

UNITED



NATIONS

UNITED NATIONS JOINT STAFF PENSION FUND

**REPORT OF THE UNITED NATIONS
JOINT STAFF PENSION BOARD**

on the

FOURTH ACTUARIAL VALUATION OF THE FUND

as of 30 September 1956

and

SECOND REVIEW OF THE BASIC

TABLES OF THE FUND

GENERAL ASSEMBLY

OFFICIAL RECORDS : TWELFTH SESSION

SUPPLEMENT No. 8A (A/3642)

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REPORT OF THE UNITED NATIONS JOINT STAFF PENSION BOARD ON THE FOURTH ACTUARIAL VALUATION OF THE FUND AS OF 30 SEPTEMBER 1956 AND SECOND REVIEW OF THE BASIC TABLES OF THE UNITED NATIONS JOINT STAFF PENSION FUND

1. Under the terms of article XXXI of the Regulations of the Joint Staff Pension Fund, the Joint Staff Pension Board is required to have actuarial valuations of the Fund made at stated intervals. The Board is further required, under that article, to make proposals to the General Assembly and to member organizations for any action to be taken as a result of the valuation.

2. Four actuarial valuations have been made by the consulting actuary of the Board, Mr. George B. Buck — as of 31 December 1949; as of 31 December 1951; as of 30 September 1954; and as of 30 September 1956. The report on the fourth valuation is transmitted herewith to the General Assembly for consideration at its twelfth session.

3. The consulting actuary's conclusions and recommendations will be found in paragraphs 18 to 28 of this report. The Board notes with satisfaction that gains from favourable experience have more than offset the losses from adverse experience and that the experience of the Fund as a whole has been favourable during the period which has elapsed since the last valuation.

4. The satisfactory progress of the Fund is indicated by the consulting actuary's estimate of a margin of 0.74 per cent of pensionable remuneration between the 21 per cent contributions required by the Regulations and the contributions necessary to meet the benefit payments and administrative expenses.

5. In compliance with article XXIX of the Regulations, as actuarial investigation into the mortality, service and compensation experience of the participants and

beneficiaries of the Pension Fund has been made by the consulting actuary. The Board noted with appreciation that the tables presently in use have proved to be slightly conservative, and that the effect of the modifications proposed by the consulting actuary in paragraphs 29 and 30 of his review are of minor magnitude.

6. Mr. Thullen, actuarial adviser of the International Labour Office, at the request of the Board also reviewed the actuarial experience of the Fund and made a separate report. In using a different approach to the experience analyses, Mr. Thullen had come to similar conclusions.

7. The Board adopted the revised basic tables as submitted by its consulting actuary to take effect on 1 January 1958.

8. An actuarial valuation was also prepared as of 30 September 1956 on the basis of the tables recommended by the consulting actuary. The consulting actuary's conclusions will be found in paragraph 36 of his report. This actuarial valuation shows a margin of 0.83 per cent of pensionable remuneration between the 21 per cent contributions required by the Regulations and the contributions necessary to meet the benefit payments and administrative expenses.

9. The Board concurs in the recommendation of the consulting actuary that contributions should be continued at the rate of 14 per cent of the pensionable remuneration of participants payable by the member organizations and 7 per cent of such remuneration payable by the participants.

FOURTH ACTUARIAL VALUATION OF THE UNITED NATIONS JOINT STAFF PENSION FUND

Report of the consulting actuary

1. The United Nations Joint Staff Pension Fund became effective in its permanent form as of 23 January 1949. The purpose of the Fund is to provide pension and death benefits to full-time members of the staff of the member organizations, and the Registrar and full-time officers of the Registry of the International Court of Justice. The following organizations were participating in the Joint Fund as of 30 September 1956:

- The United Nations;
- The World Health Organization;
- The Food and Agriculture Organization;
- The International Labour Organisation;
- The United Nations Educational, Scientific and Cultural Organization;
- The International Civil Aviation Organization;
- The World Meteorological Organization.

2. This report, prepared as of 30 September 1956, gives the results of the fourth actuarial valuation of the

Fund. Article XXXI states that "The actuarial report shall state the assumptions on which the calculations are based; it shall describe the method of valuation used; it shall state the results of the investigations as well as the recommendations, if any, for any appropriate action." Before complying with these requirements, this report gives a brief summary of the main benefit and contribution provisions of the Fund, and a statement of the participation on the valuation date.

