Valdez and Fairbanks. Accommodations at road-houses near field and in town. C.A.A.
GOOSE BAY ALASKA	61 24N 149 52W	83	13 mi. N of Anchorage; just NW of Goose Bay.	Strip: 5000' x 200' E/W	Gravel and earth.	Reported July 27 to have ruts and ridges; unsafe for military aircraft. Auxiliary to Elmendorf.
GRANUM ALBERTA	49 49N 113 27W	3255	About 5 mi. SE of town of Granum.	Runways: 3000' x 100' E/W 3000' x 100' NNE/SSW 3000' x 100' NNW/SSW	Runways: Hard surfaced.	Bulk storage fuel; obstruction and contact lights; hangar; wind cone and landing tee; quarters for 100. R.C.A.F.
GUSTAVUS ALASKA	58 25N 135 40W		6 mi. ENE of Point Gustavus; 1/2 mi. NW of Pleasant I.; about 1 mi. inland from N shore of Icy Passage.	7500' x 300' NW/SE 5500' x 300' NE/SW	Not known.	Reported Oct. 28, 1943 to be usable in emergency; expected completion date approx. Jan. 1, 1944.
HEALY ALASKA	63 51N 148 59W		On W bank of river; just N of town.	Strip: 3000' x 200'	Gravel and sand.	Fuel.
HIGH RIVER ALBERTA	50 36N 113 51W	3400	1 1/2 mi. NE of town of High River.	Strips: 4000' x 1000' NE/SW 3100' x 1000' N/S 3100' x 1000' E/W	All-way turf field.	80 oct. fuel, bulk storage; control tower; beacon; 2 hangars; minor repairs; wind cone; quarters for 240. Telephone, telegraph in High River. R.C.A.F.
INNISFAIL ALBERTA	52 05N 114 02W	2975	About 5 mi. NW of large town of Innisfail; about 1 mi. N of Red Deer River.	Runways: 3025' x 100' N/S 3025' x 100' NW/SE 3025' x 100' ENE/WSW	Runways: Hard surfaced. Usable all year.	Limited fuel; control tower; telephone; obstruction lights; hangar; quarters for 100. R.C.A.F.
INVERLAKE ALBERTA	51 03N 113 37W	3300	About 5 mi. NE of Langdon; 3 mi. NW of Shepard/-Stratmore RR	Runways: 4100' x 500' NNE/SSW 4500' x 500' NW/SE 4960' x 500' E/W	Turf.	Telephone, radio; standard lighting; control tower. R.C.A.F.
KAMLOOPS B. C.	50 42N 120 24W	1150	5 mi. WNW of Kamloops; just N of Thompson River.	Runway: 5400' x 200' E/W	Runway: Asphalt.	Boundary markings, radio and lighting authorized. Fuel and accommodations in town. R.C.A.F.
KIMBERLEY B. C.	49 44N 115 47W	2990	About 3 mi. SW of town of Wase; 9 1/2 mi. ENE of town of Kimberley.	Strip: 4200' x 750' NW/SE	Turf.	Fuel on advance notice; radio; control tower; telephone; beacon, boundary, range and obstruction lights; wind cone. Repairs in town. D. of T.
LADD AUXILIARY ALASKA	64 38N 147 05W	545	2 1/2 mi. SE of Fairbanks; 3 1/2 mi. E Tanana R.	Strip: 5000' x 150' NW/SE	U/C Aug. 1943.	

# SUPPLEMENTARY LANDING FIELDS

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NAME	POSITION	ELE. FEET	LOCATION	DIMENSION	DESCRIPTION	FACILITIES
LAKE SPENARD ANCHORAGE, ALASKA	61 09N 150 00W	100'	About 4 mi. SW Anchorage; 6 mi. E of E coast.	Strip: 5000' x 200' E/W	Strip: Sod.	Auxiliary to Elmendorf.
LIARD RIVER B. C.	59 28N 126 24W (approx)	1400	About 6 1/2 mi. NE of Fishing Lake; 6 mi. SSE confluence of Smith and Liard Rivers.	Strip: 6000' cleared	Strip: To be hard surfaced. Under contract	Very little information available.
MACLEOD ALBERTA	49 43N 113 26W	3125	1 1/2 mi. SW of Macleod.	Runways: 3 double: 5000' x 100' & 2950' x 100' ENE/NSW 3000' x 100' & 3000' x 100' N/S 3000' x 100' & 3000' x 100' NW/SE	Runways: Hard surfaced.	Bulk storage fuel; telephone, telegraph, radio, teletype; rotating beacon, obstruction and contact lights; 7 hangars; repairs; accommodations for 1,392.
MERRILL FIELD ANCHORAGE, ALASKA	61 12N 149 52W	135	Just E of Anchorage.	Runways: 4000' x 400' E/W 3260' x 400' N/S	Runways: Asphalt on 3400' on E/W runway. Sandy loam and clay on N/S runway. Paving u/c May 1943.	Fuel pits, tank trucks; radio, radio range/wind cone; boundary lights; beacon; hangars, major repairs; accommodations.
MIDWAY B. C.	49 01N 118 47W	1910	Just W of Midway; E of Canadian Pacific Rook Creek /Sholt RR.	3400' x 1000' E/W	Turf, sandy loam. All-way field.	Limited 90 and 100 oct. gas; telegraph; rotating beacon (not operating Aug. '43); circle, boundary markings; very limited accommodations. D of T.
NABESNA ALASKA	62 24N 142 52W (est)	3000	6 mi. ENE of Nabesna; 3 mi. SW of confluence Nabesna River and Jacksina Creek.	Strips: 1950' x 300' N/S 800' x 250' NE/SW	Gravel and loam; rocky but solid.	Radio; wind cone; shelter house; corner markers.
NAMAC ALBERTA	53 40N 113 33W (approx)	4000	Exact location not known; believed to be about 8 1/2 mi. NW of the center of the city of Edmonton.	Land cleared of trees and brush 9/43.		Construction of field begun as of 9/43 to provide additional facilities for U.S. service aircraft; being staged through Edmonton.
OLIVER B. C.	49 10N 119 33W	995	S edge of town of Oliver; just W of RR and Okanagan R.	Runway: 3400' x 150' NNE/SSW	Runway: Asphalt.	Limited fuel on 24 hours notice; W/T and telephones; rotating beacon, boundary and range lights; repairs in town; wind cone, boundary markings; hotels in town D. of T. and R.C.A.F.
PEARCE ALBERTA	49 50N 113 15W	3110	About 1 mi. S of Oldman River; about 3 mi. NNE of Pearce Stn. and RR.	Runways: 3113' x 150' NNE/SSW 3113' x 150' E/W 3113' x 150' NNW/SSE	Runways: Hard surfaced.	Control tower, radio, D/F, telephone; rotating beacon; 4 hangars u/c 9/43; quarters for 114. R.C.A.F.

