

1938.
NEW ZEALAND.

AIR DEPARTMENT

(REPORT ON THE) FOR THE YEAR 1937-38.

Presented to both Houses of the General Assembly by Command of His Excellency.

**REPORT BY THE HONOURABLE F. JONES, MINISTER IN CHARGE OF THE AIR
DEPARTMENT, FOR THE YEAR ENDED 31st MARCH, 1938.**

MR. SPEAKER,—

I have the honour to present to Parliament the report of the Air Department for the year ended 31st March, 1938. The Department was constituted on the 1st April, 1937, by the Air Department Act, and was charged with the administration of the Air Navigation Act, 1931, and the Air Force Act, 1937. In this, the first report, I wish to refer briefly to the events that led up to the formation of the Department. Shortly after assuming office at the end of 1935 a comprehensive review of the Defence Forces of the Dominion was made, and as a result it was decided to seek expert advice on the air defence aspect from His Majesty's Government in Great Britain, which made available to New Zealand the services of Group Captain the Honourable R. A. Cochrane, A.F.C., for a period of six months. Group Captain Cochrane arrived in New Zealand in November, 1936, and in December, 1936, presented a very valuable report, which was adopted by the Government as the foundation of its policy in relation to air defence. The programme provides for the expansion of the Regular Air Force by the formation of two Medium Bomber Squadrons, the establishment of a Flying Training School, and the establishment of a Stores and Repair Base; the creation of a Territorial Air Force; and the creation of an Air Force Reserve.

It appeared desirable to retain the services of Group Captain Cochrane during the expansion period, and arrangements were made for the extension of his service in New Zealand to two years.

The Air Force Act passed last year provided for the formation of an Air Board to be responsible for the administration of the Royal New Zealand Air Force. The Board consists of the Minister of Defence, three officers of His Majesty's Air Forces, and the Air Secretary. In addition, the Board is charged with the duty of considering all matters relating to Civil Aviation that have a bearing on Defence, and when such matters are being considered the Controller of Civil Aviation becomes a member of the Board.

During the year committees have been appointed to report on three problems of importance—the suitability of Rongotai for the establishment of a commercial airport, of Wellington Harbour as a base for flying-boats, and a site for a Municipal Airport at Auckland.

In the report of the Controller of Civil Aviation a detailed statement is given of the work of the Aeradio Committee, of which the Controller of Civil Aviation is Chairman. The Committee, comprising Technical Officers of various Government Departments concerned with aids to navigation, performs a most important function in ensuring that the development of aeradio is in accordance with modern principles.

On the 2nd April, 1937, His Majesty's Government in Great Britain ratified, on behalf of New Zealand, the Protocol of 1st June, 1935, amending the International Convention relating to the Regulation of Aerial Navigation, 1919, and providing a new annex for a proposed modified international Customs procedure.

The Dominion acceded to the Convention for the Unification of Rules relating to International Carriage by Air (Carriage by Air Convention), and the Convention became effective in respect of New Zealand as from 5th July, 1937.

As a result of an exchange of Notes between His Majesty's Governments in the United Kingdom and Northern Ireland, Australia, New Zealand, and India, and the Danish Government, an agreement was reached and came into force on 21st July, 1937, whereby the respective Governments agreed to accept Pilots' and Navigators' Certificates in lieu of national passports.

A similar agreement with the Norwegian Government came into force on 11th October, 1937.

The progress made during the year under review is referred to in the reports of the Chief of the Air Staff and the Controller of Civil Aviation, and I wish to place on record my personal appreciation of the excellent work done by all associated with Aviation since I have been Minister of Defence.

REPORT BY THE CHIEF OF THE AIR STAFF FOR THE YEAR ENDED 31st MARCH, 1938.

The Hon. the MINISTER OF DEFENCE,

I have the honour to submit the following report on the Royal New Zealand Air Force for the period 1st April, 1937, to 31st March, 1938.

The year under review saw a notable advance in the administration of aviation in the Dominion by the passing of the Air Department Act and the Air Force Act. The former established a Department to administer service and civil aviation, and charged it with the duty of advising the Government on all matters affecting aviation that might from time to time be referred to it. The Air Department was organized during the year and has successfully linked up the activities of the two branches of aviation, thus ensuring that there shall be no overlapping in the many spheres of common interest.

The Air Force Act gave power to raise and maintain an Air Force for the defence of New Zealand, and organized it into three sections—the Regular Air Force, the Air Force Reserve, and the Territorial Air Force. In the following paragraphs I have indicated briefly the purpose for which each section is required, the strength which has been approved, and the progress which has been made during the twelve months under review in building up the Force towards its final strength.

THE REGULAR AIR FORCE.

The strength of the Regular Air Force under the approved programme will be in the region of 100 officers and 900 airmen who are required to man two regular squadrons: a Flying Training School; a depot for the storage and repair of equipment; and also to act as instructors for the Territorial Air Force and the Reserve.

The two Regular Squadrons will be located respectively at Ohakea (near Bulls) and in the Auckland district. The site for the aerodrome at Ohakea has been acquired and construction commenced, whilst work on the Auckland site will commence shortly.

The Flying Training School has been established at Wigram Aerodrome, Christchurch, and is training pilots both for the Royal New Zealand Air Force and for the Royal Air Force. Its capacity is forty-eight pilots a year in two courses of five and a half months each. The school made good progress throughout the year and achieved satisfactory results, in spite of handicaps due to shortage of experienced instructors and lack of certain specialized equipment. These deficiencies were inevitable in the circumstances, but they are now being remedied.

The Stores and Repair Depot is being established at Hobsonville by the enlargement of the existing station. The repair of air equipment calls for a very high standard of engineering skill and experience, and modern workshop facilities. Suitable workshops will be erected and also buildings for the storage of the necessary reserves of equipment. In the meantime the existing facilities of the station are being used to the fullest extent in training the personnel who will be required for the maintenance of aircraft. Although the request for recruits has met with a very satisfactory response both as regards quality and numbers, much further training is necessary, even for those who have already had experience as mechanics, before they are fit to undertake the responsibilities of aircraft maintenance.

THE AIR FORCE RESERVE.

Trained reserves are an essential element in a fighting force, for without them the effort in war will dwindle owing to the inability to replace casualties, and it will also be impossible to bring about that greater effort which will inevitably be called for. Reserves are normally built up over a number of years from the personnel who serve a limited time in the force and on leaving undertake reserve service. In a newly raised force, however, some special measures are necessary, and the form which these should take has been under constant review during the year. A start has been made with the organization of a Reserve of Pilots. By an agreement with the Royal New Zealand Aero Club and its constituent clubs 100 selected candidates who are medically fit and who undertake to serve in the Air Force in an emergency will be trained each year. These pilots, although only accustomed to light aeroplanes, would be ready to proceed to further training on service types of aircraft should the need arise. Their initial instruction in peace will therefore materially shorten the time required in war to turn out trained pilots. In addition to the scheme for a Civil Reserve of Pilots outlined above, a few vacancies are being kept in each course at Wigram for candidates who on completion of their training pass immediately to the reserve. This provides a favourable opportunity for those who wish to take up commercial flying as a career.

The manner in which a reserve of mechanics and other tradesmen required for the maintenance of Air Force equipment can best be obtained has been investigated, but owing to the more immediate problems associated with the Regular and Territorial Squadrons it was impossible to launch the scheme during the year.

THE TERRITORIAL AIR FORCE.