SUMMARY OF MAIN BENEFIT AND CONTRIBUTION PROVISIONS

3. The following is a summary of the main benefit and contribution provisions of the Fund as interpreted in preparing the actuarial valuation.

4. "Pensionable remuneration" means the basic remuneration stated to be pensionable under a participant's terms of employment. "Final average remuneration" means the average annual pensionable remunera-

tion of a participant during his last five years of contributory service.

Benefits

RETIREMENT BENEFIT

Condition for benefit

Any participant who has attained age sixty receives, upon retirement, a retirement benefit during the remainder of his life.

Amount of benefit

The annual retirement benefit is equal to one-sixtieth of the participant's final average remuneration multiplied by the number of years of his contributory service, not exceeding thirty years.

Optional benefit

A participant may, with the consent of the Joint Staff Pension Board, before the first payment of his retirement benefit becomes due, elect to receive a lump sum not greater than one-third of the actuarial equivalent of the retirement benefit due him, and his retirement benefit is then reduced accordingly.

DISABILITY BENEFIT

Condition for benefit

Any participant who becomes unable to perform his duties satisfactorily due to serious physical or mental impairment before attaining age sixty is entitled, during the continuance of such impairment, to a disability benefit which is payable after no larger payments are payable under the staff regulations applying to him; provided that unless disability is the direct result of an accident or unless the participant has been determined to be physically qualified for admission to earlier coverage, a participant may not become eligible for a disability benefit until the completion of five years of contributory service.

Amount of benefit

The annual disability benefit is equal to 90 per cent of the retirement benefit that has accrued to the date service ceases, but is not less than the smaller of:

(a) 30 per cent of his final average remuneration; or

(b) 90 per cent of the retirement benefit to which the participant would have been entitled if he had remained in service until age sixty and his final average remuneration had remained unchanged.

WIDOW'S BENEFIT

Condition for benefit

(1) Upon the death in service of a married participant, the widow, or disabled widower, is entitled to a widow's benefit; provided that unless death was the direct result of an accident or unless the participant had been determined to be physically qualified for admission to earlier coverage, such benefit is not payable unless the participant had completed five years of contributory service.

(2) Upon the death of a married male recipient of a retirement or disability benefit his widow is entitled to a widow's benefit provided she was his wife at the time of his cessation of service and, in the case of a recipient

of a disability benefit whose disability was not the result of an accident or service in an unhealthy area, she was his wife six months prior to such cessation of service.

Amount of benefit

The annual widow's benefit is equal to 50 per cent of the retirement or disability benefit to which the participant was or would have been entitled at the time of his death, except that the widow's benefit payable to a widow more than 20 years junior to the deceased is the actuarial equivalent of the widow's benefit payable to a widow twenty years junior to the deceased. A widow's benefit ceases upon her remarriage, at which time she receives a lump sum payment equal to twice her annual widow's benefit.

LUMP-SUM BENEFIT UPON PARTICIPANT'S DEATH IN SERVICE

Condition for benefit

Upon the death in service of a participant who leaves no widow, or disabled widower, entitled to a widow's benefit, a lump sum is payable to his designated beneficiary or beneficiaries.

Amount of benefit

The lump sum death benefit is equal to the participant's own contributions with compound interest at 2½ per cent per annum, plus such amount as may have been transferred on his account from a provident fund to the Pension Fund, without interest.

CHILD'S BENEFIT

Condition for benefit

A child's benefit is payable on account of each child under the age of eighteen of a deceased participant or of a recipient or deceased recipient of a retirement, disability or widow's benefit.

Amount of benefit

The child's benefit is an annual benefit equal to \$300 if there is a surviving parent other than a widow not entitled to a widow's benefit and is \$600 if there is no such surviving parent.

WITHDRAWAL BENEFIT

A participant whose services are terminated for reasons other than death, and who is not eligible for a disability or retirement benefit, receives a withdrawal benefit.

If such withdrawing participant has completed less than five years of contributory service he receives his own contributions to the Pension Fund with compound interest at 2½ per cent per annum, together with such amount as may have been transferred on his account to the Pension Fund from a provident fund, without interest.

