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CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

TRANSPORTATION & PUBLIC UTILITIES BRANCH

CIVIL AVIATION
IN
CANADA
1937



OTTAWA 1938

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TRANSPORTATION AND PUBLIC UTILITIES BRANCH OTTAWA

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Chief, Transportation and Public Utilities Branch, G.S. Wrong, B.Sc.

CIVIL AVIATION IN CANADA

1937

Statistics on civil aviation in Canada are collected under authority of the Statistics Act, 1918, and the Air Regulations, 1920. The Civil Aviation Branch of the Department of Marine published these statistics prior to the report for 1936, and when that branch was transferred to the Department of Transport, the collection of the Statistics was transferred to the Dominion Bureau of Statistics.

The Civil Aviation Division of the Department of Transport has jurisdiction over the licensing of airports, aircraft, pilots, and engineers, and supplies the Bureau with the statistics on these licences. The other statistics in this report are collected direct from the operators. The financial data are for the fiscal years of the operators which are not in all cases calendar years.

These statistics do not include the aircraft of the Department of National Defence and operating reports are not required from private operators, although private aircraft and all pilots must be licensed by the Civil Aviation Division of the Department of Transport and are included in the number of licensed aircraft and pilots.

The statistics for 1937 are shown under four headings. Light aeroplane clubs are subsidized by the Dominion Government and their chief operation is the training of pilots. For flights around the club fields in instruction and practice no statistics are required of miles flown, but when flights are made from port to port the mileage is computed for aircraft, pilot, and passengers. The Dominion and Provincial aircraft are engaged almost solely in forest protection, aerial surveying and similar work. Data for international companies include only operations between Canadian and United States ports and do not include operations between foreign ports.

The mail carried by these companies is under both Canadian and United States postal contracts. Commercial companies also carry mail for mines, etc., not under postal contract, and one company has a contract with the means of transportation optional. These account for the difference between the total mail carried by air and the mail carried under postal contracts.

Commercial companies include all companies and individuals operating aircraft for the public transportation of passengers, freight, and mail, and also a few mining companies which operate aircraft for prospecting and mining operations. A large part of commercial passenger and freight traffic is in connection with mining operations in northern districts where previously the means of transportation was cance in the summer and dog sleigh in the winter. The numerous lakes in most of the northern mining areas provide landing surfaces in the summer for aircraft equipped with floats and in the winter for aircraft equipped with skis. In Quebec and Ontario the distances from the railways to the mines are not great, but in the western provinces and in the North West Territory some of the distances are hundreds of miles. The air line distance from Waterways on the Northern Alberta railway to the radium mines on Great Bear Lake is around 700 miles and the mail route from Fort McMurray to Aklavik at the mouth of the Mackenzie river is over 1,400 miles.

Until recently more freight was carried by aircraft in Canada than in any other country, but the report for the Union of Soviet Socialist Republics states that in 1937 approximately 35,000 tons of freight were transported whereas the tonnage carried by Canadian aircraft was, in round figures, 13,000 tons. The corresponding tonnage for United States civil aircraft was 3,000 tons.

Freight traffic has increased very rapidly during the last four years. The total for 1931 was only 2,372,467 pounds. In the next two years the Quantity about doubled, and in 1934 it increased to 14,441,179 pounds, or to over three times the 1933 Quantity. In 1935 it increased to 17,615,910 pounds, in 1936 to 25,387,719 pounds, and in 1937 to 26,279,156 pounds.

Mail carried under Canadian postal contracts increased from 470,461 pounds in 1931 to 1,323,584 pounds in 1937 and, including United States mail carried in and mail not under postal contracts, to 1,450,473 pounds in 1937.

Passenger traffic shows increases, but not at rates comparable with freight and mail increases. During 1937 a total of 110,864 paying passengers was carried and 30,294 non-paying passengers, excluding students carried in light aeroplane club aircraft.