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# SUPPLEMENTARY LANDING FIELDS

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NAME	POSITION	ELE. FEET	LOCATION	DIMENSION	DESCRIPTION	FACILITIES
PENTICTON B. C.	49 28N 119 36W	1120	2 mi. S of Penticton; S end Okanagan Lake; N end of Skaha Lake.	Runway: 5300' x 200' N/S	Runway: Hard surfaced	Fuel on 12 hours notice; telephone, teletype, radio, radio range; rotating beacon, boundary and range lights; repairs; wind cone, boundary markings. D. of T.
PINE LAKE B. C.	59 56N 130 54W (approx)	3150	45 mi. ENE of Teslin Lake; 1 1/2 mi. N of Okanagan Highway.	Strip: 5500' x 500' N/S	Compacted earth. Under construction.	U.S. North West Service Command. (Alaska Highway Flight Strip No. 5.)
PON LAKE YUKON	60 47N 137 32W (approx)	3250	8 mi. N of Alaska Highway; about 12 mi. NW of Kathleen Lake.	Strip: 5500' x 500' u/c.	Strip: To be cleared and shelter provided so that aircraft may land in winter.	Under construction. Operated by U.S. N.W. Service Command. To be one of the Alaska Highway Flight Strips.
PORTAGE ALASKA	60 47N 148 57W (est)	20	20 Portage 3 mi. SSE of Portage E end of Turnagain Arm.	Strip: 4000' x 150' NW/SE	Strip: Soil.	AAF auxiliary airport.
PRINCETON B. C.	49 28N 120 31W	2310	About 1/2 mi. NW of Princeton.	5600' x 800' E/W	Turf.	Fuel from local dealer; radio, control tower, telephone, teletype; beacon, boundary, range lights; wind cone, boundary markings, circle; repairs. Accommodations in town. D. of T.
PROPHET RIVER B. C.	57 55N 122 50W (approx)	1800	8 mi. ENE confluence of Prophet and Minkler Rivers. About 1000' E of Alaska Highway.	Strip: 6000' NE/SW (proposed)	Strip: To be hard surfaced; stabilized for 1000' at each end. Under contract 10/20/43.	R.C.A.F., No. 4 Training Command. Flight strip.
QUESNEL B. C.	53 02N 122 31W	1775	About 1 1/2 mi. N confluence of Fraser and Quesnel Rivers.	Runway: 5500' x 200' NW/SE u/c	Gravel.	Limited fuel. R.C.A.F. Western Air Command.
SHEPAD ALBERTA	50 57N 113 58W	3400	3 mi. WSW of town; about 2 mi. E of Bow River.	Runways: 3050' x 100' N/S 3050' x 100' ESW/NNW 3050' x 100' ENE/NSW	Hard surfaced. Usable all year.	Bulk storage fuel; control tower, radio; 2 hangars; quarters for 396; motor transport. R.C.A.F.
SIKANNI CHIEF RIVER, B. C.	57 13N 122 38W (approx)	2750	3 mi. N of Sikanni Chief River; S of Alaska Highway.	Strip: Reported: 6000'	Strip: To be cleared and shelter provided so that planes may land on frozen surface this winter.	Operated by: U.S.A.A.F. N.W. Staging; Flight strip.
SQUANGA LAKE YUKON	60 29N 133 30W	2650	3 mi. NE of Squanga Lake.	Strip: 8000' x 800' ENE/NSW 5500' x 500' u/c	Strip: Compacted earth.	U.S.A.A.F. Strip #6.

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# SUPPLEMENTARY LANDING FIELDS

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NAME	POSITION	ELE. FEET	LOCATION	DIMENSION	DESCRIPTION	FACILITIES
SUMAS B. C.	49 03N 122 05W	20	8 mi. NE of Sumas.	Strip: 5200' x 200' NE/SW	Gravel.	Fuel from local dealer. R.C.A.F. Western Air Command.
TERRACE B. C.	54 28N 128 35W	710	4 mi. S of Terrace; 2 1/2 mi. S of Skeena River.	5200' x 200' N/S 5200' x 200' EW/SE 5200' x 200' NE/SW	Runways: Asphalt. NE/SW runway under construction.	Fuel and oil in drums; telegraph, radio, radio range authorized; boundary markings; accommodations for 1,284. R.C.A.F.
VANDERHOOF B. C.	54 03N 124 00W	2218	2 mi. N of Vanderhoof; about 1 1/2 mi. N of Fraser River.	Runways: 5900' x 200' E/W 6000' x 200' N/S 5900' x 200' NE/SW E/W runway serviceable; others u/c.	Runways: Light surface gravel.	Fuel on advance notice from Vanderhoof; E/W runway marked by spruce trees. Telegraph, telephone; repairs; accommodations in town. Radio authorized. R.C.A.F. Western Air Command.
VULCAN ALBERTA	50 20N 113 21W	3400	About 7 mi. SW of the town of Vulcan.	Runways: 3125' x 150' NE/SW 3100' x 150' NW/SE 3100' x 150' ESE/NW	Hard surfaced Usable all year.	Bulk storage A/C gas; radio, telephone; beacon and obstruction lights; 7 hangars; minor repairs wind cone; quarters for 1,378. R.C.A.F.
WILLIAMS LAKE B. C.	52 09N 122 05W	2150	1 1/2 mi. N of Williams Lake; on E side of Fraser River; 1 mi. N of Williams Lake village.	Strip: 4700' x 400' NW/SE u/c to be extended to 5500'	Strip: Turf. All-weather.	Limited fuel; radio, telephone; wind cone; accommodations in town.
WILLOW ALASKA	61 45N 150 04W	210	Just SW of Willow Village; 4 1/2 mi. E of Sustana River	Strip: 5000' x 200' NE/SW	Gravel.	Limited fuel; accommodations. Reported July 27, 1945 safe for all types of aircraft on wheels. A.A.F. auxiliary to Elmendorf.
WOODCOCK B. C.	55 04N 128 14W	600	Just SW of Woodcock; between the river and the RR.	Runway: 5200' x 200' NE/SW	Runway: Asphalt.	90 and 100 octane fuel; local telephone, radio range authorized; accommodations. R.C.A.F.
WOODHOUSE ALBERTA	50 00N 113 27W	3300	6 mi. NE of town of Woodhouse.	Runways: 3020' x 100' NE/SW 3020' x 100' ESE/NW 3020' x 100' NW/SE	Runways: Hard surfaced.	Bulk storage fuel; control tower; boundary and contact lights proposed 8/43; hangar; landing tee; quarters for 100; road. R.C.A.F.