In October, 1937, authority was given to raise a Territorial Squadron at Wellington, and this authority was subsequently extended to include further squadrons at Auckland, Christchurch, and Dunedin.

There are many tasks in the local defence of the ports and coasts of the Dominion which call for the co-operation of aircraft with the other defence services. Such co-operation is likely to entail in the aggregate a great deal of flying, and it would be unsound to tie up the Regular Squadrons in such work. For local patrols and escorts, and for the attack of hostile vessels in coastal waters, the Territorial Squadrons provide a satisfactory and economical force. By the end of the period under review the Wellington Squadron had been recruited to approximately full strength and had received its initial equipment of twelve Baffin aircraft. These aircraft which have been replaced by more modern types in the Royal Air Force have proved themselves admirably suited to the requirements of the Territorial Air Force. The organization of the other three squadrons has been commenced, but progress must largely depend on the availability of the necessary instructional staff. It will be appreciated that during a period of rapid expansion the provision of instructors with the necessary skill and experience is a matter of some difficulty, although the authority which has been given to obtain personnel who have recently completed their service with the Royal Air Force should do much to overcome this.

THE AERO CLUBS.

Throughout the period under review the aero clubs have rendered valuable services in providing the initial training for candidates selected for Wigram, and also in training personnel for the Civil Reserve which has already been referred to. In addition, by maintaining a ground organization on a number of aerodromes throughout the Dominion, and by stimulating public interest in aviation in their districts, the aero clubs have done much which is of potential value in the defence of the Dominion.

CO-OPERATION WITH THE ROYAL AIR FORCE.

In a small service such as the Royal New Zealand Air Force it is essential to provide the means of keeping in touch with general developments in aviation, and also to give personnel the opportunity of studying the latest equipment and the methods of using it. These requirements are being met in the following ways :—

Firstly, by the appointment from January, 1938, of a New Zealand Liaison Officer to the Air Ministry. This ensures not only that New Zealand is supplied with the latest information on all matters of interest, but also that the equipment which is ordered is of the latest pattern and most suited for the purpose for which it is required. The advice which this officer has been able to give has already proved of great value.

Secondly, by a system of interchange between officers of the Royal New Zealand Air Force and the Royal Air Force. Such interchange is of mutual benefit, and two officers left New Zealand during 1937, being replaced by a Signals Officer and an Engineer Officer from the Royal Air Force whose technical knowledge has proved invaluable.

Thirdly, by means of courses of instruction in England. During 1937 four officers were sent on courses in engineering, signals, and armament. On return to New Zealand they will be available to instruct in these subjects.

Lastly, by the appointment of New Zealand officers in the Royal Air Force. For a number of years there has been a steady flow of young men to join the Royal Air Force. Until this year applicants for commissions paid their own passages to England and took the risk of not being selected on arrival, but by an arrangement with the Air Ministry the system has now been changed and candidates are selected in New Zealand and their passages paid. During the period under review 104 candidates were selected, and the reports which have been received from the training establishments in England are most satisfactory.

The Air Ministry has agreed that certain categories of these officers who, during their service in the Royal Air Force desire to transfer to the Royal New Zealand Air Force, shall be permitted to do so. By this means it is hoped to draw on personnel who have obtained experience in the latest types of aircraft and in all branches of Air Force work.

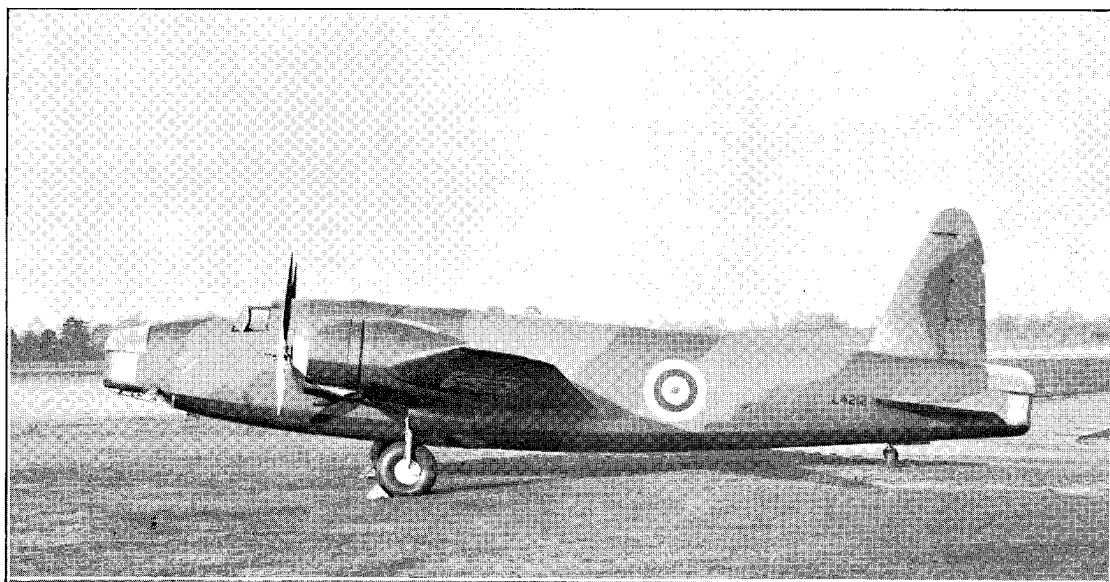
PERSONNEL.

The strengths of the Royal New Zealand Air Force on 1st April, 1937, and 31st March, 1938, were as follows :—

						1st April, 1937.	31st March, 1938.
Regular Air Force—							
Officers	..	..	..	..	..	21	37
Airmen	..	..	..	..	..	156	302
Reserve (pilots)—							
R.N.Z.A.F. Reserve	..	..	..	..	..	10	13
Civil Reserve	..	..	..	..	..	Nil	106
Territorial Air Force—							
Officers	..	..	..	..	..	71	73
Airmen	..	..	..	..	..	Nil	75
						258	606

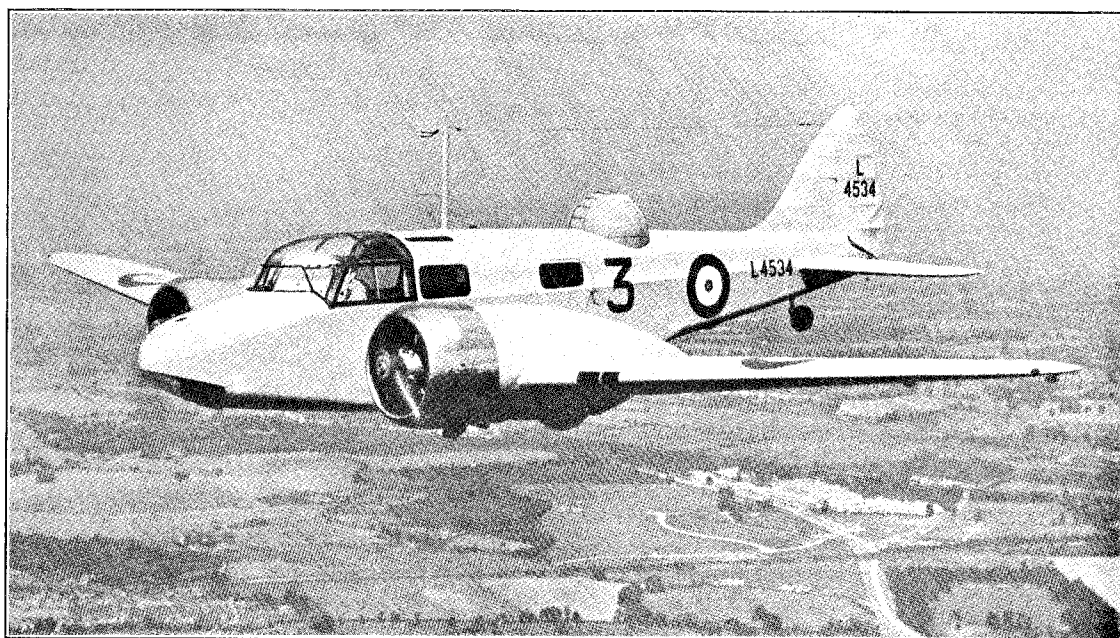
EQUIPMENT.

