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CIVIL AVIATION
IN
CANADA
1939



OTTAWA
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DOMINION BUREAU OF STATISTICS
TRANSPORTATION AND PUBLIC UTILITIES BRANCH
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CIVIL AVIATION IN CANADA

1939

The statistics in this report are collected from the operators of aircraft with commercial operators' licences and from light aeroplane clubs with the exception of data on licences and accidents which are supplied by the Civil Aviation Division of the Department of Transport. This division has jurisdiction over the licensing of all airports, aircraft pilots and engineers and consequently the licensed aircraft and pilots also include private aircraft and pilots.

The commercial companies are divided into two classes, those engaged principally in international flying between Canada and the United States and those engaged exclusively, or almost exclusively, in flying between Canadian stations. A small amount of strictly Canadian flying is done by these international companies.

Light aeroplane clubs are subsidized by the Dominion Government and their chief operation is the training of pilots. For flights around the club field and in instruction and practice no statistics are collected of miles flown but for flights from port to port the mileage is collected for aircraft and passengers. The provincial aircraft are engaged almost solely in forest protection, aerial surveying and similar work and the Dominion aircraft are engaged in inspection work.

Another division has been made in this report, including schools and sightseeing. The latter term is applied to operators whose main activity was taking passengers up for short flights and landing at point of take off. Such operators also perform from time to time, as also do the schools, what might be considered as transportation service, that is, transporting passengers and goods from place to place. Because the inclusion of the statistics of these operators with those of the transportation companies causes some confusion the Bureau has attempted to segregate them. Consequently the data for commercial companies as shown in this and in previous reports will not be strictly comparable.

The effect of the Trans-Canada Air Lines, which is in a class by itself in Canadian aviation at the present time, also distorts comparisons with data of previous years. The long journey and relatively heavy passenger traffic increases the average journey and average passenger per aircraft mile, although the business of other companies may be practically unchanged.

The companies operating in the north country carry supplies and freight into and out of the mines and account for the large volume of freight carried by air in Canada. In 1939, air carriers carried 21,253,364 pounds of freight which was about nine times the volume carried in 1931. Air freight traffic grew steadily up to 1937 when it reached a peak of 26,279,156 pounds. The large increases were made in 1934 and 1935 and coincide with the increases in the price of gold which averaged \$21.55 per ounce in 1931; \$23.47 in 1932; \$28.60 in 1933; \$34.50 in 1934, and \$35.19 in 1935, the United States setting the price of \$35.00 in January, 1934. This greatly increased value allowed many low-grade ores to be worked at a profit and aircraft was the best means of transport to many of such mines.

Because of the nature of civil aviation in Canada it is difficult to make comparisons with civil aviation in other countries where the traffic is principally passenger traffic between well-established airports.

The Board of Transport has issued licenses to 19 companies to operate over specified routes in Canada, including 5 licenses to companies to operate between Canadian and United States ports. Only 3 of these companies had any accidents (one each) in 1939 involving death or injury to persons and 2 others had accidents to property only.

For all operators there were only 10 accidents involving death or injury compared with 15 in 1938 but the number of persons, including both passengers and crew, killed was only one less, 16 as against 17 in 1938, and the number injured was 8 compared with 13 in 1938.

The hours flown and gasoline consumed per accident, per fatality, and per injury, for all Canadian civil aviation show considerable improvement in 1939 over 1938 and on the whole a slight improvement over 1937.

Excess baggage is included under freight carried and duplications of both freight and mail have been eliminated. International mail includes both incoming and outgoing mail. Also, passengers carried by international companies include passengers arriving and departing from Canadian airports. The mileages, however, for these companies are computed on the mileages over Canadian territory only, except for the Trans-Canada Air Lines which operates a route between Vancouver and Seattle in addition to the trans-Canada routes.

The mail data reported by the carriers and by the Post Office will not agree for several reasons. In these tables duplications have been eliminated as far as possible, also foreign mail arriving as well as mail departing is included.

The Post Office counts mail carried on each mail route which is the basis of payment and it does not include all incoming foreign mail.