Investments of the Dominion Government in the Trans-Canada Airways system are not included in these statistics, but will be when the system is completed and begins to operate.

Tables 8, 9, and 10 show the passengers, freight and express, and mail traffic, according to the province in which loaded and according to class of carrier. Traffic from foreign countries is from the United States including Alaska.

Table 11 analyses the accidents reported according to the class of flight and class of carrier. Commercial companies reported one bystander killed in an

aircraft accident which is not included in the averages computed for Table 13. Because much of the mileage flown by international companies is over foreign territory and made by both Canadian and United States aircraft, the data for these companies are not combined with those of the commercial companies in the averages in Table 13.

Accidents to aircraft belonging to persons not engaged in commercial operations are not included in these data and operating reports were not received from a few operators owning only one plane. Five of these commercial operators had accidents in which eight persons were killed and the planes were destroyed. If reports had been received from these operators and the data included in this report the accident averages in Table 13 would have been greatly increased because the number of flights, miles flown, etc., for these planes would undoubtedly have been insignificant compared with the miles flown by the large organizations which were practically accident free. The averages, however, are correct for the reports received which include all the important organizations.

Mileage for local flights of light aeroplane club aircraft is not computed and this omission in total figures would materially affect averages based on miles flown. Consequently, averages for total figures have not been included in Table 13.

In comparison with 1936 averages, the duration of flight increased by 7 per cent, the distance by 15 per cent, and the passenger journey by 20 per cent.

Accident averages showed a decided improvement, particularly averages for persons killed and injured in aircraft flights.

1. STATISTICAL SUMMARY OF CIVIL AVIATION IN CANADA, 1931-1937

No. No.	νο.	No.
Firms manufacturing aircraft 7 7 7 6 10 Firms chiefly operating aircraft 100 73 87 125 123 Firms using aircraft as auxiliary service 4 3 3 7 Aircraft flights made 144,080 102,219 106,252 128,031 153,211 Aircraft hours flown 73,645 56,170 53,299 75,871 88,451 Approximate aeroplane mileage 5,280,958 2,786,609 2,733,642 3,430,475 4,314,192 Approximate float seaplane mileage. 1,553,721 1,503,157 1,641,911 3 Approximate boat seaplane mileage. 180,620 198,792 99,433 3,067,162 3,207,910	7	9
Firms chiefly operating aircraft 100 73 87 125 123 Firms using aircraft as auxiliary service 4 4 3 3 7 Aircraft flights made 144,080 102,219 106,252 128,031 153,211 Aircraft hours flown 73,645 56,170 53,299 75,871 88,451 Approximate aeroplane mileage 5,280,958 2,786,609 2,733,642 3,430,475 4,314,192 Approximate float seaplane mileage. 1,553,721 1,503,157 1,641,911 2 Approximate boat seaplane mileage. 180,620 198,792 99,433 3,067,162 3,207,910	7	9
Firms using air craft as auxiliary service 4 4 3 3 7 Aircraft flights made		
Aircraft flights made	116	162
Aircraft hours flown	12	10
Approximate aeroplane mileage 5,280,958 2,786,609 2,733,642 3,430,475 4,314,192 Approximate float seaplane mileage. 1,553,721 1,503,157 1,641,911) Approximate boat seaplane mileage. 180,620 198,792 99,433) 3,067,162 3,207,910	160,014	190,403
Approximate float seaplane mileage. 1,553,721 1,503,157 1,641,911) Approximate boat seaplane mileage 180,620 198,792 99,433) 3,067,162 3,207,910	101,953	126,896
Approximate boat seaplane mileage 180,620 198,792 99,433 3,067,162 3,207,910		
		• • •
Approximate amphibian mileage 30,950 80,573 63,319)		
Total aircraft mileage	7,803,942	10,755,524
Average flight duration (minutes) 30 33 30 36 34	38	40
Pilots carried 144,080 102,219 106,252 128,031 153,211	160,014	190,403
Passengers and crew carried 100,128 76,800 85,006 105,306 177,472	127,937	168,652
Total personnel carried 244,208 179,019 191,258 233,337 . 330,683	287,951	359,055
Pilots carried one mile (pilot miles) 7,046,276 4,569,131 4,538,315 6,497,637 7,522,102	7,803,942	10,755,524
Passengers and crew carried one mile (passenger miles) 4,073,552 2,869,799 3,816,862 6,266,475 7,936,950	12,055,684	17,695,591
Total personnel carried one mile (personnel miles) 11,119,828 7,438,930 8,355,177 12,764,112 15,459,052	19,859,626	28,451,115