During the period under review orders were placed for five Airspeed Oxford twin-engine trainer aircraft. Of these, four will be used for advanced training at the Flying Training School, Wigram, and the fifth will be specially fitted for aerial survey work.



VICKERS "WELLINGTON I."

This twin-engined bomber (Pegasus engines), following the "Wellesley," is the latest type to be built on the patented principle of Vickers "geodetic" construction. Thirty aircraft of this type have been ordered for the two Bomber Squadrons which are being provided under the Government's Air Defence Programme.



AIRSPEED "OXFORD."

The "Oxford," powered with two Armstrong Siddeley Cheetah X motors, is the latest aircraft designed for advanced training. Five of these aircraft have been obtained for New Zealand off the first contract, and two have recently been delivered.

Twenty-nine Baffin aircraft were received and their erection taken in hand. These aircraft will be distributed to the Territorial Squadrons as soon as they are ready to receive them.

Considerable progress has been made in reorganizing the system for the care and maintenance of equipment, but the situation cannot be regarded as entirely satisfactory until the new stores buildings which are now in hand have been completed. These will enable all classes of equipment to be stored under suitable conditions.

EDUCATION.

The appointment of the first Education Officer to the Royal New Zealand Air Force was made during the year. Education is of vital importance in the Air Force, for personnel can only profit from the instruction of technical officers if they have received a satisfactory grounding in mathematics, physics, mechanics, &c. With modern equipment the problems which face the pilot and the maintenance personnel call for a high standard of technical knowledge and general education. Again, personnel will one day return to civil life, and it is desirable that whilst in the Service they should keep in touch with current ideas on all subjects of interest to the citizen. Air Force stations are therefore being provided with reference libraries, whilst the Education Officer arranges debates and organizes visits by outside lecturers.

MISCELLANEOUS ACTIVITIES.

During the year photographic survey work was undertaken for a number of Departments and public bodies. Towards the end of the year this work had to be curtailed owing to the heavy demands on personnel arising out of the development of the Air Force. A renewed effort on a larger scale will be made after the arrival of the survey aircraft and an officer to undertake the work. This officer is now undergoing a special course in England and will later proceed to Canada, where extensive use has been made of air-survey methods, and much can be learnt which will be of practical value to New Zealand.

In concluding this report I would like to mention the volume of work which has fallen on the headquarters staff, both Service and civilian, and also on the units. A programme of rapid expansion must always involve the trained personnel in extra work and responsibility, but the way in which the many problems have been tackled reflects great credit on all concerned.

I would also like to refer to the assistance which has been afforded by the Public Works Department. The design and construction of new Air Force stations is a task requiring experience in a number of branches of engineering, and I am satisfied that without the technical knowledge available in the aerodromes and other branches of the Public Works Department the programme could not have been undertaken in its present form.

I have the honour to be,

Sir,

Your obedient servant,

R. A. COCHRANE,

Group Captain.

REPORT OF THE CONTROLLER OF CIVIL AVIATION FOR THE YEAR ENDED 31st MARCH, 1938.

The Hon. the MINISTER OF DEFENCE,—

ADMINISTRATION.

THE Civil Aviation Branch of the Air Department is responsible for the administration of the Air Navigation Act, 1931, and regulations made thereunder.

The construction of aerodromes and emergency-landing grounds is undertaken by the Aerodromes Branch of the Public Works Department on behalf of the Air Department. The provision of radio aids to air navigation is supervised by the Aeradio Committee, composed of representatives of the Air, Public Works, and Post and Telegraph Departments, and the Meteorological Office under the chairmanship of the Controller of Civil Aviation, the Post and Telegraph Department undertaking the installation, operation, and maintenance of the radio services.

Civil aviation estimates for the year 1937-38 provided for a total expenditure of £42,234 the actual expenditure being £35,523.

EXAMINATIONS.

Two B Licence Pilots' Examinations were conducted during the year. There were thirty candidates, of whom eight passed and six obtained partial passes.

Arrangements have been made for the holding of an examination for Air Navigators' (Second Class) Licences. The examination is to be held in July and will be the first of that nature held in the Dominion. The syllabus for the examination has been circulated and is of a similar standard to that obtaining abroad. To date twelve applications to sit have been received.

During the year thirteen examinations for ground engineers were held. Thirty candidates presented themselves for examination, and twenty-three candidates were successful. The number of categories in which these candidates were examined totalled forty-two.

INSTRUCTORS' COURSE.

A special course for aero club flying instructors was held at Wigram Aerodrome from 13th to 30th April, 1937. Nine instructors attended the course, and the syllabus included lectures on air navigation and airmanship, airframes, and aero engines, and practical instruction in instrument flying and instructional patter.

At the conclusion of the course tests were conducted, and the following categories awarded :—

Category.	Significance.
A1	1. (Exceptionally good instructor who has demonstrated by practical work his suitability for the highest category).
A2	3. (Very good instructors).
B1	4. (Capable instructors).
B2	1. (Has the makings of an instructor with practice).

In addition, each of the instructors attending the course qualified for a B certificate of Proficiency in Instrument Flying.

Increased activities of aero clubs and the lack of qualified personnel necessitated the training of six further instructors at a course which was held at Wigram Aerodrome between 4th and 20th May, 1937.

COMMERCIAL FLYING.

Regular Air Transport Companies.

As at 1st April, 1937, the following scheduled services were in operation :—

(1) Palmerston North—Dunedin (via Blenheim and Christchurch)		Union Airways of New Zealand, Ltd.
(2) Napier—Gisborne		East Coast Airways, Ltd.
(3) Hokitika—Haast—Okuru		Air Travel (N.Z.), Ltd.
(4) Inebonnie—Hokitika—Weheka		"
(5) Wellington—Blenheim—Nelson		Cook Strait Airways, Ltd.
(6) Nelson—Greymouth—Hokitika		"

The route mileage operated on these services was 1,108 miles. The use made of air transport soon called for an expansion, and to meet the demand for an extended service in the North Island, Union Airways inaugurated an Auckland—Wellington service on 27th June, 1937, using Lockheed " Electra " 10A aircraft, calls being made at New Plymouth and Palmerston North.

As the result of a rearrangement of schedules made by air-line companies in October, 1937, together with the extension of East Coast Airways' Gisborne-Napier service to Palmerston North, and the running of an additional daily trip on the Auckland-Wellington route, it became possible for through trips to be made between the outer terminal airports in the one day.

From 10th January to 20th February, 1938, Union Airways operated a trial feeder service, using one D.H. 84 aircraft, between Palmerston North and Wanganui, but the traffic offering was not sufficient to warrant the continuance of the service.