The investments by commercial companies amounted to \$8,843,013 and with the investments of light aeroplane clubs, schools, and provincial governments amounted to \$9,543,834. These do not include the Dominion Government expenditures on airports across Canada used by the Trans-Canada service nor the expenditures on meteorological services and radio stations which serve aviation although not exclusively. The Dominion Government expenditures to March 31, 1939 on airways, airports, and radio stations was \$4,839,430 and the cost of maintenance and operation of airways and airports for the fiscal year 1938-39 was \$867,462. Grants to aeroplane clubs for the year were \$43,082, and contributions to assist municipalities amounted to \$1,261,676. The Department of Transport also pays the deficit of the Trans-Canada Air Lines which amounted to \$818,026 in 1938-39. This deficit, however, is also controlled to some extent by the mail contract which is revised each year according to the operating results of the Trans-Canada Air Lines. Other items chargeable to the Civil Aviation Division of the Department of Transport brought the total expenditure for maintenance and operations up to \$3,275,302.

Expenditures for the fiscal year 1939-40 would be related closer to 1939 calendar year operation but these data are not yet available. They will probably be considerably heavier than in 1938-39. Revenues credited to civil aviation by the Department for 1938-39 amounted to \$19,160, the largest item being \$9,895 for storage, ground, and hangar space rentals.

TABLE I. - STATISTICAL SUMMARY OF CIVIL AVIATION IN CANADA, 1933-1939

Item	1939	1938
	No.	No.
Aircraft hours flown	145,638	133,168
Aircraft miles flown	10,969,271	12,294,088
1/ Passengers carried - Revenue	133,776	104,117
Non-revenue	27,727	35,689
Total	161,503	139,806
Passenger miles - Revenue	21,840,484	10,913,409
Non-revenue	4,267,266	3,973,309
Total	2/ 26,107,750	2/ 14,886,718
Freight carried 3/	21,253,364	21,704,587
Mail carried	1,900,347	1,901,711
Total freight and mail	23,153,711	23,606,298
Ton miles - Freight	1,037,562	1,038,738
Mail	433,349	281,667
Total	1,470,911	1,320,405
Gasoline consumed	3,297,410	2,857,847
Lubricating oil consumed	68,756	63,256
Licensed airports	124	123
Licensed aircraft	488	471
Commercial pilots	166	226
Limited commercial pilots	191	165
Transport pilots	147	130
Private pilots	795	734
Air engineers	722	643
<u>Flying Accidents</u>		
Passengers - Killed	9	7
Injured	6	8
Pilots - Killed	(7	(10
Injured	(2	(5
Other Crew - Killed	(-	(-
Injured	(-	(-
Other Persons - Killed	-	-
Injured	-	-
Total Persons - Killed	16	17
Injured	8	13
No. of accidents resulting in		
Death or injury to persons	10	15
Damage to property only	117	74
Total	127	89

1/ Exclusive of flights of pupils.

2/ Passengers carried from point to point and excluding sightseeing passengers (landing at point of take off)

3/ Excess baggage is classed as freight.

TABLE I. - STATISTICAL SUMMARY OF CIVIL AVIATION IN CANADA, 1933-1939

	1937	1936	1935	1934	1933
	No.	No.	No.	No.	No.
	126,896	101,953	88,451	75,871	53,299
	10,755,524	7,803,942	7,522,102	6,497,637	4,538,315
	110,864	99,451	140,379	72,085	54,133
	30,294	19,209	17,093	8,721	14,993
	141,158	118,660	157,472	80,806	69,126
	12,658,264	8,724,790	-	-	-
	1,853,666	1,381,146	-	-	-
	2/ 14,511,930	2/10,105,936	7,936,950	6,266,475	3,816,862
	26,279,156	25,387,719	26,439,224	14,441,179	4,205,901
	1,450,473	1,161,060	1,126,084	625,040	539,358
	27,729,629	26,548,779	27,565,308	15,066,219	4,745,259
	1,874,723	1,075,029	-	-	-
	112,558	89,588	-	-	-
	1,987,281	1,164,617	-	-	-
	2,222,733	1,681,517	-	-	-
	64,371	51,730	-	-	-
	158	155	123	130	118
	604	475	380	368	345
	320	380	(414	(405	(474
	129	65	(-	(-	(-
	73	42	(-	(-	(-
	635	559	496	429	405
	595	533	472	461	403
	3	8	5	3	12
	4	10	9	2	5
(	4	(8	4	4	8
(	3	(11	6	7	7
(	-	( -	2	3	2
(	-	( -	-	-	1
	1	-	1	2	3
	-	-	-	-	-
	8	16	4/ 12	4/ 12	4/ 25
	7	21	15	9	13
	8	20	18	14	19
	76	66	5/ -	5/ -	5/ -
	84	86	-	-	-

4/ Including death of persons other than occupants of aircraft. 1933 - 3;
1934 - 2; 1935 - 1.