			•				
Total freight or express carried (1b)	2,372,467	3,129,974	4,205,901	14,441,179	17,615,910	25,387,719	26,279,156
Total mail carried (1b.)	(a)470,461	(a)413,687	(a)539,358	(a)625,040(a)1,126,084(a)1,161,069(b)1,450,473
Licensed Civil Airports							
Total airports (all types)	83	83	90	101	96	155	158
Licensed Civil Aircraft							
Aeroplanes (twin-engined)	0 p g	•••	1		• • •	• • •	
Aeroplanes (triple-engined)	1	1			•••		
Aeroplanes (single-engined) (d)	466	416	331				***
Boat seaplanes (single-engined)	23	26	12	• • •			
Amphibians (single-engined)	5	2	1				
Total aircraft (all types)	495	445	345	368	380	475	604
Licensed Civil Air Personnel							
Commercial pilots	(e)	(e)	474	405	414	380	320
Limited commercial pilots						65	129
Transport pilots	0 6 0	• • •		• • •	• • •	42	73
Private pilots	(e)	(e)	405	429	496	559	635
Air engineers	(e)	(e)	403	461	472	533	595

⁽a) Canadian postal contracts.

⁽b) Carried under Canadian postal contracts, 1,323,584 lbs.

⁽c) Revised.

⁽d) Many aeroplanes with wheels may be equipped with skis or floats as conditions demand. (See Table 3.)
(e) The basis of classification was changed in 1935.

2. AIRPORTS IN CANADA, 1937.

Municipal Airports

Location	Name of Aeroplane Club using Airport	Landing Surface	Capacity of Hangar	Investment
			Sq. ft.	\$
PRINCE EDWARD ISLAND	2 2 2 2			
Summerside	(none)	Land and Water	-	9,552
NOVA SCOTIA				7,77
Halifax	Halifax Aero Club	Land	2,400	-1,300
NEW BRUNSWICK		2	2,.00	1,,00
Fredericton	(none)	Water		
Moncton	(none)	Water	4,881	27 970
Saint John	Saint John Flying Club	Land	5,200	23,830
QUEBEC		20000	7,200	714, 107
Cap de la Madeleine	(====)	7 3		
	(none)	Land	-	X
ONTARIO				
Brantford	Brant Norfolk Aero Club		1,300	6,650
Fort William	Fort William Aero Club (none)		2,400	975
Hamilton	Hamilton Aero Club	Water	5 700	-
Kingston	Flying Club of Kingston	Land	5,700 7,500	7.500
Little Current	(none)	Land and Water	1,500	3,500
Port Arthur	(none)	Water		3,200
Stratford	(none)	Land	-	15,000
Waterloo	Kitchener Waterloo Flying			1,000
	Club	Land	5,000	1,600
MANITOBA				
Virden	(none)	Land		1,150
Winnipeg	Winnipeg Flying Club		X	17,784
SASTAROUM, AU				21110
Moose Jaw	Moose Jaw Flying Club, Ltd.	Land	11,600	42,500
North Battleford	(none)	Land	4,520	8,485
Regina	Regina Flying Club	Land	12,000	200,000
Saskatoon	Saskatoon Flying Club	Land	3,600	36,127
Weyburn	(none)	Land	-	2,000
Yorkton	(none)	Land	560	4,500
ALBERTA				
Calgary	Calgary Aero Club	Land	7,800	54,638
Cooking Lake	(none)	Land and Water	_	20,658
Edmonton	Edmonton and Northern Albert			
	Aero Club		8,000	165,070
Grand Prairie	(none)	Land	1,680	800
Lethbridge	(none)	Land	4,800	54,231
Peace River	(none)	Land	-	12,000
	(none)	Land	-	
BRITISH COLUMBIA		LE LE VANDO		1
Cranbrook	(none)	Land	3,850	14,923
Fernie Grand Forks	(none)	Land	3,000	10,000
Trail	(none)	Land	x	2,850 X
Vancouver	Aero Club of British	Delilu	^	A
	Columbia	Land and Water	34,066	737,000
Vernon	(none)	Land	3,000	5,000
Williams Lake	(none)	Land	-	902