On 31st March, 1938, the route mileage covered by scheduled aircraft services totalled 1,776 miles—an increase for the year of 668 miles—and the following aircraft were engaged :—

Three D.H. 86 Express Air Liners.
 Three Lockheed "Electra" 10 A's.
 Four D.H. 89 Dragon Rapides.
 Two D.H. 84 Dragons.
 One D.H. 90 Dragon-fly.
 Two D.H. 83 Fox Moths.

Statistics of the activities of scheduled aircraft services appear in the Appendices to this report.

NON-SCHEDULED COMMERCIAL SERVICES.

Each of the companies referred to above, and aero clubs, are licensed to operate a taxi service to any part of the Dominion in addition to their normal activities. The undermentioned companies also undertake commercial flying :—

Waikato Aviation Co., Ltd., with headquarters at Rotorua, undertakes air taxi work and sight-seeing tours over the thermal district, using one Desoutter aircraft.

New Zealand Aerial Mapping, Ltd., Hastings, undertakes air taxi work, but its primary function is air photography and survey work. During the six months ended 31st March, 1938, this company flew 97 hours on survey work and photographed an area of 1,026 square miles. The company has one Monospar aircraft.

Southland Airways, Ltd., Invercargill, operates one D.H. 80A aircraft and caters for the carriage of freight in addition to air taxi work.

INTERNATIONAL AIRCRAFT SERVICES.

Pan-American Airways.

On 4th April, 1937, the Pan-American Airways flying-boat "Samoa Clipper" departed from Auckland on the return portion of the first survey flight over the route Honolulu - Kingman Reef - Pago Pago - Auckland.

The second survey flight to New Zealand was made in December, 1937, the "Samoa Clipper" arriving in Auckland on 26th December.

The proposed bi-weekly service commenced with the departure of the clipper for Honolulu on 29th December, carrying 25,034 letters (353½ lb.).

The return southern trip unfortunately ended in disaster a short distance from Pago Pago on the 11th January, 1938, and Captain E. Musick and his entire crew lost their lives. No further flights have since been made, and the service will not be resumed until the company obtains delivery of aircraft at present under construction.

Imperial Airways.

Coincident with the second flight of Pan-American Airways boat, Imperial Airways, Ltd., carried out a survey flight along the England - Australia - New Zealand Empire route. The flight by the Empire class flying-boat "Centaurus," commanded by a New-Zealander, Captain J. W. Burgess, commenced on 3rd December and terminated with the crossing of the Tasman on 27th December. The flight between Sydney and Auckland occupied nine hours fifteen minutes.

Whilst in New Zealand the "Centaurus" visited the ports of Wellington, Lyttelton, and Dunedin, and left from Auckland for Sydney on 10th January, the time taken for the journey being ten hours.

PRIVATE AND CLUB FLYING.

Aero Clubs.

On 31st March, 1938, there were eleven "approved" aero clubs and one unapproved club (Waikato Aero Club) offering training facilities for pilots. The Waikato Club was formed on 5th December, 1937, by the secession of the Waikato Branch of the Auckland Aero Club from the parent body. The new club took over three aircraft from the Auckland Club.

In addition to the clubs referred to above, there are approximately twenty-five clubs without their own training facilities, but which are affiliated to one or other of the eleven "approved" clubs for training purposes.

The total number of aircraft operated by aero clubs as at 31st March, 1938, was fifty-eight, distributed as follows :—

Club.	Aircraft.	
	Number.	Type.
Auckland	4	D.H. 60.
	1	Avro Avian.
	2	D.H. 82.
	1	Beechcraft.
	1	Miles Magister.
Western Federated	3	D.H. 60.
	2	D.H. 82.
	1	Miles Hawk.
Middle Districts	1	D.H. 60.
	2	D.H. 82.
	1	Porterfield.
Wellington	2	D.H. 60.
	1	D.H. 82.
	1	Miles Hawk.
	1	Miles Magister.
	1	Waco.
Wairarapa	3	D.H. 60.
	1	Whitney Straight.
Hawke's Bay and East Coast	2	D.H. 60.
	1	D.H. 87.
	1	D.H. 82.
	1	Porterfield.
Marlborough	2	D.H. 60.
	1	Miles Hawk.
	1	Fleet Trainer.
	1	Waco.
Canterbury	3	D.H. 60.
	1	Miles Hawk.
	1	Monospar S.T. 25.
	1	Whitney Straight.
Otago	3	D.H. 60.
	1	Miles Magister.
	1	Waco.
Southland	2	D.H. 60.
	1	D.H. 80A.
West Coast United	2	D.H. 82.
Waikato	2	D.H. 60.
	1	D.H. 80A.

In August, 1937, the Government agreed to make advances free of interest to the "approved" aero clubs for the purchase of new training aircraft, repayable over a period of three years. Under this scheme four Miles Magisters, five Tiger Moths, one Whitney Straight, and one Hornet Moth were purchased.

The four Magisters referred to above were ordered in 1936, and it was originally intended to issue these on loan to the four clubs most needing additional aircraft. However, with the initiation of the Government training scheme these machines were supplied on repayment to those clubs appointed to undertake the training of Air Force candidates, and in their place four Tiger Moths were ordered for issue on loan.

The practice of granting subsidies to clubs in respect of male pilots trained or renewing their pilots' licences was discontinued from 31st March, 1937, when the Department entered into an agreement with clubs for the training of Air Force candidates and pilots of the Civil Reserve.

The total number of Civil Reserve and Air Force candidates trained during the year 1937-38 was 123, comprising 24 Air Force trainees and 99 civil reservists.

In addition to their training activities, each of the clubs possessing aircraft holds an Aircraft Taxi License issued by the Minister of Transport which permits them to undertake charter work to any part of the Dominion.

As a safeguard to established scheduled services clubs are required to charge 10 per cent. above the service fares when operating along a scheduled aircraft service route.

A statistical summary of aero club activities is set out in Appendices.

Private Flying.

At 31st March, 1938, there were twenty-three private persons owning a total of twenty-five aircraft. Two owners have leased their aircraft to clubs for training and taxi purposes.

AERONAUTICAL INSPECTION.

During the period 364 inspections of aircraft or of aircraft engines and components were carried out by the inspection staff of the Department. The distribution of aircraft throughout the Dominion is such that considerable travelling is involved in this inspection work. This amounted to 32,700 miles for the year by two Inspectors and necessitated a total absence of 203 days from headquarters.

ACCIDENTS TO CIVIL AIRCRAFT.

There were twenty-five flying accidents in the Dominion requiring notification under the Air Navigation Regulations. Of this total, three had fatal consequences and three resulted in serious injuries to personnel.

The following summary gives the numbers of accidents in the various classes of flying :—

Commercial services	2
Student pilots—	
While landing on aerodrome	7
While taking off from aerodrome	4
Forced landing while on cross country	4
Loss of control	2
Qualified pilots—	
Forced landing due to engine failure	2
While landing on aerodrome	1
Error of judgment resulting in loss of control	2
Low flying	1
	25

Causes of Accidents.

Errors of judgment or faulty airmanship were the sole cause of accident in 60 per cent. of the cases.

Engine failure contributed to two major crashes which resulted in serious damage to the aircraft but no injury to the occupants.

Two minor landing accidents occurred to commercial aircraft operating on regular air routes. No injury was caused to passengers or personnel.