If such withdrawing participant has completed five or more years of contributory service he is entitled, four months after his service ceases, to a lump sum payment which is the actuarial equivalent of a deferred annuity payable at age sixty equal to the retirement benefit accrued to the date his service ceases, provided that said lump sum shall not be less than the amount

Table 2

NUMBER AND ANNUAL BENEFITS OF RETIRED PARTICIPANTS AND BENEFICIARIES ON THE ROLL AS OF 30 SEPTEMBER 1956

Group	Number	Annual Benefits \$
Retirement benefits:		
Men	124	79,516
Women	58	27,481
	Total	106,997
Disability benefits:		
Men	12	15,458
Women	14	10,128
	Total	25,586
Withdrawal benefits:		
Men	6	6,220*
Women	7	3,481
	Total	9,701
Widows in receipt of benefits	57	37,018
Children in receipt of benefits	89	27,428
	GRAND TOTAL	206,730

*Includes one deferred benefit of \$761 commencing in 1957, and one deferred benefit of \$1,364 commencing in 1962.

provided in the preceding paragraph. During the period of four months, he is eligible for a death benefit based on his contributory service to the date he ceased to be employed; but a benefit will be payable only if his widow was his wife at the time his service ceased. If he dies during this period of four months and a death benefit becomes payable, no further benefit is payable. The participant may elect to receive the lump sum payment at a date earlier than that prescribed, but he ceases to be eligible for death benefits on the date such payment is made.

Any participant whose years of contributory service when added to his age at withdrawal equal sixty or more years may elect to convert the lump sum payment to which he is entitled or one-half thereof into a deferred annuity payable at age sixty; or to convert the entire lump sum payment into an immediate annuity of equivalent actuarial value.

Contributions

BY PARTICIPANTS

Each participant contributes 7 per cent of his pensionable remuneration. Subject to such conditions as the Board may prescribe, additional contributions may be made to provide additional retirement benefits.

BY MEMBER ORGANIZATIONS

Each member organization makes contributions equal to 14 per cent of the total pensionable remuneration of its participants, plus such additional contributions as are necessary to cover the Fund's obligations with respect to the crediting of service prior to participation.

In addition, member organizations make good any deficiency which an actuarial valuation may show.

PARTICIPATION

5. Every full-time member of the staff of each member organization, including the Registrar and every full-time officer of the Registry of the International Court of Justice, becomes a participant if he enters employment under a contract for one year or more or has completed one year of employment; provided he was under age sixty at the time of his appointment and his participation was not excluded by his contract of employment.

6. The following table, prepared as of 30 September 1956, shows the number and annual remuneration of participants included in the valuation.

Table 1

NUMBER AND ANNUAL PENSIONABLE REMUNERATION OF ACTIVE PARTICIPANTS AS OF 30 SEPTEMBER 1956

Group	Number	Annual Remuneration \$
Men	5,399	28,716,352
Women	3,929	13,719,431
TOTAL	9,328	42,435,783

7. The following table shows the number and annual benefits of retired participants and beneficiaries who were on the roll as of 30 September 1956.

VALUATION ASSUMPTIONS

8. The same valuation assumptions were used in this valuation as in the previous valuations of the Fund. The basic service and mortality tables used are those given in appendix II of the report on the valuation as of 31 December 1949 and hence have not been reproduced for this report.

9. In accordance with article XXIX, an interest rate of 2½ per cent per annum was used in the valuation.

VALUATION METHODS

10. The Secretary of the Joint Staff Pension Board submitted detailed data for each active participant and for each retired participant and beneficiary in receipt of benefits on the valuation date. These data were tabulated for use in the valuation. Summaries of the tabulations are given in tables 7 to 10 of this report. A statement of the present assets of the Fund was also submitted by the Secretary for use in the valuation.

11. On the basis of the service and mortality tables, reserve values were constructed showing the present value of prospective benefits per unit of present remuneration or per dollar of past contributions. The appropriate reserve values were applied to the corresponding age and service groups shown by the tabulations and the present value of the prospective benefits and contributions was obtained.

12. In general, the methods of valuation are standard methods ordinarily employed in determining contributions to a pension fund on a level percentage reserve basis. These methods are set forth in various actuarial

publications and are approved and used by various state insurance departments in the United States of America and used by the Federal Government in the valuation of the Civil Service Retirement and Disability Fund.

RESULTS OF VALUATION

13. The following valuation balance sheet shows the present and prospective assets and liabilities of the Fund as of 30 September 1956.