[#] Not included in investments shown in Table 4. X Information not available.

2. AIRPORTS IN CANADA, 1937 - Concluded

Other Airports

Kind	Land Only	Water	Land and Water	Total.
	No.	No.	No.	No.
Public	17	27	-	44
Public-auxiliary	2		00	2
Public-temporary	1	- 00		1
Dominion Government	***	3	1	4
Intermediate	30	-	-	30
Provincial	~	11	~	11
Private	13	16	-	29
Total, Other Airports	63	57	1	121
Total, Municipal Airports	30	3	14	37
GRAND TOTAL	93	60	5	158

3. LICENSED CIVIL AIRCRAFT IN CANADA, DEC. 31, 1937.

Aircraft	Dominion and Provincial	Private	Light Aeroplane Clubs	Commercial +	Total
	No.	No.	No.	No.	No.
Gross Weight ^X					
Up to 2,000 lb	39 21 17	95 16 3	71 - - -	111 95 127 9	316 132 147 9
Total	77	114	71	342	604
Туре		Hell III			
Amphibians Land planes Convertible \$\opi \text{	25 1 34 17	1 - 99 14	1 - 68 2	5 121 216	32 1 322 249
Total	77	114	71	342	604

- Includes Canadian licensed aircraft of international companies.

 *** Total weight of aircraft with supplies and full load.
- May be equipped with wheels, floats or skis as conditions demand.

4. INVESTMENT IN CIVIL AVIATION IN CANADA, 1937.

Item	Provincial Government	Light Aeroplane Clubs	Commercial	Total
	\$	\$	\$	\$
Land and buildings	7,000	31.735	772,997	811,732
Aircraft	415,000	83,928	2,792,687	3,291,615
Tools and equipment	3,900	9,684	444,046	457,630
Furniture and office appliances	-	4,224	40,035	44,259
Organization expenditures	-	2,576	1,036,544	1,039,120
Total	425,900	132,147	5,086,309	5,644,356

REVENUES AND EXPENSES OF CIVIL AVIATION IN CANADA, 1937.

Item	Provincial Government	Light Aeroplane Clubs	Commercial	Total
	3	\$	\$	\$
Total operating revenues Total operating expenses	266,691	248,776 233,136	2,985,504 3,432,269	3,23 ⁴ ,280 3,932,096
Net operating revenues	Dr. 266,691	15,640	Dr. 446,765	Dr. 697,816

6. EMPLOYEES AND SALARIES AND WAGES IN CIVIL AVIATION IN CANADA, 1937

	Provincial Government	Light Aeroplane Clubs	Commercial	Total
Employees	7 8 167,651	70 98,170	617	765 1,274,020