One accident to a club aircraft, while being flown on a cross-country charter trip, in which the passenger was killed and the pilot severely injured, was due to the pilot flying into conditions of bad visibility and striking a hill when turning back.

One crash causing the death of the passenger was due to faulty airmanship on the part of a club pilot, resulting in loss of control of the aircraft.

A student pilot was killed while engaged in acrobatic flying close to the ground ; he was carrying out these manœuvres without permission and in advance of his training.

An accident resulting in the complete destruction of the aircraft was caused by a pilot losing control when stunting too near the ground. The pilot escaped with light injuries.

Bad weather accounted for one accident in which the aircraft was severely damaged, but the student pilot in control was not injured.

The remaining accident was due to the student pilot concerned becoming lost and landing away from an aerodrome.

There was no case of fire in the air nor of structural failure while in flight.

While the number of accidents involving loss of life was the same as last year, the number of lives lost was one less. In each case where loss of life occurred a technical Board of inquiry with a Magistrate as Chairman was set up to investigate and report upon the accident. All other accidents involving injury to the occupants or serious damage to the aircraft were investigated and reported upon by the Inspector of Air Accidents.

There has been an increase in the number of landing accidents over the last period, but this can be accounted for by the greater number of pilots under instruction and the increased number of hours flown solo by student pilots.

REGISTRATION OF AIRCRAFT.

The number of certificates of registration issued during the year was forty-four, this figure being approximately three times greater than the number issued during the previous year. Of the forty-four aircraft registered during the year, thirty-three were aircraft registered for the first time and eleven were aircraft which changed ownership and were registered anew.

Changes of ownership, dismantling, crashes, &c., caused the cancellation of sixteen certificates during the year, leaving a total of one hundred and six aircraft registered on 31st March, 1938, as compared with eighty-nine on 31st March, 1937 ; the increase in the number of aircraft was therefore seventeen, representing a 19-per-cent. increase on the figure for 1937.

The following is an analysis, according to types, of the aircraft entered in the Dominion register as at 31st March, 1938 :—

D.H. 60	..	..	32	*Lockheed Electra	..	..	3
D.H. 80A	..	..	4	Miles Hawk	..	..	4
D.H. 82	..	..	9	Miles Magister	..	..	3
D.H. 83	..	..	2	Monospar	..	..	2
D.H. 84	..	..	2	*Porterfield	..	..	2
D.H. 86	..	..	3	Spartan	..	..	6
D.H. 87	..	..	1	*Taylor Cub	..	..	2
D.H. 89	..	..	4	Vega Gull	..	..	1
D.H. 90	..	..	1	*Waco	..	..	3
Avro Avian	..	..	4	Whitney Straight	..	..	4
504K	..	..	2	Pou-de-Ciel	..	..	3
*Beechcraft C 17L	..	..	1	Miscellaneous	..	..	5
B.A. Swallow	..	..	1				
Desoutter	..	..	1				
Fleet	..	..	1				
							106

* Aircraft of American manufacture (11).

Of the above total of 106 aircraft, 91 are single-engined machines, 12 are twin-engined, and three are fitted with four engines.

The number of aircraft possessing current certificates of airworthiness advanced from 63 last year to 74 at the end of March this year, an increase of 17 per cent. The remaining 32 aircraft included in the total of 106 aircraft recorded as registered in this country but not certified as airworthy at the close of the period comprised aircraft undergoing overhaul prior to the renewal of their certificates of airworthiness and aircraft temporarily out of commission for various reasons, in addition to three machines of the " Flying Flea " type, which are permitted to fly without a certificate of airworthiness under certain conditions as experimental aircraft.

During the period under review 23 United Kingdom and one Canadian certificate of airworthiness were validated for flying in New Zealand. Seven Dominion certificates were issued, 46 were renewed, and 9 were cancelled as the result of the aircraft in respect of which they were current having been removed from the register.

AERADIO SERVICES.

During the year the programme of development of aeradio services approved by the Government has been vigorously pursued.

At the beginning of the year the radio services available to commercial aviation were limited to improvised stations provided at short notice to facilitate the operation of the Palmerston North-Dunedin and the Cook Strait air services.

The first objective was to replace these stations with modern radio installations located at the aerodromes and capable of providing either a telegraphic or telephonic service of a reasonable power to meet the requirements of air liners in flight over all existing air lines. Accordingly arrangements were made to install 250-watt radio stations at the aerodromes at Milson (Palmerston North), Wellington, and Taieri (Dunedin). Lower-powered stations of 100 watt output were installed at Nelson and Hokitika, these installations being of a provisional nature to carry over until such time as the 250-watt equipment is available. In the case of the Blenheim station, similar temporary arrangements were made, and a low-power telephone transmitter was installed at the Omaka Aerodrome in a temporary building to facilitate the efficient conduct of the service, while arrangements were being made for the engineering of the final higher-powered installation. With the extension of air services to Auckland via New Plymouth, action was taken to install suitable stations at the Mangere Aerodrome, Auckland, and at the Bell Block Aerodrome, New Plymouth. In the former case a 250-watt transmitter has been installed, while in the latter a 100-watt installation was considered to meet all requirements. Both of these stations are located in special buildings erected for the purpose at the aerodromes, and, in so far as the transmitters are concerned, they constitute units of the final establishment. The year thus closed with stations along the main routes provided with comparatively satisfactory transmitting equipment, the exception being Christchurch, where, owing to the fact that the Wigram Aerodrome is being used only temporarily for civil aviation, it was decided to continue the use of the existing provisional service from the Post and Telegraph Department's station in the city until the permanent station at Harewood could be brought into operation. These arrangements are in an advanced stage, and during this financial year it is expected that the Harewood Station will be opened, thus completing the chain of modern radio telephone transmitting stations available at aerodromes used by the commercial air lines.

Certain of the intermediate aerodromes have received consideration, and low-power transmitters of limited range have been installed at such points as Hawera and Timaru. Action has already been taken to provide such a transmitter at Greymouth, where proximity to the Hokitika terminal makes a higher-powered station unwarranted.

The receiving facilities at the various stations are at present conducted from the transmitting buildings, but it is intended to provide separate receiving buildings at each aerodrome so located as to meet the requirements for the final service, which it is hoped to introduce during the latter portion of this financial year.

The service provided by the aeradio stations is not limited to the ground-to-plane transmission. A large amount of traffic has of necessity to be handled between the various aerodromes in order to assure rapid interchange of communications relating to meteorological conditions, passenger bookings, and other matters essential to the expeditious conduct of air transport undertakings. These communications have in the meantime been conducted by the same stations as are used to maintain the contact with aircraft in flight. Even at the present stage of development, however, it has been found that considerable congestion is caused, due to the use of the same wave-bands for the point-to-point and ground-to-air services. Arrangements have therefore been made to expedite the installation of four of the short-wave stations included in the programme. These transmitters will not be installed until the next financial year, but in the meantime short-wave receivers have been supplied to aeradio stations in the more congested areas, and the Wellington station has adopted short-wave transmission as a regular means of communicating with the aerodromes in its sector.