Table 3

VALUATION BALANCE SHEET SHOWING THE ASSETS AND LIABILITIES OF THE UNITED NATIONS JOINT STAFF PENSION FUND
PREPARED AS OF 30 SEPTEMBER 1956

<i>Assets</i>	\$	\$	<i>Liabilities</i>	\$	\$
Present assets of the Fund creditable to:			Present value of benefits payable from the pension reserve account to present recipients of retirement, disability, withdrawal and widows' benefits including prospective benefits to widows of such recipients....		2,944,689
Pension reserve account		3,077,255	Present value of prospective benefits to be met by regular contributions to the participants' account and the accumulation account:		
Participants' account:			To present participants:		
Regular contributions	17,385,863		Benefits payable upon retirement.	104,018,369	
Contributions under article XVIII	238,843	17,624,706	Benefits payable upon disability...	16,701,879	
Accumulation account		39,562,795	Benefits payable upon withdrawal after five years' service	4,551,935	
TOTAL PRESENT ASSETS		60,264,756	Benefits payable upon withdrawal before five years' service or upon death in service when no widow's benefit payable	3,470,834	
Present value of future contributions by participants and by member organizations to balance liabilities...		109,348,664	TOTAL	130,743,017	
			To widows and children of present participants:		
			Benefits payable upon death in service	15,568,286	
			Benefits payable upon retirement and upon death after retirement.....	16,385,322	
			Benefits payable upon disability and upon death after disability.....	2,706,169	
			TOTAL	34,659,777	
			Total liabilities on account of active participants		165,402,789
			Present value of prospective benefits payable on account of voluntary contributions under article XVIII accumulated to date in the participants' account		238,843
			Present value of benefits payable from the accumulation account to children of presently retired or deceased participants		185,515
			Reserve for contingencies		841,579
TOTAL ASSETS		169,613,420	TOTAL LIABILITIES		169,613,420

COMMENTS ON VALUATION

14. The valuation balance sheet shows that the present assets are distributed among three accounts as described below.

Pension reserve account

The pension reserve account is the account to which the capital value of all annual benefits except children's benefits is transferred after participation ceases and from which all such annual benefits are paid. The balance sheet shows an amount of \$3,077,255 as credited to this account.

Participants' account

The participants' account is the account in which each participant is credited with his own contributions to the Pension Fund together with interest thereon and with any amount transferred as Provident Fund contributions. When a lump sum benefit becomes payable, the portion of such benefit represented by the amount credited to his account is charged against the participants' account. When a participant becomes entitled to an annual benefit or dies leaving a widow entitled to a widow's benefit, the amount credited to his account is transferred from the participants' account to the pen-

sion reserve account. The balance sheet shows an amount of \$17,624,706 as credited to this account, consisting of \$17,385,863 in regular contributions and \$238,843 in voluntary additional contributions.

Accumulation account

The accumulation account is the account to which all contributions made by the member organizations and the investment income are credited. When a lump sum benefit becomes payable, the amount of such benefit not chargeable against the participants' account is charged against the accumulation account. All children's benefits are charged against this account. When a participant becomes entitled to an annual benefit or dies leaving a widow entitled to a widow's benefit, an amount equal to the capital value of the benefit, less the amount transferred from the participants' account, is transferred from the accumulation account to the pension reserve account. The balance sheet shows an amount of \$39,562,795 as creditable to this account.

15. On the liabilities side of the balance sheet the first item is \$2,944,689 representing the present value of prospective benefits to all recipients of annual benefits except children's benefits. The present value of prospective widows' benefits payable on account of former participants now in receipt of annual benefits is also included in this item. The assets of the account are shown as \$3,077,255. Thus, the account shows a surplus of \$132,566. Part of this surplus is due to the discontinuance of certain benefits and is transferable to the accumulation account; the remainder reflects the fact that a greater amount of benefits has been cancelled by death and remarriage than expected.

16. Next is shown the present value of prospective benefits to or on account of present participants to be met by the regular contributions of participants and member organizations. The total amount of such liability is \$165,402,794 consisting of \$130,743,017, the present value of prospective benefits to present participants, and \$34,659,777, the present value of prospective benefits to the widows and children of present participants who may be expected at death to leave dependents qualifying for benefits.

17. The balance sheet then shows \$238,843 as the present value of the additional benefits that will be payable on account of voluntary contributions by participants under article XVIII of the Regulations. This item is followed by an item of \$185,515, the present value of the children's benefits now being paid from the accumulation account, and by an item of \$841,579 which is the reserve held for contingencies.