7. OPERATIONS OF CIVIL AIRCRAFT IN CANADA, 1937

		L MINORMET IN			
	Light Aeroplane Clubs	Provincial and Dominion	Inter- national	Commercial	Total
Number of clubs	22 1,195 1,200	0 · 0	0 0 0 0 0 0		1,195 1,200
Number of flights of aircraft Numbers of miles flown Numbers of hours flown	53,321 2/ 29,900 20,549	11,009 699,777 8,818	3,814 762,333 5,462	122,259 9,263,514 92,067	190,403 10,755,524 126,896
Gallons of gasolene consumed	138,822	126,971 3,419	139,189	1,817,751 5 ⁴ ,139	2,222,733
Numbers of crew carried	40,713 12,608 18,671 380 8,163	12,092	6,807 9,352 1,300	127,006 101,132 13,821	186,618 12,608 18,671 110,864 30,294
Totals, personnel carried	80,535	19,102	17,459	241,959	359,055
Numbers of non-paying passengers carried		750,227	1,362,578	11,795,980	13,939,185
one mile	0/ 57 000	455,497	280,463	1,117,706	1,853,666
Pupils given instruction	1,009	1,205,724	3,517,642 12 12,836 189,344	23,670,749 646 24,304,774 1,261,129	28,451,115 1,673 26,279,156 4/ 1,450,473
Ton miles of freight and express Ton miles of mail		Not computed	1,080	1,873,643	5/ 1,874,723
Totals, Ton Miles, Freight, Express, and Mail		• • •	19,692	1,967,589	5/ 1,987,281
Square miles sketched from aircraft Square miles photographed - vertical Square miles photographed - oblique Tumber of forest fires detected from the		427 20	• • • •	14,474	6/ 14,474 11,127 7/ 3,870
air and reported	• • •	308	• • •	257	565

^{1/} Flying between Canadian and United States ports.

2/ Station to station only.

5/ International and commercial only.

7/ Exclusive of 56,500 square miles by National Defence aircraft.

^{3/} Dual flights - pilot with student passenger.
4/ Carried under Canadian postal contract, 1,323,584 lbs.

^{6/} Exclusive of 23,500 square miles by National Defence aircraft.

8. AIR TRAFFIC IN CANADA, BY PROVINCES, 1937.

		Pass	engers Carrie	ed		
	Light Aeroplan	Provincial	Inter-			
Origin of Traffic	Local and Student Passenger	Station to Station	& Dominion Governments	national Companies	Commercial Companies	Total
	No.	No.	No.	No.	No.	No.
Prince Edward Island					630	630
Nova Scotia	1,715		66		613	2,394
New Brunswick	574		334		872	1,780
Quebec	1,231	170		2,712	26,585	30.698
Ontario	12,919	69	5,297	325	44,588	63,198
Manitoba	4,257	25	1,212	1,067	11,165	17,726
Saskatchewan	1,924	116	56		12,270	14,366
Alberta	3,092		45		5,464	8,601
British Columbia	1,122			1,981	6,632	9,735
Tukon & Northwest Territori	es				5,626	5,626
Foreign countries	* * *			4,567	508	5,075
Total	26,834	380	7,010	10,652	114,953	159,829

[/] Start and finish of trip at same field.

9. FREIGHT AND EXPRESS LOADED, 1937

Origin of Traffic	Provincial Government	International Companies	Commercial Companies	Total
	Lb.	Lb.	Lb.	Lb.
Prince Edward Island			549	549
Nova Scotia			250	250
New Brunswick		0.4.0	5,839	5,839
Quebec		496	3,052,408	3,052,904
Ontario	1,844,366		11,606,415	13,450,781
Manitoba	117,180	78	3,823,739	3,940,997
Saskatchewan			1,176,481	1,176,481
Alberta			2,399,635	2,399,635
British Columbia	***	635	547.947	548,582
Tukon and Northwest Territories			1,691,265	1,691,265
Foreign countries		11,627	2146	11,873
Total	1,961,546	12,836	24,304,774	26,279,156

10. MAIL LOADED, 1937

Origin of Traffic	International Companies	Commercial Companies	Total
	Lb.	Lb.	Lb.
Prince Edward Island		126,460	126,460
New Brunswick	• • •	148,910	148,910
Quebec Ontario Manitoba	44,440 1,771 23,039	1 ⁴² ,171 312,635 230,725	186,611 314,406 253,764
Saskatchewan Alberta British Columbia	8,381	61,459 110,526 42,057	61,459 110,526 50,438
Tukon and Northwest Territories	111,713	70,728 15,458	70,728 127,171
Total	189,344	1,261,129	x 1,450,473

X - Carried under Canadian postal contracts, 1,323,584 lbs.