One of the most unique air services conducted anywhere in the world is that operated by Air Travel, Ltd., in the South Westland District. This company has provided a regular service over a sparsely populated and remote area with most beneficial results to the district, and many emergencies could be recorded in which the settlers have been rendered assistance which could not have been provided by other means. With the establishment of the Hokitika Aeradio Station, the company, appreciating the advantages of radio communication, fitted radio equipment in one of their aircraft. It became apparent, however, that for the maximum use to be obtained from the service it would be necessary for a remote station to be installed at the southern terminal of the service, and arrangements were therefore made with the Public Works Department to install an aeradio station at Jackson's Bay, where the major undertakings have required improved communications. This station, which was opened during the year, is of a pioneer nature. Initially it has only been possible to install low-powered equipment primarily designed to maintain communication with Hokitika in the north and Awarua in the south, but the ultimate scheme provides for the installation of a permanent station similar to that at present in operation at Hokitika and capable of working planes in flight in its area, as well as maintaining communication with the outside world.

Consideration has also been given to the wider problem of meteorological communications associated with the proposed trans-Tasman and trans-Pacific air services. For this purpose a reporting station at the Kermadec Islands was necessary, and an expedition under Mr. J. E. Anderson, of the Public Works Department, was therefore equipped and sent to Raoul Island, in the Kermadec Group, in July. This expedition was provided with the necessary radio equipment to establish a temporary station on the island, but its main task was to explore the prospects of establishing a permanent station and to report on the engineering work necessary to enable landing arrangements to be provided and reasonable conditions to be assured to the personnel who would be called on to operate the final establishment. A report covering all matters relating to the future control of the Kermadec Group has been received, and it reveals the possibility of establishing and maintaining a permanent station on the Island. The necessary engineering work is to proceed during the present financial year. In the meantime excellent work is being performed by the existing temporary station, which is proving of considerable value to the Meteorological Office. It was employed as a navigational beacon by the ill-fated "Samoan Clipper" during her flights between Samoa and Auckland.

The High Commissioner for the Western Pacific has also been assisted by supplies of certain radio equipment urgently required by the British authorities for the establishment of meteorological reporting stations at certain points in the Pacific, which, although not under the direct control of the Dominion Government, were regarded as essential reporting stations if satisfactory meteorological services were to be developed for the trans-Pacific air route.

I have the honour to be,

Sir,

Your obedient servant,

T. M. WILKES,

Group Captain,
Controller of Civil Aviation.

APPENDICES.

APPENDIX A.

STATEMENT SHOWING THE EXPENDITURE OF THE AIR DEPARTMENT FOR THE YEAR ENDED
31ST MARCH, 1938.

VOTE, "AIR"—

	£	£
<i>Subdivision I—</i>		
1. Administration	850	
<i>Subdivision II—</i>		
2. Pay and allowances	71,080	
<i>Subdivision III (Quartermen Stores (except Technical) and Transportation)—</i>		
3. Clothing, badges, &c.	8,624	
4. Expenses of training courses	1,418	
5. Freight, &c.	1,760	
6. Fuel, lighting, &c.	2,730	
7. Furniture and barrack equipment	8,173	
8. Maintenance of personnel	5,018	
9. Registration fees—Motor-vehicles	29	
10. Transfer and removal expenses	1,247	
11. Travelling allowances and expenses	1,712	
12. Uniform grants and allowances	1,238	
		31,949
<i>Subdivision IV (Technical Stores)—</i>		
13. Aircraft, plant, &c.: Purchase of	39,781	
14. Aircraft plant, &c.: Maintenance of	338	
15. Ammunition, bombs, &c.	3,977	
16. Services of manufacturers' experts	2	
17. Spirits, oils, &c.	12,143	
		56,241
<i>Subdivision V (Works, Buildings, and Lands)—</i>		
18. Maintenance of land and buildings	1,098	
19. Transfer to Public Works Fund	70,000	
		71,098
<i>Subdivision VI (Expenses and Allowances—Air Force Personnel Abroad)—</i>		
20. Allowances	2,066	
21. Instructional fees	880	
22. Rail, steamer, and other charges	1,634	
		4,580
<i>Subdivision VII (Territorial and Reserve Forces)—</i>		
23. Pay and allowances	153	
24. Aircraft	15,065	
25. Buildings	4,621	
26. Civil Reserve of Pilots: Grants to aero clubs for training, &c.	14,985	
27. Equipment, rifles, &c.	797	
28. Instructional equipment	70	
29. Miscellaneous	1,050	
30. Pay, fares, &c.: Refresher courses	129	
31. Rent and alterations to buildings	183	
32. Uniform grants and allowances		
		37,053
<i>Subdivision VIII (Miscellaneous Services)—</i>		
33. Advertising, books, &c.	1,062	
34. Bands: Expenses and grants	80	
35. Compensation and medical expenses and examination fees	1,498	
36. Contribution (service, retired pay): R.A.F. officers	174	
37. Flying practice and duty flight	119	
38. Grants to New Zealand Aero Club	65	
39. Headquarters and communications		
40. Office furniture, fittings, &c.	2,097	
41. Overtime and meal allowance	616	
42. Payments to aero clubs for training Air Force pilots	4,170	
43. Payment to Air Ministry, pay, &c., 2nd October, 1936, to 31st March, 1937	678	
44. Postages, telegrams, &c.	255	
45. Printing and stationery	1,311	
46. Refund: Repairs damaged car	8	
47. Rent of offices	789	
48. Telephone services	607	
49. Contingencies	12	
		13,541
Carried forward		286,392

APPENDIX A—*continued*.

	£	£
Brought forward.. .. .	..	286,392
<i>Subdivision IX (Civil Aviation)—</i>		
50. Salaries	1,863	
51. Aeradio services	952	
52. Aircraft-landing grounds	4,674	
53. Equipment and tools	499	
54. Expenses: International Commission	234	
55. Freight on aircraft for loan to aero clubs	165	
56. Investigation of accidents	250	
57. Loans to aero clubs for purchase of aircraft	13,100	
58. Meteorological services	8,128	
59. Office requisites, telephones, &c.	554	
60. Purchase of aircraft for loan to aero clubs	4,480	
61. Travelling allowances, expenses, &c.	591	
	35,490	
	321,882	
Credits-in-aid	8,233	
	<u>£313,649</u>	

APPENDIX B.

VOTE, "PUBLIC WORKS FUND—PUBLIC BUILDINGS, ITEM 12, AIR DEFENCE"—

	£	s.	d.	£	s.	d.
<i>Hobsonville—</i>						
Additional seaplane hangar cost store	353	0	5			
Bitumen aprons and drainage land plane hangar	95	2	1			
Deviation of Hobsonville Main Highway around flying-field	2,130	0	0			
Field tiles and scoria, drainage flying-field	1,207	0	8			
Hangar and oil-store, drainage-work at rear of seaplane-hangar	77	16	8			
Electrical reticulation	54	16	6			
Land purchase	5,977	5	2			
Power-house	398	19	4			
Purchase of steel	7,106	6	11			
Removal, Mattson's house	798	5	5			
Single men's quarters	8,714	3	6			
Standby generating-plant	132	10	0			
Water-supply	1,163	16	7			
				28,209	3	3
<i>Ohakea—</i>						
Hangars	Cr. 44	2	4			
Purchase of land	16,386	0	0			
Purchase of steel	18,486	1	2			
Railway siding	235	6	0			
Water-supply	862	7	0			
				35,925	11	10
Carried forward				64,134	15	1