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## IMMEDIATE ACTION AFTER LANDING

### ON LAND

- Get out of plane quickly. Take along chute, warm clothing, and other portable equipment if it does not slow your exit.
- Stay away from plane until engines have cooled, spilled gas has evaporated, and danger of fire has passed.
- Check injuries. Render first aid. Keep injured men WARM.
- Prepare signalling devices and have ready for immediate use.
- Avoid frostbite. Keep snow out of your boots.
- Keep your mitts on. Get out of your wind.
- Build a fire at safe distance from plane. Relax, smoke a cigarette. Take stock of your situation calmly. Plan a sensible course of action.
- Officer-in-charge will assign duties.
- If plane may possibly be used for subsequent take-off: (a) Drain oil. (b) Insulate wheels from ice with boughs or other materials. (c) Anchor plane securely. (d) Leave brakes off.
- Get regular and emergency radios operating.
- Try to keep one engine in working order to generate power for radio.
- Prepare shelter. In the North you can live longer without food than without shelter.
- Collect wood, gasoline, oil, lichen, or heather for fuel.
- Check emergency equipment--see what you have to live with.
- Check guns and have ready in case game is sighted.
- Examine surroundings. Think back over the flight, look for landmarks, and try to locate position on chart.
- Start a logbook for future reference.
- Above all--don't overexert.
- Obviously, some of the advice above does not apply in summer. Problems are then much simpler, although insects may be a nuisance.

### AT SEA

- Get all survivors into raft at once.
- Cast off from plane, search for missing personnel, but stay in general vicinity until plane sinks.
- Check for injuries. Give first aid. Take seasickness pills.
- Ball out raft. Get it properly inflated.
- Check for leaks.
- Put up windbreaks and spray shields.
- Wring out clothes. Get as DRY and WARM as possible. Huddle for warmth.
- If more than one raft, join by rope at reasonable distance.
- Set up radio and send out signals as directed, (p. ).
- Have other signalling devices ready.
- Check equipment and lash it down.
- After plane has sunk, look over floating wreckage for useful articles.
- Try to determine your location and orientation. Lay out a course and follow it. Keep a logbook.
- Start rationing food and water.
- Establish a routine. Officer-in-charge will assign duties to everyone. Set a watch.
- Be calm and cheerful. Don't gripe.
- Exercise regularly for warmth.
- Practice signalling with the mirror provided.

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## SURVIVAL

### CARE OF PERSONNEL

#### CRASH INJURIES

- Keep all injured personnel WARM and lying down. Treat for shock. Injuries most likely to occur in crash landings are: cuts and bruises; strained back; concussion of brain; fracture of limbs; burns.
- HEMORRHAGE** - Control by pressure bandages or tourniquet between injury and heart if bleeding is severe. Release every 15 to 20 minutes. Watch carefully for freezing.
  - CESSATION OF BREATHING** - Apply artificial respiration with patient's tongue pulled forward. Look for head injuries, fractured skull (unequal pupils, bleeding from ears or into skin around eyes), or evidence of drowning. Keep patient warm and dry.
  - FRACTURES** - Improve splints and pad with soft materials. Do not remove clothes from fractured limb, but if wound exists, cut away clothing around wound and dress before splinting.
  - WOUNDS** - Sprinkle sulfanilamide powder on wounds. Cover freely with gauze. Bandage firmly but not tightly. Don't handle wound. Keep sound part at rest.
  - BURNS** - Do not open blisters. Sprinkle with sulfanilamide powder. Cover freely with gentian violet. Apply a thick dose of vasoline. Put burned part at rest. Don't change bandage; leave it alone. Give morphine injection for pain.
  - GENERAL** - Keep injured men warm and dry. Put in sleeping bag, provide shelter, and build a fire. Warm food and liquids are desirable for conscious patients. Avoid alcohol.

#### HEALTH ON LAND AND ICE

- FROSTBITE - PREVENTION** : Keep face, ears, nose, wrists, hands and feet covered, DRY, and unconstricted by tight clothing. Exercise parts frequently. Keep out of wind. **SYMPTOMS** : Stiffness, white or grayish color, loss of feeling. **TREATMENT** : Do NOT apply snow or ice. Do NOT rub. Thaw frozen parts of face or ears with warm hand. Place frozen hand under armpit. Thaw frozen foot against bare human breast. Apply sulfanilamide powder to deeply frozen areas. Keep frozen part elevated, at rest, and no warmer than body temperature. Do not open blisters.
- FREIZING TO DEATH - CAUSE** : Prolonged exposure to cold, insufficient food, fatigue. **PREVENTION** : Plenty of rest and sleep. Avoid overexertion. Do not become exhausted. Reduced rations require increased rest.
- CARBON MONOXIDE POISONING - CAUSE** : Any fire burning in unventilated shelter. **SYMPTOMS** : Any one or all of these: pressure at temples, beating of pulse, slight headache, drowsiness, upset stomach, unconsciousness. **TREATMENT** : Get into fresh air at once; don't exercise; breathe regularly; keep warm; rest. Artificial respiration may be necessary.
- SNOWBLINDNESS - SYMPTOMS** : Inflammation, burning sensation, itchy feeling in eyes, headache, poor vision. **PREVENTION** : Colored glasses or improvised goggles (see Fig. 1, next page). Blacken area around eyes with soot or charcoal. **TREATMENT** : Darkness and rest. Put moist compress on eyelids.
- SUNBURN** - Often serious. Keep all parts of skin covered. Apply suitable ointment.
- INSECTS** - Use insect repellents and mosquito netting or handkerchief hung down the back of the neck.

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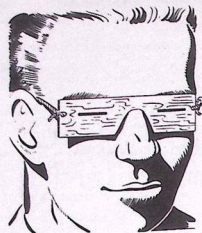


Fig. 1

Make smoke smudges and insect-proof shelters in camp.

**7. GENERAL HINTS** - (a) Don't touch cold metal objects with bare skin. Tape triggers and tool handles. (b) Avoid perspiration. Strip down when exercising. (c) Keep clothes dry and loose fitting. (d) Keep out of the wind. Zero with 20 m.p.h. wind is worse than 40 below with no wind. (e) Avoid overexertion. (f) Get used to being chilly. (g) Always ventilate shelters housing a fire. (h) Feet, hands, nose, ears, and cheeks are parts of the body most easily frozen. Give them special care and protection. (i) Don't drink alcohol in cold weather.