5/ Not available.

TABLE 2. - OPERATIONS OF CIVIL AIRCRAFT IN CANADA, 1939

		Light Aeroplane Clubs (Non-Scheduled Routes)	Dominion and Provincial Governments (Non-Scheduled Routes)	Schools and Sight- seeing	
Light Aeroplane Clubs	Number	22	-	-	
Members - flying	"	1,180	-	-	
- other	"	1,026	-	-	
Flights of aircraft	"	70,177	-	-	
Students - solo	"	21,760	-	-	
- dual	"	28,719	-	-	
Hours flown	"	30,106	8,575	19,240	
Miles flown	"	2/ 20,875	428,172	616,614	
Gasoline consumed	Gallons	170,069	176,124	75,350	
Lubricating oil consumed	"	5,546	3,886	2,163	
Paying passengers carried	Number	1,683	-	21,231	
Non-paying passengers carried	"	5,062	7,559	-	
Total passengers carried	"	6,745	7,559	21,231	
Paying passengers carried one mile	"	2/ 11,697	9,116	-	
Non-paying passengers carried one mile	"	3/ -	1,395,377	-	
Total passengers carried one mile	"	2/ 11,697	1,402,493	-	
Freight carried	Pounds	-	1,873,664	-	
Mail carried	"	-	-	-	
Total freight and mail	"	-	1,873,664	-	
Ton miles - freight	Number	-	70,449	-	
- mail	"	-	-	-	
Total ton miles, freight and mail	"	-	70,449	-	
Pupils given instruction	"	1,519	1	1,966	
Pupils qualifying and receiving a pilot's certificate	"	334	1	206	
Square miles sketched from aircraft	"	-	900	20	
Square miles photographed - vertical .....4/	"	-	25,335	-	
Square miles photographed - oblique	"	-	-	-	
Forest fires detected from the air and reported	"	-	137	4	

1/ Statistics of international flights and Canadian flights of companies engaged principally in international flying.

2/ Station to station only.

3/ Not available.

4/ Includes surveys by National Defence aircraft.

TABLE 2. - OPERATIONS OF CIVIL AIRCRAFT IN CANADA, 1939

	Commercial Companies				Total, All Companies
	(1) International (Scheduled Routes)	Canadian			GRAND TOTAL
		(Scheduled Routes)	(Non-Scheduled Routes)	Total	
	-	-	-	-	
	-	-	-	-	
	-	-	-	-	
	-	-	-	-	
	-	-	-	-	
	-	-	-	-	
	1,984	-	-	85,733	145,638
	283,395	-	-	9,620,215	10,969,271
	149,172	-	-	2,726,695	3,297,410
	1,854	-	-	55,307	68,756
	15,456	69,044	26,362	95,406	133,776
	1,700	3,581	9,825	13,406	27,727
	17,156	72,625	36,187	108,812	161,503
	1,013,386	19,136,850	1,669,635	20,806,285	21,840,484
	60,976	1,741,205	1,071,708	2,812,913	4,267,266
	1,074,362	20,877,855	2,741,343	23,619,198	26,107,750
	19,752	9,728,595	9,631,353	19,359,948	21,253,364
	121,201	1,776,110	3,036	1,779,146	1,900,347
	140,953	11,504,705	9,634,389	21,139,094	23,153,711
	361	644,610	322,142	966,752	1,037,562
	6,787	426,146	436	426,582	433,549
	7,128	1,070,756	322,578	1,393,334	1,470,911
	-	-	-	179	3,865
	-	-	-	17	558
	-	-	-	2,500	3,420
	-	-	-	19,225	44,560
	-	-	-	1,784	1,784
	-	-	-	40	181

TABLE 3. - AIRPORTS IN CANADA, 1939 ^{1/}

Kind	Landing Surfaces			
	Land Only	Water Only	Land and Water	Total
	No.	No.	No.	No.
Public	10	11	-	21
Public-auxiliary	2	-	-	2
Public-temporary	15	5	1	21
Dominion Government	8	3	-	11
Intermediate	1	-	-	1
Provincial	-	15	-	15
Private	6	23	-	29
Municipal Airports	20	3	1	24
TOTAL	62	60	2	124

^{1/} Does not include 62 Dominion Government unlicensed intermediate aerodromes.