APPENDIX B—*continued.*

	£	s.	d.	£	s.	d.
Brought forward				64,134	15	1
<i>Wigram—</i>						
Administration building	333	11	8			
Air-firing and bombing range at Lake Ellesmere	128	3	3			
Alterations to officers' mess and quarters to provide temporary accommodation for officers attending courses	906	17	1			
Alteration to power and telephone lines	88	16	3			
Barracks for single men	3,747	0	5			
Bitumen apron	287	5	8			
Conversion of O.C.'s old residence to temporary station head-quarters	58	8	5			
Dustproofing workshop and hangar	13	7	10			
Erection of three wireless masts	12	4	1			
Erection of temporary new cubicles and conveniences for officers	1,182	13	7			
Erection of workshops and fitments	3,640	16	1			
Fuelling system	382	0	6			
Garage for O.C.	124	18	1			
Guard-house	9	10	9			
Hangars Nos. 1 and 2	84	6	6			
Housing Contract No. 1	4,666	12	8			
Housing Contract No. 2	1,389	18	1			
Housing Contract No. 3	83	7	9			
Incinerator	41	17	7			
Main store	0	4	9			
Painting and installation of sewerage and water systems at F. Blumsky's house	140	14	4			
Purchase of land	40	0	0			
Purchase of land from F. Blumsky	775	12	2			
Purchase of steel	4,332	6	5			
Oil-store : Erection	11	18	6			
Regrading and drainage of area between hangars and workshops	48	13	3			
Residence for O.C.	6	6	6			
Reticulation of electrical services	1,028	8	0			
Sergeants' mess and ration store	37	0	9			
Sewerage scheme	2,240	0	3			
Single men's quarters : Extra dormitories	6,113	6	9			
Standard 25-yards range	83	2	4			
Standby electrical plant	1,524	14	11			
Subdivision of annexes in hangars	18	7	11			
Temporary electrical service to Sergeant-Major's quarters, O.C.'s residence, and sewerage pump	107	2	11			
Temporary water-supply and sanitary services to O.C.'s residence and new barracks	170	10	3			
Water-supply to residences	161	18	4			
				34,022	4	7
				98,156	19	8
Contribution from Vote, " Air," towards capital expenditure				70,000	0	0
				£28,156	19	8

APPENDIX C.

LIGHT AERO CLUBS.—COMMERCIAL OPERATIONS, YEAR ENDED 31ST MARCH, 1938.

Aero Club.	Aircraft.	Number of Trips.	Passengers.	Hours flown.	Miles flown.
Auckland	7	1,666	3,819	561	60,014
Waikato	3	82	134	13	1,210
Western Federated	6	..	..	..	..
Middle Districts	2	3	3	4	290
Wellington	5	663	1,395	290	26,885
Wairarapa and Ruahine	3	49	49	16	1,105
Hawke's Bay and East Coast	3	258	240	95	7,401
Marlborough	4	210	392	101	11,230
Canterbury	7	505	1,102	290	25,891
Otago	3	738	968	135	9,867
Southland	2	109	172	58	4,605
West Coast United	3	29	29	6	455
Totals	48	4,312	8,303	1,569	148,953

LIGHT AERO CLUBS.—TRAINING YEAR ENDED 31ST MARCH, 1938.

Aero Club.	Membership at 31st March, 1938.		Aircraft in use.	Under Instruction at 31st March, 1938		Hours flown.		Current Licences at 31st March, 1938.	
	Associate.	Flying.		Dual.	Solo.	Dual.	Solo.	Private.	Commercial.
Auckland	421	123	8	38	15	1,030	1,995	64	6
Waikato	222	44	3	7	3	62	239	32	2
Western Federated	447	131	6	53	14	436	1,156	63	1
Middle Districts	183	68	3	16	10	489	789	40	2
Wairarapa and Ruahine	271	50	4	1	8	297	906	40	1
Hawke's Bay and East Coast	175	64	4	19	4	563	903	39	2
Wellington	238	70	7	14	4	736	1,494	50	2
Marlborough	152	49	4	8	8	278	579	33	..
Canterbury	100	148	8	42	24	787	1,815	81	1
Otago	150	64	5	10	10	488	1,047	41	3
Southland	146	65	3	19	11	356	590	34	1
West Coast United	170	39	3	16	7	226	465	15	1
	2,675	915	58	243	118	5,748	11,978	532	22
	3,590			361		17,726		554	

APPENDIX C—continued.
BALANCE-SHEETS OF AERO CLUBS.
North Island Aero Clubs.

	Auckland.		Hawke's Bay and East Coast.		Middle Districts.		Waikarapa and Ruahine.		Wellington.		Western Federated.	
	As at 1st May, 1937.	As at 31st March, 1938.	As at 1st November, 1937.	As at 31st March, 1938.	As at 31st March, 1937.	As at 31st March, 1938.	As at 30th September, 1937.	As at 31st March, 1938.	As at 31st March, 1937.	As at 31st March, 1938.	As at 31st May, 1937.	As at 31st March, 1938.
<i>Assets.</i>												
Cash in hand and in bank	£ 144	£ 66	£ 947	£ 1,408	£ 488	£ 1,324	£ 79	£ 1,080	£ 2,576	£ 3,565	£ 71	£ 1,459
Investments	..	..	100	100	..	..	500	500	770	1,204	..	4,256
Sundry debtors	460	1,074	652	539	147	755	415	418	953	638	208	774
Payment in advance	32	..	5	..	..	..	..	..	497	504	..	82
Machines and equipment	10,280	10,545	1,468	1,303	770	1,865	359	1,912	2,843	4,250	..	2,628
Land and buildings	15,735	17,998	2,970	3,070	..	..	4,888	4,836	..	..	..	6,515
Stock on hand	412	447	100	104	..	66	394	361	674	306	83	533
Income and expenditure Account	..	..	..	..	..	..	..	..	..	..	6,131	..
Totals	27,063	30,130	6,242	6,524	1,405	4,010	6,635	9,107	8,313	10,467	9,749	16,247
<i>Liabilities.</i>												
Bank overdraft	£ 3,919	£ 6,708	£ ..	£ ..	£ ..	£ ..	£ 299	£ ..	£ ..	£ ..	£ ..	£ ..
Sundry creditors	1,134	1,166	183	383	280	262	200	158	444	545	317	757
Loans and mortgages	..	..	..	..	500	500	2,311	2,310	..	..	..	..
New Zealand Government loan	..	3,600	1,080	1,000	..	1,500	..	1,600	..	3,250	..	..
Reserves : Depreciation, repairs, funds, &c. ..	4,110	2,277	..	..	..	990	34	1,089	..	464	..	256
Miscellaneous	209	136	125	160	..	..	36	17	47	61	..	39
Accumulated funds	17,691	16,243	4,854	4,981	625	758	3,755	3,933	7,822	6,147	4,160	15,195
Totals	27,063	30,130	6,242	6,524	1,405	4,010	6,635	9,107	8,313	10,467	9,749	16,247*
<i>Flying-hours.</i>												
.. ..	..	3,586	..	1,561	..	1,282	..	1,219	..	2,520	..	1,589

* Combined Balance-sheet of Western Federated, New Plymouth, and Wanganui Aero Clubs. Liability to Government not shown in Balance-sheet (ZK-AGA).

APPENDIX C—continued.
BALANCE-SHEETS OF AERO CLUBS—continued.
South Island Aero Clubs.

