

SESSION II.
1912.
NEW ZEALAND.

ACTUARY'S REPORT
ON THE VALUATION OF
THE GOVERNMENT INSURANCE DEPARTMENT

As at 31st December, 1911.

Presented to both Houses of the General Assembly pursuant to Section 40 of the Government Life Insurance Act, 1908.

Wellington, 6th April, 1912.

IN accordance with instructions received I have made a valuation, as at the 31st December last, of the actuarial liabilities of the Department, with the object of ascertaining the net surplus available for division amongst the policyholders, and in compliance with section 40 of the Government Life Insurance Act, 1908, I have now the honour to report the results of the investigation.

PROGRESS OF THE DEPARTMENT.

The progress of the Department during the last three years, when compared with the two previous trienniums, in respect of new business and total business in force, is as follows:—

Triennium.	New Business of Triennium.			In Force at End of Triennium.			
	Number of Policies.	Sums assured.	Annual Premiums.	Number of Policies.	Sums assured.	Reversionary Bonuses.	Annual Premiums.
1903-1905 ..	9,526	£ 2,112,927	£ 70,428	45,137	£ 10,468,316	£ 954,751	£ 319,221
1906-1908 ..	9,739	2,261,767	72,803	47,033	10,955,749	1,068,950	331,830
1909-1911 ..	10,476	2,487,472	77,477	49,376	11,514,657	1,168,620	348,285

From the above it will be seen that, not only has there been a satisfactory increase all round—in number of policies, sums assured, bonuses, and annual premiums—but the regularity of the increase has been conspicuous.

The Consolidated Revenue Account, given below, shows the total income and expenditure for the past three years, and also the growth of the funds of the Department during the triennium. For purposes of comparison the Consolidated Revenue Account for the preceding triennium is also given.

CONSOLIDATED REVENUE ACCOUNT.

Triennium ending 31st December, 1911.		Previous Triennium.	Triennium ending 31st December, 1911.		Previous Triennium.
	£	£		£	£
Funds at beginning of triennium	4,264,685	3,822,577	Death claims	416,364	392,458
Renewal premiums ..	936,581	905,698	Matured claims	332,899	273,988
New premiums	75,810	70,786	Annuities paid	47,944	43,440
Consideration for annuities	47,755	38,705	Surrenders	*197,055	176,659
Interest	623,409	552,999	Bonuses surrendered for cash	24,712	16,668
Fees	10	36	Commission	58,151	52,307
Tontine Savings Fund No. 2 transferred at maturity	18,562	..	Taxes	39,152	33,677
			Expenses	120,565	116,919
			Investment reserves ..	30,000	20,000
			Funds at end of triennium ..	4,699,970	4,264,685
Total	£5,966,812	£5,390,801	Total	£5,966,812	£5,390,801

* Including tontine policies at maturity.

It will be seen that the regularity of the increase of income and outgo has also been well marked.

Income.—The chief item of importance, besides a substantial increase in the premium income and purchase-money for life annuities, is the revenue from interest, which exceeded by £70,410 the interest-earnings of the previous three years. The average rate of interest realized each year for the past six years has been as follows :—

	£	s.	d.		£	s.	d.
1906	4	9	10	1909	4	12	11
1907	4	10	3	1910	4	12	3
1908	4	12	2	1911	4	13	0

These figures were obtained by finding the rate yielded each year on the mean of the funds at the beginning and end of the year, and they show that the rate of interest earned on the Department's investments has been more than maintained.

Outgo.—The claims have increased in a normal manner, taking into account the growth of the business and the increase in ages of policyholders and duration of policies. Indeed, the rate of mortality experienced has been extremely favourable, and the surplus has received a large accretion from this source.

The surrenders were abnormally increased in consequence of a large number of policyholders relinquishing their policies immediately after the expiry of the tontine period, on the 31st December, 1910. The amount of bonuses surrendered was also increased through the same cause. This cannot recur, as the Department does not now transact tontine business, and has none left on its books.

The amount paid in commission during the triennium has somewhat increased, in consequence of the larger amount of both new and renewal business; while, as regards the expenditure on commission and management combined, the business is now conducted at a lower cost than formerly, as the following table will show :—

RATIO OF COMMISSION AND EXPENSES (excluding Taxation).