TABLE 4. - LICENSED CIVIL AIRCRAFT IN CANADA, DECEMBER 31, 1939

Aircraft	Dominion and Provincial	Private	Light Aeroplanes Clubs	Commercial ^{2/} Canadian	Total
Gross Weight ^{3/}	No.	No.	No.	No.	No.
Up to 2,000 lb.....	31	66	86	100	283
2,001 to 4,000 lb.	22	7	1	66	96
4,001 to 10,000 lb.	9	3	-	78	90
Over 10,000 lb.	-	-	-	19	19
TOTAL	62	76	87	263	488
Type					
Sea boats	18	1	1	4	24
Amphibians	1	1	-	-	2
Land Planes	25	60	55	90	230
Convertible ^{4/}	18	14	31	169	232
TOTAL	62	76	87	263	488

^{2/} Includes Canadian licensed aircraft of international companies.

^{3/} Total weight of aircraft with supplies and full load.

^{4/} May be equipped with wheels, floats or skis as conditions demand.

TABLE 5. - INVESTMENT IN CIVIL AVIATION IN CANADA, 1939

Item	Provincial Government	Schools and Sightseeing	Light Aeroplanes Clubs	Commercial ^{5/} Canadian	Total
	\$	\$	\$	\$	\$
Land and buildings	8,541	22,234	238,314	1,507,572	1,776,461
Aircraft	97,193	174,313	121,308	5,305,269	5,698,083
Tools and equipment	1,747	12,486	8,641	903,734	926,608
Furniture and office appliances	-	2,112	6,353	83,725	92,190
Organization expenditures	-	4,930	2,849	1,042,713	1,050,492
TOTAL	107,281	216,075	377,465	8,843,013	9,543,834

^{5/} Includes Trans-Canada Air Lines.

TABLE 6. - REVENUES AND EXPENSES OF CIVIL AVIATION IN CANADA, 1939

	Expenses					Revenues	Net Operating Revenue
	Maintenance	Operation	Traffic	General	Total		
	\$	\$	\$	\$	\$	\$	\$
Schools and sightseeing	52,494	75,786	2,469	67,955	198,704	172,132	Dr. 26,572
Light aeroplane clubs	-	-	-	-	6/320,568	357,273	36,705
Commercial Canadian	3,322,914	1,716,156	253,912	615,511	5,908,493	5,310,536	Dr. 597,957
TOTAL	3,375,408	1,791,942	256,381	683,466	6,427,765	5,839,941	Dr. 587,824
6/ Not distributed.							

TABLE 7. - AIR TRAFFIC IN CANADA, BY PROVINCES, 1939.

Origin of Traffic	Paying and Non-paying Passengers Carried						Total
	Light Aeroplanes Clubs		Provincial & Dominion Governments	Schools and Sightseeing	Commercial Companies		
	Local and Student Passengers	Station to Station			Inter- national 1/	Canadian	
	No.	No.	No.	No.	No.	No.	No.
Prince Edward Island	-	-	10	-	-	729	739
Nova Scotia	2,236	6	21	-	-	454	2,717
New Brunswick	-	-	213	-	-	1,239	1,452
Quebec	1,816	37	204	121	7,973	18,703	28,854
Ontario	16,980	64	5,592	15,939	-	36,888	75,463
Manitoba	6,495	231	1,125	1,113	1,974	11,448	22,386
Saskatchewan	2,013	13	100	697	-	8,025	10,848
Alberta	3,038	-	160	30	-	9,528	12,756
British Columbia	2,535	-	123	3,162	1,227	13,368	20,415
Yukon and Northwest Territories	-	-	7	169	50	6,599	6,825
Foreign Countries	-	-	4	-	5,932	1,831	7,767
TOTAL	35,113	551	7,559	21,231	17,156	108,812	190,222

1/ Start and finish of trip at same field.

2/ Includes 1,068 passengers in transit through the Yukon Territory.

3/ Includes 28,719 dual flights of pupils.

TABLE 8. - FREIGHT AND EXPRESS LOADED, 1939.