	Canterbury.		Marlborough.		Otago.		Southland.		West Coast United.	
	As at 31st March, 1937.	As at 31st March, 1938.	As at 30th June, 1937.	As at 31st March, 1938.	As at 31st March, 1937.	As at 31st March, 1938.	As at 30th June, 1937.	As at 31st March, 1938.	As at 31st March, 1937.	As at 31st March, 1938.
<i>Assets.</i>										
Cash in hand and in bank	£ 1,203	£ 754	£ 965	£ 24	£ 396	£ 900	£ 198	£ 54	£ 219	£ 394
Investments	2,240	2,240	2,130	2,107	1,000	2,016	1,599	2,735	225	216
Sundry debtors	736	697	300	768	665	214	698	624	..	53
Payments in advance	..	..	28	17	..	..	..	..	..	1,570
Machines and equipment	4,051	3,771	2,580	5,224	700	2,323	1,404	712	462	..
Land and buildings	1,156	1,383	2,656	2,616	..	..	35	110	..	99
Stock on hand	80	532	265	235	88	108	83	85	28	237
Accumulated loss	..	..	..	..	..	..	..	..	..	..
Totals	9,466	9,377	8,924	10,991	2,849	5,561	4,017	4,320	934	2,569
<i>Liabilities.</i>										
Bank overdraft	£ 1,126	£ 1,124	£ 309	£ 1,507	£ 381	£ 242	£ 188	£ 63	£ 104	£ 291
Sundry creditors	..	..	..	39	..	..	..	..	22	22
Loans and mortgages	..	..	..	..	..	1,519	..	..	..	1,432
New Zealand Government loan	2,000	800	549	1,156	1,000	2,016	..	224	801	771
Reserves: Depreciation, repairs, funds, &c.	..	..	21	..	..	..	..	..	5	53
Miscellaneous	6,340	6,253	8,045	8,289	1,468	1,784	3,829	4,033	2	..
Accumulated funds	..	..	..	..	..	..	..	..	..	..
Totals	9,466	9,377	8,924	10,991	2,849	5,561	4,017	4,320	934	2,569

Flying-hours.

..	2,892	..	958	..	1,670	..	1,004	..	697
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APPENDIX C—continued.

INCOME AND EXPENDITURE ACCOUNTS OF AERO CLUBS FOR YEAR ENDED 31ST MARCH, 1938.*

	Auckland (*eleven months only).	Hawke's Bay and East Coast.	Middle Districts.	Waikato and Ruahine.	Wellington.	Western Federated (*ten months only).	Canterbury (*eleven months only).	Marlborough.	Otago.	Southland.	West Coast United.
<i>Expenditure.</i>											
Wages and salaries	£ 2,432	£ 1,246	£ 989	£ 1,071	£ 2,147	£ 1,718	£ 1,941	£ 1,211	£ 1,316	£ 1,128	£ 906
Petrol and oil	1,125	708	464	446	928	720	1,161	385	603	505	282
Rent	..	..	..	..	379	60	..	..	..	69	..
Maintenance and repairs	854	869	200	616	1,941	606	1,353	724	810	489	282
Hire of planes	..	..	..	..	658	..	356	..	..	..	27
Insurance	..	191	247	76	406	128	153	..	669	61	39
Interest	264	..	..	..	..	..	..	24	..	..	..
Depreciation : Depreciation and repairs reserves	3,759	238	998	1,238	2,486	1,218	2,074	1,380	856	826	425
Office expenses	488	60	203	294	273	286	398	133	313	26	37
Sundries	95	448	117	204	360	268	410	209	111	310	97
Total expenditure	9,466	3,820	3,218	3,945	9,558	5,094	7,846	4,179	4,678	3,414	2,095
Profit	371	128	48	..	..	735	..	..	314	..	..
	9,837	3,948	3,266	3,945	9,558	5,739	7,846	4,179	4,992	3,414	2,095
<i>Income.</i>											
Instructional and flying fees	£ 3,971	£ 2,472	£ 2,757	£ 2,851	£ 5,268	£ 4,319	£ 7,310	£ 2,538	£ 3,689	£ 1,690	£ 1,550
Passenger flights and hire	3,988	965	48	37	1,509	..	..	..	433	918	..
Government subsidy	..	217	400	400	400	400	..	400	231	356	281
Subscriptions and entrance fees	647	261	56	488	624	373	379	298	245	150	19
Interest	..	31	5	15	69	188	68	98	53	36	..
Rent	229	1	..	..	..	114	..	..	338	..	..
Sundries	602	..	..	63	15	345	2	152	..	..	6
Total revenue	9,857	3,948	3,266	3,854	7,885	5,739	7,759	3,486	4,992	3,150	1,856
Loss	..	..	..	91	1,673	..	87	693	..	264	239
	9,837	3,948	3,266	3,945	9,558	5,739	7,846	4,179	4,992	3,414	2,095

APPENDIX D.

STATISTICS OF SCHEDULED AIRCRAFT SERVICES, YEAR ENDED 31ST MARCH, 1938.

Route.	Hours flown.	Miles flown.	Passengers.	Freight (lb.).	Mail (lb.).	Passenger-miles.	Freight-ton-miles.	Mail-ton-miles.	Trips scheduled.	Trips completed.	Regularity.
<i>Union Airways of New Zealand, Ltd.</i>											
Palmerston North—Dunedin	3,072	361,515	8,939	12,191	69,202	2,077,295	1,392	10,103	734	733	99·86
Auckland—Wellington ..	2,086	281,075	6,825	6,937	38,225	1,523,295	765	4,114	819	812	99·14
Palmerston North—Wanganui	38	3,198	77	13	272	3,157	..	5	84	78	92·86
<i>Cook Strait Airways, Ltd.</i>											
Wellington—Blenheim—Nelson	2,786	348,439	20,270	36,362	35,669	1,171,894	989	888	5,148	4,961	96·36
Nelson—Greymouth—Hokitika	484	60,561	684	4,241	2,576	79,485	249	155	624	581	93·11
<i>East Coast Airways, Ltd.</i>											
Gisborne—Napier—Palmerston North	1,828	171,210	5,941	1,730	9,321	610,182	107	525	1,745	1,733	99·31
<i>Air Travel (N.Z.), Ltd.</i>											
Hokitika—Haast—Okura Inchbonnie—Hokitika—Fox and Franz Josef Glaciers	1,010	102,262	978	20,331	60,524	53,055	800	2,415	492	480	97·56
	11,304	1,328,260	43,714	81,805	215,789	5,518,363	4,302	18,205	9,646	9,378	..

STATISTICS OF NON-SCHEDULED (TAXI) SERVICES, YEAR ENDED 31ST MARCH, 1938.

Company.	Aircraft available.		Number of Trips.	Paying Passengers.	Hours flown.	Miles flown.
	Number.	Type.				
Union Airways of New Zealand, Ltd.	3	D.H. 86 ..	45	417	33	4,345
	3	Lockheed Electra ..				
Cook Strait Airways, Ltd. ..	4	D.H. 89 ..	25	118	30	3,766
East Coast Airways, Ltd. ..	2	D.H. 84 ..	179	1,199	71	6,824
Air Travel (N.Z.), Ltd. ..	2	D.H. 83 ..	1,237	2,579	928	92,743
	1	D.H. 90 ..				
Waikato Aviation Co., Ltd. ..	1	Desoutter ..	819	1,401	300	26,770
New Zealand Aerial Mapping, Ltd. ..	1	Monospar S.T. 25 ..	109	135	84	8,345
Southland Airways, Ltd. ..	1	D.H. 80 ..	962	1,681	379	39,830
L. E. Clark ..	1	Percival "Vega Gull" ..	126	244	45	4,922
	19	..	3,502	7,774	1,870	187,545

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