Year.	To Total Income.	To Premium Income.
1890	14·4 per cent.	20·2 per cent.
1893	13·4 "	19·0 "
1896	12·0 "	17·5 "
1899	11·9 "	17·5 "
1902	11·3 "	16·8 "
1905	11·0 "	16·7 "
1908	10·6 "	16·6 "
1911	10·4 "	16·7 "

Here again the regularity and consistency of the improvement shown is very noticeable, and it will be seen that the expense-ratios have constantly diminished since the introduction of triennial valuations, and that they are now materially lower than they were twenty-one years ago.

The taxation, not included in the above, has now increased to nearly 4 per cent. of the premium income of the Department, which is a considerably higher rate than that borne by other Australasian offices.

THE VALUATION.

The business to be valued consisted of 49,376 policies, assuring £12,683,276 inclusive of bonus additions, and £21,405 immediate and deferred annuities per annum, the ordinary annual premiums thereon amounting to £345,825. The Department also receives £2,329 per annum, representing additions to the tabular premiums imposed when assurances are effected on lives which are estimated to fall below the requisite standard for any reason. These extra premiums are held to cover the current year's extra risk, and are not brought into the valuation as an asset.

Basis of Valuation.—The net premium method of valuation has been strictly adhered to, whereby the *whole* margin of loading has been reserved as a provision for future expenses. The H^m Table of Mortality, with 3½ per cent. interest, has been used, but an additional reserve of £101,500 has been added to the liability, making it equivalent to that produced by an H^m 3¼-per-cent. valuation. The annuities were valued by the British Offices Life Annuity Tables (1893), using 3 per cent. interest. The valuation of the Department's liabilities under its various contracts has therefore been made on a more stringent basis than ever before, and the adoption of this course is bound to result in advantage to the policyholders.

	£
The value of the total liability under the several contracts is ...	7,563,873
Deduct the value of the future net premiums ...	3,181,474
	4,382,399
Add special reserve of ...	101,500
	4,483,899
Making an immediate NET LIABILITY of ...	4,483,899
The ACCUMULATED FUNDS (after making further provision of £30,000 towards the Investment Reserve Fund) are ...	4,699,970
	4,699,970
Difference, being excess of assets over liability, or GROSS SURPLUS at 31st December, 1911 ...	£216,071

The sum of £56,766, brought forward from the last investigation, together with a further sum of £44,734 from the profits of the last three years—making a total of £101,500—has been absorbed in strengthening the valuation basis in the manner already described. In adopting this course full effect has been given to the advice of Messrs. Ralph P. Hardy and George King, tendered to the Department in 1903, that “steps should be taken gradually to bring down the valuation-rate from 3½ per cent. to 3¼ per cent. in the not very distant future.” I consider it highly satisfactory that it has been possible to do this, while at the same time increasing the bonus as explained further on.

THE SURPLUS.

Of the surplus of £216,071 (which does not include the interim bonus paid during the triennium, amounting to £14,648), I recommend that £8,966 be carried forward, and that £207,105 be divided amongst all the participating policyholders, in the form of a uniform reversionary bonus per cent. on the sum assured and existing bonuses for each premium paid since the previous valuation, distinguishing between general and temperance policyholders in regard to profit from favourable mortality in the manner provided for by the Act.

The result is that policies in the General and Temperance Sections respectively will on this occasion both receive compound bonuses of 21s. per cent. upon the sum assured and existing bonuses for each year's premium paid since the last valuation, the total reversionary bonus so allotted amounting to £333,994. This compound bonus of 21s. per cent. is equivalent to a simple bonus commencing at 21s. per cent. per annum to new policies, and increasing with the duration of the policies to 31s. per cent. per annum in the case of the older policies. These bonuses are good for the premiums charged—which are small as compared with those of other offices—and they may be expected to increase still further in the future.

A complete valuation statement, prepared in accordance with the Government Life Insurance Act, 1908, is appended.

In conclusion, I would again call attention to the consistently steady results of the Department's business, arising under sound and strict methods of valuation. The new business returns have steadily increased, the expense-ratio has been reduced, the mortality experience has been favourable, and the yield from interest has increased, both in amount and percentage. In addition, increased bonuses are now allotted, while at the same time substantial reserves have been made, thereby still further strengthening the financial position, and I consider the policyholders have reason to look forward to the future with great confidence.