## HEALTH AT SEA

GET OUT OF THE WATER AS SOON AS POSSIBLE. The North Pacific and Bering Sea waters are so cold, even in summer, that you may be incapacitated within a short time.

**1. PROTECTIVE MEASURES** - (a) Avoid getting clothes wet. (b) Wring out wet clothes or put on dry ones. Wear an outer windproof and waterproof garment. (c) If in the water, keep clothes on - they will help keep you warm. (d) In raft, devise a windbreak and spray shield from tarpaulin, sail cloth, or signal panel. (e) Exercise hands, arms, feet, and toes. (f) Anyone rescued from cold water should be dried, warmed, and given warm drinks if conscious. Irrational cases may require sedatives.

**2. PROTECTION OF HEALTH** - (a) **SEASICKNESS**: Take seasickness pills at once. Don't eat or drink until seasickness improves. Keep mentally occupied. (b) **IMMERSION FOOT**: CAUSE: Exposure to cold. Immersion in water, cramped quarters, restricted circulation. **SYMPTOMS**: Tingling, numbness, redness, and swelling. Blotchy red areas and blisters eventually appear.

**PREVENTION**: Keep feet warm and dry. Bail out raft. Maintain circulation by exercising toes and feet. Loosen footwear. Elevate feet and legs for 30-minute periods several times a day. **TREATMENT**: Same as prevention. Sprinkle sulfanilamide powder on blisters without opening them, put on dressing. After rescue keep off feet as much as possible. (c) **EYES**: Wear dark glasses. Apply boric acid ointment to eyelids and corners of eyes. (d) **SKIN**: Cover skin to avoid sunburn. Apply sunburn cream. Don't sit on a wet seat. Keep buttocks dry. (e) **INTERNAL**:

Don't take laxatives. Don't worry about lack of bowel movements.

## USE OF DRUGS

**1. ENERGY PILLS** - PURPOSE: To reduce fatigue, promote alertness, raise morale, and prevent sleep. Do not use for wounded or hysterical men. DOSE: Two tablets three times a day. Discontinue as soon as possible.

**2. ANTISEPTICS** - (a) **IODINE**: For cuts or minor wounds. Do not use on burns, blisters, or immersion foot. (b) **SULFANILAMIDE POWDER**: Dust on wounds, blisters, boils, and then cover with a dressing or bandage.

**3. MORPHINE** - USE: To relieve pain, especially after fractures. Do not give to unconscious persons. Thaw syrette under clothes before using. **INJECTION**: Prepare skin of upper arm or thigh with iodine. Follow directions on box containing syrette. Do not touch needle or prepared skin.

## RESCUE AIDS

## REGULAR RESCUE

**RADIO** - Radio is best means of obtaining aid. Spare no effort to get it working.

**OTHER EQUIPMENT** - Keep flares, Very pistol, smoke pots, rockets, dyes, and colored powders ready for constant use. Don't waste. Use only when rescue plane is heard or sighted. Practice use of signalling mirror. It can be seen for 10 or 15 miles. Signal with flashlight at night.

**SIGNALS** - Figure 2 shows common panel signals used to communicate with planes overhead.

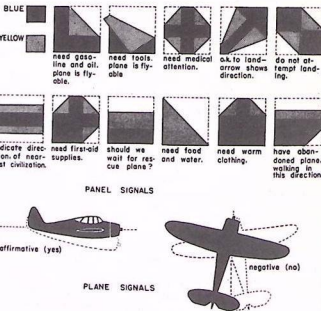


Fig. 2

## IMPROVISED AIDS

**ON LAND** - Keep plane free of snow. Scrape off paint in places where reflecting surface. Turn up shiny metal parts such as engine cowlings. Spread wing covers and colored objects on snow. Paint parts of plane orange. Make three square or rubber mats. On cold days make smoke fires to attract nearby plane. At night, make a fire on a high point. Tramp SOS in snow with letters in high. Darken with boughs or brush. In summer, cut lines or letters in brush. A ring 60 to 75 feet in diameter and 8 to 12 feet wide is good.

## DECISION: STAY AT THE PLANE OR LEAVE ON LAND

Decision rests with the Officer-in-Charge. Most rescues in the North have been made when crews remained at the plane. Abandon the plane only: (1) When you are certain of your position and know that shelter and assistance are within easy reach. (2) If you KNOW that rescuers are not likely to find the plane.

## FACTORS TO BE CONSIDERED

- ADVANTAGES OF STAYING AT THE PLANE** - (a) More easily located by searching parties. (b) Dangers associated with travelling are avoided. (c) Presumably more equipment is available. (d) Plane provides storage, fuel, and some degree of shelter.
- LOCATION** - (a) Try to locate your position by a study of charts, landmarks, flight course, and celestial observations. (b) Location must be known for proper evaluation of rescue possibilities and for determination of destination in case of travel.
- POSSIBILITIES OF RESCUE** - (a) If radio contact has been established, possibilities are good. (b) If close to the regular route, someone should find you. If far from the route, travel may be necessary. (c) Dense vegetation and bad weather lower the visibility and hamper rescue. (d) Rescue procedures along route may have much to do with the chances of rescue, especially on your previous knowledge of those procedures.
- DESTINATION** - (a) Consider distance, nature of terrain, and difficulties and hazards of travel. (b) What facilities and supplies are available at the destination, particularly food, communications, and medical aid.
- PERSONNEL** - (a) Consider physical condition of men, particularly those injured, and their ability to make travel. (b) Qualifications of individuals for travel and living off the land are important. Two best travellers may have to be sent for aid, particularly if other members of party are injured.
- EQUIPMENT AND SUPPLIES** - (a) Will leaving ship result in a critical reduction of useful and necessary equipment? (b) What articles of travel equipment can be improvised? (c) Travel requires more food. Is supply sufficient for projected travel period? (d) What are possible sources of sustenance enroute?

## AT SEA

Try to remain near ditching point if you believe searchers have knowledge of your position from radio contact or observation. Otherwise, get to shore in shortest time possible using wind and currents to best advantage.

## PROTECTION FROM ELEMENTS ON LAND SHELTER

**1. IN TIMBERED COUNTRY** - Build a lean-to or make a fabric shelter. (a) **LEAN-TOS** (Fig. 3). Make the front of the lean-to parallel with the prevailing wind. Use fabric covering if available. Otherwise, use tree boughs laid in shingle fashion starting at bottom. Cover floor thickly with tree boughs or other insulating materials. Close ends with fabric or boughs. Build a long fire of logs in front.