18. The total present value of all future benefits payable on account of active or retired participants and their dependents including the contingency reserve is \$169,613,420. If from this amount the present assets of \$60,264,756 are subtracted, the remainder is \$109,348,664 which represents the present value of the future contributions by participants and member organizations. A calculation indicates that contributions at the rate of 20.01 per cent of participants' future pensionable remuneration have a present value of this amount. Based on the valuation of the Fund as of 30 September 1954, the required contribution rate was computed to be 19.78

per cent of pensionable remuneration; however, this rate was expected to increase by 0.68 per cent on account of the 1955 amendments to the Regulations providing for the change in the definition of the final average remuneration, producing an expected contribution rate of 20.46 per cent. The computed rate of 20.01 per cent is slightly lower than the expected; this indicates that the progress of the Fund has been satisfactory since the last valuation date.

19. In addition to the contributions to meet the benefit payments, it is necessary to provide for the administrative expenses which are chargeable to the Fund. The percentage of pensionable remuneration required to meet administrative expenses has been estimated to be approximately .25 per cent. Thus, the total contribution rate required from active participants and member organizations is equal to 20.26 per cent.

RECOMMENDATIONS

20. The Regulations provide for contributions by member organizations at the rate of 14 per cent of pensionable remuneration of participants and for contributions by participants at the rate of 7 per cent of such remuneration. It is recommended that contributions at these rates be continued. This procedure has been followed in the past and has resulted in the accumulation of a reserve fund of \$841,579 to cover unexpected hazards and contingencies.

SUMMARY OF EXPERIENCE INVESTIGATION

21. The valuation was based on the respective active service tables for men and women participants, showing the expected number of separations from service on account of withdrawal, death and disability at each age prior to attainment of age sixty.

22. Remuneration scales were used for determining the probable rates of remuneration increase from age to age. Mortality tables based on the expected rates of mortality after retirement were applied to determine the present value of payments to participants or their beneficiaries after retirement. In connexion with the present valuation, in order to check the adequacy of the tables in use, an investigation of the service and mortality experience of the participants and beneficiaries of the Fund was made in accordance with article XXIX of the Regulations. The present investigation, prepared as of 30 September 1956, covers the period from 1 January 1952 to 30 September 1956.

23. The actual cases of separation from service in the periods from 1 January 1952 to 30 September 1954, from 1 October 1954 to 30 September 1955, and from 1 October 1955 to 30 September 1956 were tabulated and compared with the cases expected according to the basic tables. Similarly, the expected remuneration at the end of each period was compared with the actual remuneration for participants covered at the beginning and at the end of the period. Also, the expected number of death among the various classes of retired participants and beneficiaries and the expected benefits cancelled by death were compared for each year with the actual cases. The following tables summarize the results of the comparisons.

Table 4

COMPARISON OF EXPECTED NUMBER OF SEPARATIONS FROM ACTIVE SERVICE WITH ACTUAL NUMBER FOR PERIOD FROM 1 JANUARY 1952, TO 30 SEPTEMBER 1956

Cause of separation	Men			Women		
	Expected cases	Actual cases	Difference	Expected cases	Actual cases	Difference
Withdrawal	231.4	1,339.0	-1,107.6	266.0	1,634.0	-1,368.0
Death	210.9	58.0	+ 152.9	112.7	27.0	+ 85.7
Disability	62.1	12.0	+ 50.1	74.7	17.0	+ 57.7

Table 5

COMPARISON OF EXPECTED REMUNERATION WITH ACTUAL REMUNERATION AS OF 30 SEPTEMBER 1954, 30 SEPTEMBER 1955 AND 30 SEPTEMBER 1956

Group	Expected remuneration \$	Actual remuneration \$	Difference \$
Men	69,616,922	71,434,565	1,817,643
Women	32,184,492	33,800,813	1,616,221

Table 6

COMPARISON OF EXPECTED DEATHS AMONG RETIRED PARTICIPANTS AND BENEFICIARIES WITH ACTUAL DEATHS FOR PERIOD FROM 1 JANUARY 1952 TO 30 SEPTEMBER 1956

Group	Number of deaths			Annual benefit cancelled by death			
	Expected	Actual	Difference	Expected \$	Actual \$	Difference \$	
Retirement benefits:							
Men	9.1	4.0	+5.1	4,839	5,724	- 885	
Women	2.7	1.0	+1.7	1,032	436	+ 596	
	TOTAL	11.8	5.0	+6.8	5,871	6,160	- 289
Disability benefits:							
Men	—	2.0	-2.0	619	2,190	-1,571	
Women	—	—	—	322	—	+ 322	
	TOTAL	—	2.0	-2.0	941	2,190	-1,249
Widows' benefits:							
Women	—	6.0*	-6.0	650	3,503*	-2,853	

*Includes 4 cases of remarriage with an annual pension totaling \$2,591.