Respectfully submitted,

The Government Insurance Commissioner.

MORRIS FOX,
Actuary.

SUMMARY and VALUATION of the POLICIES of the NEW ZEALAND GOVERNMENT LIFE INSURANCE DEPARTMENT, as at 31st December, 1911.

DESCRIPTION OF TRANSACTIONS.	PARTICULARS OF POLICIES FOR VALUATION.				VALUES (Assurances: Hm Table 3½% interest * (adjusted to Hm 3½% basis) Annuities: British Offices Annuity Tables, 1893. 3½% interest.			
	Number of Policies.	Sums assured and Bonuses.	Office Yearly Premiums.	Net Premiums.	Sums assured and Bonuses.	Office Yearly Premiums.	Net Premiums.	Net Liability.
ASSURANCES.								
I.—With Participation in Profits.								
Whole-life Assurances—Uniform Premiums ..	10,253	3,534,332	72,848	62,225	2,179,526	769,435	645,435	1,534,091
" Limited, Single, and Commuted Premiums ..	655	347,959	905	750	237,193	3,594	2,953	234,240
Endowment Assurances—Uniform Premiums ..	27,615	6,194,552	198,483	164,136	3,828,645	2,163,141	1,763,865	2,064,780
" Limited, Single, and Commuted Premiums ..	215	64,419	1,392	1,104	33,725	14,816	11,631	22,094
Double Endowment Assurances—Uniform Premiums ..	8,463	2,173,969	60,979	51,913	991,405	803,565	677,075	314,330
" Limited, Single, and Commuted Premiums ..	16	1,932	..	..	1,266	..	..	1,266
Deferred Endowment Assurances—with return of Premiums ..	12	2,500	45	36	60	..	..	60
Joint Life—Whole-life Assurances ..	12	5,544	251	202	3,355	2,744	2,204	1,151
" Endowment Assurances ..	1	1,000	59	48	614	671	549	65
Survivorship Assurances ..	2	550	8	6	87	95	63	24
Annuity Assurances ..	87	20,061 (and deferred annuity, 4,397)	1,013	931	22,174	12,389	11,416	10,758
Reserve for extra Premiums ..	..	..	..	..	879	..	..	879
Additional Reserve of Loading ..	..	..	..	..	..	..	3,115,191 Deduct 6,511	4,183,738 Add 6,511
Total Assurances with Profits ..	47,331	12,346,818	335,983	281,351	7,298,929	3,770,450	3,108,680	4,190,249
II.—Without Participation in Profits.								
Whole-life Assurances—Uniform Premiums ..	528	166,340	3,795	3,605	64,876	64,688	61,389	3,487
Endowment Assurances ..	109	25,812	811	736	12,196	12,567	11,405	791
Deferred Whole-life Assurances—with return of Premiums ..	3	1,000	7	6	14	..	..	14
Deferred Endowment Assurances ..	44	8,400	109	96	75	..	..	75
Industrial Assurances ..	3	60	1	..	25	..	..	25
Temporary Assurances ..	6	3,400	46	..	30	..	..	30
Total Assurances without Profits ..	693	205,012	4,769	4,443	77,216	77,255	72,794	4,422
Total Assurances ..	48,024	12,551,830	340,752	285,794	7,376,145	3,847,705	3,181,474	4,194,671
ENDOWMENTS.								
Simple Endowments—with return of premiums ..	719	99,296	3,675	..	30,729	..	..	30,729
Endowments—Premiums cease on death of purchaser ..	256	32,150	1,297	..	6,615	..	..	6,615
Total Endowments ..	975	131,446	4,972	..	37,344	..	..	37,344
ANNUITIES.								
Immediate ..	..	(per annum)	..	..	..	..	..	150,063
Deferred ..	373	16,992	..	..	150,063	..	..	321
" ..	4	106	101	..	321	..	..	150,384
Total Annuities ..	377	17,098	101	..	150,384	..	..	150,384
Total of the Results ..	49,376	12,683,276 and £21,465 extra premium per annum.	345,825 and £2,330 extra premium (not valued).	285,794	7,563,873	3,847,705	3,181,474	4,483,899

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