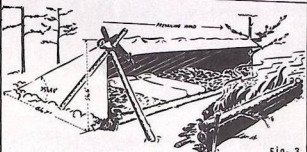


Fig. 3

(b) **FABRIC SHELTERS** - Use wing or engine covers or parachutes plus your ingenuity to improvise a simple shelter. The 'A' tent (Fig. 4) is good in strong winds. If parachute is used, make double cloth or improvise a floor. A teepee can be made from parachute by suspending it at top from a tree branch and staking out skirt. A single center pole or a number of poles stacked in Indian-teepee fashion can also be used. With ventilation at top, an inside wood fire is possible. The steep sides of teepee shed rain well. Fabric shelters are desirable in summer for excluding insects.

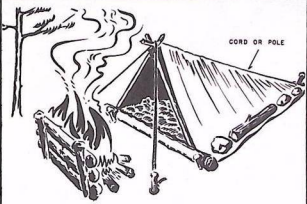


Fig. 4

## 2. IN TIMBERLESS COUNTRY

(a) **PARTS OF PLANE**: Construct shelter with fabric walls or snow blocks, using plane wing as roof (Fig. 5). This is satisfactory only if roof is well anchored and cannot move. If cowling or other plane parts are used for shelter, insulate outside with snow blocks. Cabin of plane is likely to be cold in winter. In summer it may provide satisfactory insect-proof shelter.

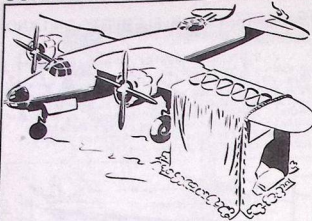


Fig. 5

(b) **SNOW CAVES** : They are warm and comfortable because snow is excellent insulator. They can be dug into well-packed snowdrifts. Dig a ditch and roof it over with fabric, or excavate a chamber (Fig. 6). Always provide ventilation. Arch roof and make walls slanting. Always keep a tool inside for digging out in case entrance is drifted over.

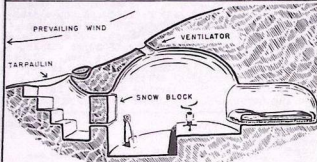


Fig. 6

(c) **FABRIC SHELTERS** : May be erected if poles are available.

**3. HINTS** - (a) In winter, don't live in plane any more than necessary. It is cold. (b) Pick camp site sheltered from the wind but not likely to be drifted over and buried by snow. (c) In mountains, don't camp below steep snow-covered slopes. (d) Valley slopes are warmer than valley floors. (e) Maintain ventilation in a shelter with a fire. (f) Insulate floors of shelters with boughs or other materials. (g) Use snow blocks for outside insulation. (h) Reconnoiter for castles. They are likely to be located near timberline along major streams, at river junctions, along blazed trails, in thick tall timber, and in the lee of hills.

### SLEEPING BAG

1. Insulation beneath sleeping bag is absolutely essential in winter. Use fabrics, sponge rubber, kapok, or tree boughs laid in shingle fashion.
2. Areas beneath shoulders and hips need special insulation.
3. Keep sleeping bags clean, dry and fluffy

ed up for maximum warmth.  
 4. To dry bag, turn it inside out, beat out frost, heat before fire. Be extremely careful about burning bag.  
 5. Wear only dry clothes to bed.  
 6. Pump out moist air in morning after getting up.  
 7. Arrange scarf around head at night so as not to exhale into sleeping bag.

### CLOTHING

1. Wear several thin layers of wool, rather than one thick layer.
2. Wear a windproof outer garment.
3. Keep clothes dry and clean. Dry them at every opportunity. Beat out frost before subjecting to heat. Be especially careful not to burn footgear. Brush off snow before entering shelter. Perspiration is commonest cause of dampness in clothing. Don't hesitate to take off part of clothing if warm. Don't sweat.
4. Avoid constrictions and tight fits.
5. Don't put so many socks in shoes that blood circulation is restricted.
6. Use dry grass, kapok, or other such materials in shoes as insoles and to collect frost.
7. Mukluks or moccasins with appropriate socks and insoles are best for dry cold weather.
8. Use shoepeacs in wet weather.
9. Footgear improvised out of parachutes or wire covers and lined with grass, lagging, or kapok are often warmer than regular shoes.
10. Use heated gravel to dry footgear.
11. Wear one or two pairs of woollen mittens inside windproof shell.
12. At night dry socks and extra clothing arranged loosely around the shoulders and hips will help to keep you warm.
13. Keep clothing in good repair at all times.

### HEAT

1. **FUEL** - In timbered country get dry wood from dead standing trees or the lower dead limbs of evergreens. In timberless areas, get fuel from driftwood along beaches and rivers, from scrub bushes along valleys or on windpeast ridge crests. Dry lichens, moss, coal, peat, fish, heat tablets, gas, and oil provide additional fuel. White weather is low spreading evergreen plant in tundra. It grows four to twelve inches high, and the resinous wood burns well both green and dry. Other green wood burns if split fine. Peat should be shredded and dried.
2. **STOVES** - Improve stoves for burning gasoline and oil (Fig. 7). Use great care in handling fuel. White weather is low spreading burning fire. If food is scarce, never burn potential foodstuffs such as fats and hides.

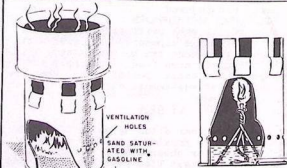


Fig. 7

**3. EMERGENCY METHODS OF MAKING FIRE**  
 For tinder use almost any bone-dry, finely shredded material such as cloth, cedar or birch bark, willow fuzz, and cotton grass. Additions of gunpowder, gasoline, or finely ground charcoal will help. An oily rag is good. In cold weather, too don't blow on tinder. Your breath contains too much moisture. Fan or wave the tinder instead. Sparks can be produced by using steel and any hard rock, preferably flint or chert. Use sparks from the plane's magneto or battery. Use the lens from a camera or some other optical instrument to concentrate the sun's rays on combustible materials. Naturally matches are best of all. Keep an ample supply in a waterproof container. Dry the heads of wet matches by rubbing through your hair.

**4. HINTS ON FIRES** (a) Light a candle with a match or cigarette lighter and use candle to start fire. (b) Use extreme care in laying fire. Make an open structure permitting free circulation of air. Use plenty of good kindling. (c) Dead pitchy evergreen stumps and birch or cedar bark make good kindling. (d) Wood fires on snow or ice should have insulating platforms of green logs. (e) At permanent camps with abundant fuel, keep fire going to conserve matches. Establish fire watch. (f) If fuel is scarce, use fire only for cooking. (g) A candle in a can provides sufficient heat for cooking.