Origin of Traffic	Provincial and Dominion Governments	Commercial Companies		Total
		International 1/	Canadian	
	Lb.	Lb.	Lb.	
Prince Edward Island	-	-	945	945
Nova Scotia	-	-	1,088	1,088
New Brunswick	-	-	12,682	12,682
Quebec	635	1,527	2,758,886	2,761,048
Ontario	1,786,224	-	9,377,973	11,164,197
Manitoba	86,685	110	2,903,032	2,989,827
Saskatchewan	-	-	830,445	830,445
Alberta	-	-	802,096	802,096
British Columbia	-	437	511,247	511,684
Yukon and Northwest Territories	-	-	2,156,519	2,156,519
Foreign Countries	120	17,678	5,035	22,833
TOTAL	1,873,664	19,752	19,359,948	21,253,364

TABLE 9. - MAIL LOADED, 1939

Origin of Traffic	Commercial Companies		Total
	International 1/	Canadian	
	Lb.	Lb.	
Prince Edward Island	-	110,630	110,630
Nova Scotia	-	2,227	2,227
New Brunswick	-	177,149	177,149
Quebec	34,130	219,271	253,401
Ontario	-	407,118	407,118
Manitoba	24,732	230,173	254,905
Saskatchewan	-	102,399	102,399
Alberta	-	219,304	219,304
British Columbia	-	198,566	198,566
Yukon and Northwest Territories	835	81,256	82,091
Foreign Countries	61,504	31,053	92,557
TOTAL	121,201	1,779,146	1,900,347

1/ Statistics of international flights and Canadian flights of companies engaged principally in international flying.

2/ Includes 21,163 pounds in transit through the Yukon Territory.

TABLE 10. - EMPLOYEES AND SALARIES AND WAGES IN CIVIL AVIATION IN CANADA, 1939.

	Provincial Government		Schools and Sightseeing		Light Aeroplane Clubs		Commercial 2/ Canadian		Total	
	No.	\$	No.	\$	No.	\$	No.	\$	No.	\$
General officers	5	16,500	5	17,617	6	9,026	36	164,217	52	207,360
Clerks	5	6,675	6	4,367	10	7,285	142	173,691	163	192,018
Licensed pilots	29	73,447	22	30,646	43	80,907	182	571,333	276	756,333
Licensed engineers	35	66,042	6	6,657	26	28,171	163	281,572	230	382,442
Mechanics and other aircraft employees	11	16,725	14	12,697	25	10,381	227	254,172	277	293,975
Other employees	8	5,109	2	260	8	3,886	300	373,422	318	382,677
TOTAL	93	184,498	55	72,244	118	139,656	1,050	1,818,407	1,316	2,214,805

2/ Includes Trans-Canada Air Lines.

TABLE 11. - CIVIL AVIATION ACCIDENTS, 1939

	Accidents Involving Death or Injury	Damage to Aircraft Only	Total Accidents
Commercial	<u>1/</u> 7	<u>2/</u> 75	82
Private	3	14	17
Training	-	21	21
State	-	7	7
TOTAL	10	117	127

PERSONS KILLED AND INJURED

	Killed			Injured		
	Pilots	Passengers	Total	Pilots	Passengers	Total
Commercial	<u>1/</u> 6	7	<u>1/</u> 13	2	<u>1/</u> 6	<u>1/</u> 8
Private	1	2	3	-	-	-
Training	-	-	-	-	-	-
State	-	-	-	-	-	-
TOTAL	<u>1/</u> 7	9	<u>1/</u> 16	2	<u>1/</u> 6	<u>1/</u> 8

1/ One in Alaska.

2/ One in the United States.

TABLE 12. - OPERATION AND ACCIDENT AVERAGES IN AVIATION IN CANADA

	1939	1938	1937
<u>All Civil Aviation</u>			
Aircraft hours flown per accident <u>1/</u>	147,643	133,168	126,896
Aircraft hours flown per fatality	9,228	7,833	15,862
Aircraft hours flown per injury	18,580	10,244	18,127
<u>Commercial Aviation (Canadian)</u>			
Average passenger journey (miles)	217	97	103
Aircraft miles per gallon of fuel <u>2/</u>	3.5	4.9	5.1
Passengers killed per million passenger miles	0.29	0.69	0.17
Passengers injured per million passenger miles	0.25	0.59	0.25
Pilots killed per million aircraft miles	0.62	0.95	0.11
Pilots injured per million aircraft miles ...	0.21	0.47	0.21

1/ Accidents involving death or injury.

2/ Slightly below actual figures because of exclusion of miles flown in aerial photography and such services.

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