11. ACCIDENTS RESULTING FROM AIRCRAFT IN FLIGHT IN CANADA, 1937.

	Mumber	Total	Number of Accidents Resulting in-					
Class of Flight	of	Hours	Death	Property		Killed	In	jured
	Flights	Flown	or Injury	Damage only	Crew	Passenger	Crew	Passenger
		C	OMMERCIAL	SERVICE				
With passengers,								
freight & mail	91,327	72,124	3	26	1	+ 3	1	3
With crew only	20,059	13,809	1	19	-	-	1	-
Instruction	8,507	3,565	-	4	-	-	-	-
Other	2,366	2,569	-	est	-	-	_	
Total	122,259	92,067	4	49	1	+ 3	2	3
		LIG	HT AEROPLA	NE CLUBS				
Instruction-		1						
student solo	12,608	4,985	2	9	2	_	-	-
Instruction- student dual	18,671	7,331					_	
Licensed pilot-	10,011	1977			11933			CE SECTION OF
solo	13,870	5,233	-	10		_	-	-
Licensed pilot					= = 1		111 121	
with passenger	8,172	3,000	1	6	1	1	-	-
Total	53,321	20,549	3	25	3	1	-	
		DOLLATION	AND BROWT	NCIAL AIRCR	Λ TOPIT		See Line	
		DOMINION	AND PROVI	NOTAL ATTION	AF I	100		
Forest protection	8,581	6,516	1	1		-	1	1
Exhibition and miscellaneous	71	101		1	_	44	_	_
Other	2,357	2,201	_	_	_	_	-	_
Total	11,009	8,818	1	2	_	-	1	1
GRAND TOTAL	186,589	121,434	8	76	4	+ 4	3	74
		INTER	RNATIONAL	COMPANIES	23/6			DE LA
Total	3,814	5,462		N o	Acc	cident	8	

f Includes a bystander.

12. NON-FLIGHT ACCIDENTS IN CONNECTION WITH CIVIL AVIATION IN CANADA, 1937.

	Employees		Other Persons		Total	
	Killed	Injured	Killed	Injured	Killed	Injured
Commercial services	_	3	••			3
Light aeroplane clubs	-	-	-	-	1, -	-
International aircraft	-	1	•	-	-	1
Provincial and Dominion	-	1	-	-	_	1
Total	top (5		-	_	5

Also 1 non-flight accident resulting in property damage only.

	Estimated Damage to Aircraft	Other Damage and Expenses
	\$	\$
Commercial services	150,03 ¹ 4 11,632 8,200	1,330
Total	169,866	1,330

13. OPERATION AND ACCIDENT AVERAGES IN AVIATION IN CANADA

		Commercial Aircraft		
OPERATION AVERAGES		1937	1936	
Duration of flight Length of flight Paying passengers per flight Length of paying passenger journey Length of flights with freight Aircraft miles per gallon of fuel Aircraft miles per gallon of lubricating oil	Hours Miles No. Miles Miles No. No.	.753 75.8 .8 106.4 154.2 5.10 171.11	.704 65.0 .9 88.0 93.0 4.88 163.11	
Accidents per 1,000 aircraft flights	No. No. No.	.434 5.720 .025 .324	.405 6.197 .092 1.408	
Passengers killed per 1,000,000 passenger miles Passengers injured per 1,000,000 passenger miles Crew killed per 1,000,000 crew miles Crew injured per 1,000,000 crew miles	No. No. No.	.168 .253 .085 .170	.522 .835 .569 .227	