### FOOD

#### G. I. RATIONS

Start eating local or native foods at once as supplement to regular rations. Officer-in-charge will ration food immediately. Go on half rations by end of first week unless native foods are plentiful. If travel is in prospect, save light concentrated foods for carrying. At least 2,000 calories are required when travelling, and more are desirable. One K-Ration unit (1 meal) has about 1,100 calories. About 1,000 calories per day are considered sufficient for basic sustenance with no activity, so one K-Ration unit per day will easily keep you alive.

#### NATIVE FOODS

**HINTS** - Few native foods in the North are harmful. Fresh meat and fat are healthful. Be sure game is in working order. Keep in condition by using very light oil or none at all. Experiment with various plants. Eat small quantities and note reaction.

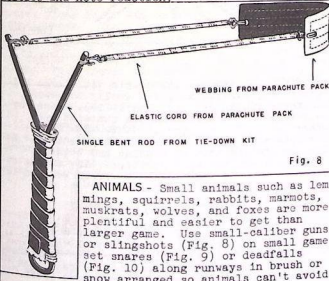


Fig. 8

**ANIMALS** - Small animals such as lemmings, squirrels, rabbits, marmots, muskrats, voles, and foxes are more plentiful and easier to get than larger game. Use small-caliber guns or slingshots (Fig. 8) on small game. Set snares (Fig. 9) or deadfalls (Fig. 10) along runways in brush or snow arranged so animals can't avoid



Fig. 9

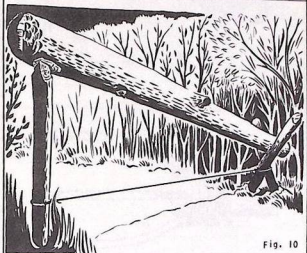


Fig. 10

them. Make arrangement look as natural as possible, and avoid leaving scent by using gloves. Porcupines can be killed with a club. Look for their fresh cuttings in the bark of evergreen trees. Stalking is essential to successful game hunting. Don't be in a hurry. Keep downwind from game and out of sight.

Moose prefer timbered country and marshy shores of lakes and rivers. Caribou roam through timber and over tundra. Bears are widely distributed but not actually dangerous. Southeastern Alaska has deer. Seals, walrus, polar bears, and small whales can be obtained in the Bering Sea, usually close to shore as long open leads in the ice. Seals come to the beach farther south. If possible, shoot seals and other sea mammals on land or ice. They are apt to sink when shot in water. Walrus or whale carcass on the beach are edible if not putrefied and furnish a good place to lie in wait for other animals. Use all parts of the animals including skins and edible internal organs. Save blood for soup or broth. Polar bear liver should be discarded.

# SURVIVAL

**FISH** - Fish are your most reliable native food. They are easily hooked, netted, speared, or trapped in fresh and salt water. In winter, fish through a hole in the ice. Almost anything serves as bait. Use feathers, parts of tin cans, or insignias for lures. Improve hooks (Fig. 11) and spears (Fig. 12). Build traps (Fig. 13) and set nets along streams and in the surf. Fresh-water fish should be cooked, but salt-water fish can be eaten raw except shark which should be cooked or dried. If the supply is plentiful, smoke and dry the excess.

NEEDLE MADE OF WOOD OR BONE

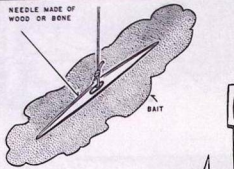


Fig. 11

HOOK MADE OF NAIL OR TIN-CAN KEY

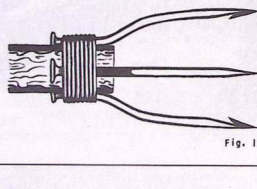


Fig. 12



Fig. 13

**BIRDS** - Ptarmigan are abundant throughout the North, and grouse are common in timber. Both like to stay on the ground and are easily stalked and shot. Ptarmigan can be trapped or sometimes killed with a club. In summer, ducks, geese, and other migratory waterfowl are numerous. Look for eggs on cliffs frequented by birds, along edges of lakes, and on islands.

Seagulls can be caught with baited hooks just like fish. Ptarmigan, grouse, ravens, and owls stay in the North all year. Improve snares to catch them.

**SHORE FOODS** - Seashores have abundant food. Shellfish and mollusks are numerous, and all are edible with the possible exception of occasional black mussels and clams south of the Aleutians. These should be eaten with caution at first. Dig for clams on tidal flats at low water and pry other mollusks off rocks. Search tidal pools for fish and watch for crabs, shrimps, scallops, snails, limpets, sea urchins, and sea cucumbers. Small fish can sometimes be scooped from the surf in great numbers.

**PLANT FOOD** - (a) **BERRIES** : These are plentiful on low shrubs in many places during the summer and fall. All are edible, but some taste better cooked. A few berries stay on the bush throughout the winter and improve with age. (b) **GREENS** : Almost any tender green succulent plant or herb can be used as a green if not bitter when cooked. Look particularly for cowslip, rhubarb, willow, mountain sorrel, fireweed, and ferns. The inner bark of lodepole pine and birch is edible if boiled and roasted. Avoid all parts of the water hemlock (Fig. 14).

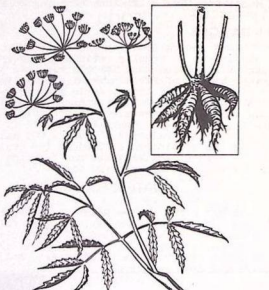


Fig. 14

(c) **ROOTS** : Search for plants with large bulbous roots, particularly the woolly lousewort, sweetvetch, bistort, and pond lilies. Roast or boil roots. Cattail rootstock contains much starch in the fall. (d) **LICHENS AND MOSS** : Reindeer moss and rook tripe contain starch. Remove irritating acid by soaking and boiling; then roast or cook to a porridge. Try adding to other foods. (e) **SEAWEED** : Fresh seaweed is edible.

## WATER

The brownish water in tundra and muskeg pools and streams is safe. Purify all questionable river water. Melt ice rather than snow; it takes much less fuel. On the ice pack, use old bluish rounded ice masses--they are fresh.

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## COOKING

Raw meat is healthful, and some should be eaten. However, warm meals are generally desirable. Don't overcook meat. Cooking is easiest and saves fuel. Keep lids on pots. Drink cooking water from meat and plants unless plants are bitter. Make stews or cook various foods together.

## SPECIAL CONDITIONS AT SEA

**WATER** - Base your rationing on an expected 5 days at sea. Issue no water or food for first 24 hours. Issue food before water. A little extra pint of water a day is usually sufficient. Cover a rain and dew on tarpaulins. Don't drink catch water. If rain comes, fill all containers and drink your fill of the excess. Drink slowly if without water previously.

**FOOD** - Do not eat if without water. Eat slowly. Catch fish with kit in raft. If necessary improve hooks (Fig. 11) and line for netting. Shine a light on water at night to attract fish for netting and spearing. Dry excess fish. All fish are edible raw except possibly shark which should be dried. Improve grapnel hook to drag behind raft. Shake crabs, fish, and shrimps from hunks of seaweed caught with grapnel. Fresh seaweed is edible, but salty. Birds can be caught with baited hooks and occasionally by hand. Birds follow schools of fish.

## TRAVEL

### ON LAND

1. **TRAVEL HINTS** - (a) **DESTROY CLASSIFIED DOCUMENTS AND SECRET EQUIPMENT BEFORE LEAVING FLAME.** (b) Take it easy. Conserve energy. If tired by midafternoon, stop and make camp. (c) Always stop early enough to make a comfortable camp. (d) Carry adequate but only necessary equipment. The following items are suggested: Sleeping bag, fabric for shelter, waterproof match container (knife, food, candles, cooking equipment, axe, kudu, and ammunition), fishing equipment, maps, compass, extra clothing, first-aid kit, sewing kit, sunglasses. Don't overload. Keep equipment in good condition; guard against losses; and protect food from freezing and loss. (e) Be prepared to fight passing planes. (f) Stay on route. (g) Don't travel alone if it can be avoided, even on reconnaissance. Don't wander from camp and get lost. Mark trail and leave messages wherever possible. (h) To follow a straight line, choose two easily visible points ahead in line along the route. Then travel keeping the two points in line. (i) Take advantage of game trails. (j) Clear Arctic air makes distant objects seem near, and sound travels easily 10 miles or more. (k) Plot your course on a map. (l) Learn to estimate distances from travel times and by checking against landmarks. Regular army quick-time marching is about 3.4 m.p.h. and route marching is 2.5 to 3 m.p.h. (m) Improve travel aids such as snowshoes, sleds, rafts, and packs. (n) Keep logbook of travels.

2. **IN SUMMER** - (a) Dense vegetation, rough terrain, insects, soft ground, swamps, lakes, and large unfordable rivers are obstacles in early moving. (b) Cross glacier-fed streams in early morning to avoid maximum volume. (c) Care for your feet. (d) Summer travel is easiest by water. Use life raft from plane or

improve one. (e) In descending a river by raft, watch for signs of rapids, falls, log jams, and partly submerged rocks. A portage may be dangerous if suspected. (f) Rafts can be let down in fast water by ropes attached from the bank.

3. **IN WINTER** - (a) Soft deep snow, dangerous river ice, severe weather, and a scattering of native foods. (b) Don't travel. (c) Avoid major obstacles to wind during extremely cold windy weather. Hole up and save your strength. (d) Be careful of wind overflows along streambeds. They are covered by thin ice and snow. Ropes are covered when crossing dangerous river ice. Young ice is unreliable, and ice over rapids is usually thin. (e) If you do break through ice together, get out at once, and get out of your wet clothing as fast as you can. (f) February to May is usually the best season for Arctic travel.

4. **IN THE MOUNTAINS** - (a) On glaciers be careful of snow-bridged crevasses. Always travel 50 feet together with 3 men on a rope about 30 to 50 feet apart. (b) Travel down a river or along the snow if crusted. Don't travel during day in melt-wet deep snow if it can possibly be avoided. (c) Watch for avalanches on steep snow-covered slopes, particularly on cold days or after heavy snowfalls. Such slopes are best avoided. (d) Mark frequently traveled trails with sticks placed upright in the snow. Two sticks indicate a crevasse. (e) Use an ice axe or stick to poke for crevasses and as an aid to travel.

5. **CHOOSING A ROUTE** - (a) In this region, most routes should be chosen to lead you to: (1) The Alaska Highway, (2) the seacoast, (3) a major river, or (4) some known point of habitation. (b) Travel down a river or along a seacoast will usually lead to a cache, a cabin, or place of habitation. (c) The larger rivers in the interior of Alaska and Canada, such as the Yukon and Kuskokwim, are main lines of travel and winter travel. (d) If your objective is on a road, river, or seacoast, deliberately plot your course so as to intersect this feature well to the right or left of your objective so you will know which way to travel when you come to the road, river, or seacoast. (e) Always use safest route even though longer. (f) Use topography to best advantage with wind direction. (g) Do not cross them, particularly in summer. (h) Travel is often easier on an upland or ridge than on a lowland or valley floor, especially in summer.

6. **FINDING DIRECTION** - (a) Use compass, but remember magnetic declination in this region ranges from 15 to 25 degrees. Get true bearing from magnetic bearing by adding easterly declinations. (b) At noon in the North Country the sun is due south. (c) The North Star always indicates true north.

7. **IMPROVED TRAVEL AIDS** - (a) Make snowshoes from inspection plates, small doors, seat bottoms, metal tubs, or other flexible woods. (b) Use twine to improve travel aids. Make shoofly lines provide good ties and netting. Make snowshoes turn up a bit at toes. These may be essential for winter travel in timbered areas. (c) Sleds can be improvised from cabin doors, mail landing-wheel doors, bomb-bay doors, and mail landings. Sleds should be long and narrow and somewhat turned up at both ends. (d) Make ropes from shoofly lines. Each line has about 450 pounds tensile strength. Ropes to be used

# SURVIVAL

for supporting personnel should consist of double shroud lines. (d) Construct pack from parachute harness or from pair of trousers (Fig. 15). Improve tumpline for heavy packs.

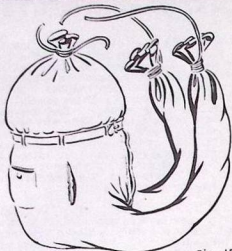


Fig. 15

(e) Construct rafts from dry logs at least 12 inches in diameter. Build near water. Raft should be oblong—about 8 ft. by 4 ft. is sufficient for 2 men and equipment. Lay two long logs parallel and about 4 ft. apart. Lash shorter logs crosswise on top (Fig. 16). If possible, notch lower logs as means of seating cross logs. Raft should have enough buoyancy not to be awash. Tire tubes and empty gas tanks can also be used for rafts.

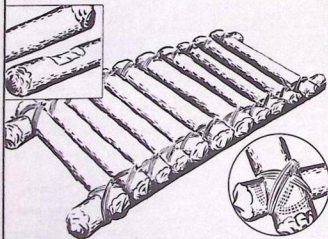


Fig. 16

## AT SEA

1. Drift of raft is controlled largely by currents and winds.
2. At all seasons resultant winds along most of Pacific Coast and Gulf of Alaska blow toward shore. Currents are mostly toward shore or parallel to it.
3. In Bering Sea in summer resultant winds blow toward shore, and currents flow toward shore or parallel to it, except opposite Yukon-

Kuskokwim delta where flow is away from shore. In winter both currents and winds carry you southwest toward Kamchatka Peninsula except locally in Bristol Bay. However, much of Bering Sea is frozen in winter.

4. To travel with current, raft should rest deep in water, and personnel should lie low if wind is contrary. The sea anchor or other type of drag helps.

5. To travel by wind, raft should be light in the water, personnel should sit up, and sails should be spread.

6. Rowing provides means of keeping warm, but don't exhaust yourself by rowing without definite objective in view.

7. Considerable steering is possible with spare oar.

8. Any land is probably better than a raft in a cold ocean.

9. Birds homing in evening serve as guides to shore.

10. Fixed clouds are usually above land.

11. In approaching shore with high surf, try to get into lee of a point or island to make landing.

12. Tidal currents in narrow passages along Pacific shore are often swift. Such places should be avoided.

13. In rough sea, wear life jackets and attach personnel to raft by an 8-foot line.

14. Keep a logbook.

## LOCAL INHABITANTS

Most settlements are on seacoasts or along major rivers of interior. Prospectors, trappers, and hunters are sparsely scattered throughout the region, and mining districts provide outlying centers of habitation. Eskimos live in Arctic and Bering coastal regions, and Indians occupy interior. White people tend to be concentrated in major settlements, mining districts, and at trading posts, schools, and missions.

All Persons, native and white, are friendly and willing to render aid if properly approached. Be kind, direct, and honest. Express needs by signs and pantomime. Many establishments, unless entirely native, have radio communication, particularly trading posts, schools, and missions. Medical care may be available at some of latter.

## SUMMARY

1. MAKE EVERY EFFORT TO ESTABLISH RADIO CONTACT.
2. LEAVE PLANE ONLY IF SURE OF REACHING AID, OR IF RESCUE IS HIGHLY IMPROBABLE.
3. DESTROY CLASSIFIED DOCUMENTS AND SECRET EQUIPMENT IF PLANE IS ABANDONED.
4. TRAVEL DOWN RIVERS AND ALONG COASTS.
5. KEEP CLOTHES DRY. DON'T SWEAT. KEEP OUT OF WIND.
6. THAW FROZEN PARTS GRADUALLY. DON'T RUB WITH SNOW.
7. AVOID EXHAUSTION.
8. DON'T BURN A FIRE IN AN UNVENTILATED SHELTER.
9. LEARN TO LIVE OFF THE COUNTRY.

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**CORRECTION AND/OR ADDITION REPORT**

**AIR ROUTE MANUAL—UNITED STATES TO ALASKA**

**(4th ISSUE)**

*(Report all corrective information on fields included in this manual. Detach this sheet and mail to "Commanding General, Army Air Forces, Office of the Assistant Chief of Air Staff, Intelligence, Attention: Air Movements Branch, Washington, D. C.")*

The following corrections, additions, and/or recommendations are suggested:

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**NOTE.**—Execution of this report does not relieve Commanders of their responsibility as prescribed in Section III, War Department Circular No. 179, dated 7 Aug. 1943.

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Alaska—Interior Routes (2nd Issue)	February 20, 1943
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Natal, Brazil, to Cairo, Egypt (2nd Issue)	June 1, 1943
Northwest Africa (2nd Issue)	June 18, 1943
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Aleutian Islands (2nd Issue)	April 2, 1943
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The above are the dates of publication of the current issues of Air Route Manuals as of

JANUARY 21, 1944

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CORRECTION AND/OR ADDITION REPORT

AIR ROUTE MANUAL—UNITED STATES TO ALASKA  
(4th ISSUE)

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The following corrections, additions, and/or recommendations are suggested:

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Name and Rank

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Date and Place

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EXTRACT OF WAR DEPARTMENT CIRCULAR NO. 179

7 August 1943.

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III—Foreign air routes and airport information.—Section VII, Circular No. 163, War Department, 1942, as amended by section II, Circular No. 222, War Department, 1942, is rescinded and the following substituted therefor:

1. Foreign air routes and airports.—The Assistant Chief of Air Staff, Intelligence, Army Air Forces, is responsible for providing various planning and operating divisions of the Army Air Forces and the Military Intelligence Service, War Department General Staff, with pertinent operational data on foreign air routes, airports, and other air facilities within each war theater of operation. This information will be disseminated to the appropriate agencies both within and outside of the Army Air Forces, in the form of air route manuals, air pilot manuals, and foreign airport directories.

2. Transmission of information.—To maintain these data current, accurate, and complete for each theater of operation, control officers of the Army Air Forces clearing stations within the continental limits of the United States, as well as commanding officers of the Army Air Forces stations outside of the United States, including all commands, and components thereof, and military attachés will be responsible for—

a. Gathering of current information concerning air facilities under their command and such facilities in adjacent areas over which the Army may have no jurisdiction. Commercial and military agencies may be utilized to accomplish this purpose.

b. Prompt transmission of this information in the form of a periodic report sent direct to the Assistant Chief of Air Staff, Intelligence, Headquarters, Army Air Forces, Washington 25, D. C.

3. Preparation of report.—This report will be prepared and transmitted during the first week of each month on Foreign Airport Description Form No. 63, AAF, in accordance with the instructions thereon. Subsequent monthly forms, in lieu of restating identical wording, may bear the notation "No change" where applicable. Control records will be maintained, and all reports received will be acknowledged. The report will be classified by the appropriate officer according to provisions of AR 380-5, and will include negative as well as positive information. Supplies of the above form will be issued to appropriate Army Air Forces stations, and additional copies may be secured from Chief, Air Service Command, Wright Field, or from the Office, Assistant Chief of Air Staff, Intelligence, Headquarters, Army Air Forces, Washington 25, D. C.

(A. G. 580.8 (5 Jul 43).)

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BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,  
Chief of Staff.

OFFICIAL:  
J. A. ULIO,  
Major General,  
The Adjutant General.