24. The foregoing summaries show that the actual number of withdrawals from active service during the period, among both men and women participants, exceeded the expected number of withdrawals by a wide margin, which has produced a gain to the Fund. The actual number of deaths in active service among both men and women participants was less than the number expected; the actual death rate proving to be lower in the younger ages than the expected rate results in a gain to the Fund which tends to offset the adverse effect of the low death rate in the older ages. There were fewer disability retirements than were assumed on the basis of the tables adopted, which condition is favourable to the Fund from a financial viewpoint. However, it should be borne in mind that the effect of the medical selection upon the number of deaths and disabilities will tend to decrease with the passage of time and as a greater proportion of poor risk cases are covered by the five-year rule. A trend toward slightly higher actual rates of death and disability may be anticipated.

25. With respect to remuneration experience, the annual increases were on the average about 2 per cent greater for men participants and about 3 per cent greater

for women participants than expected. Since benefits are based on the average final remuneration, any increases in remuneration over those expected produce an increase in cost which offsets to some extent the gains from other sources.

26. The retirement experience was financially favourable to the Fund since participants remained in service after the attainment of the age of retirement and retired on the average between the ages sixty-one and sixty-two.

27. With respect to the mortality experience of retired participants and beneficiaries, the actual number of deaths among pensioners retired on service was less than the number expected; however, the actual amounts of benefit cancelled by death and the present value of such benefits were more than expected. The number of deaths among disability pensioners and beneficiaries drawing widows' benefits, as well as the amounts of benefit cancelled by death and the present value of such benefits were more than expected. Thus, the over-all mortality experience among retired participants and beneficiaries was favourable to the Fund from a financial viewpoint.

28. To summarize, the experience of the Fund as a whole during the period has been favourable. However, there are variations in the individual rates of withdrawal, death, disability, retirement and remuneration of participants in active service when compared with the respective rates of the tables in use. Based on the results

of the experience investigations of the Fund, new active service tables and remuneration scales have been developed by the actuary. These tables are discussed in a separate report submitted to the Board (see paragraphs 29 to 36 which follow).

(Signed) George B. Buck
Consulting Actuary
United Nations Joint Staff Pension Board

21 March 1957

APPENDIX I

Summary of tabulations

Summaries of the data used in the valuation are presented in the following tables showing the distribution of the number and annual remuneration of participants by age and years of service and the distribution of the number and annual benefits of retired participants and beneficiaries by age.

Table 7

NUMBER AND ANNUAL PENSIONABLE REMUNERATION OF PARTICIPANTS
 DISTRIBUTED BY AGE AS OF 30 SEPTEMBER 1956

Age	Men		Women	
	Number	Remuneration \$	Number	Remuneration \$
18	2	3,344	5	7,149
19	2	759	8	16,465
20	4	6,561	21	42,446
21	12	12,678	33	65,777
22	31	49,971	53	118,718
23	26	48,830	58	133,742
24	60	95,230	88	214,596
25	56	105,449	110	264,518
26	83	190,166	128	324,267
27	94	253,462	130	337,601
28	133	380,224	133	345,804
29	139	428,330	131	378,714
30	179	607,833	157	476,662
31	192	680,776	188	602,143
32	204	793,555	178	598,052
33	204	851,150	165	550,637
34	210	932,088	184	658,706
35	236	1,024,900	162	554,980
36	246	1,152,471	171	617,956
37	217	1,112,920	154	579,315
38	171	879,025	133	544,420
39	199	1,067,024	104	396,870
40	199	1,073,092	111	438,789
41	181	1,119,858	98	412,079
42	184	1,146,855	107	428,251
43	199	1,258,218	121	503,676
44	203	1,275,449	95	368,416
45	164	1,140,730	99	405,527
46	162	1,057,061	76	326,238
47	170	1,148,790	82	347,812
48	145	955,280	78	322,769
49	139	983,829	64	270,105
50	121	825,722	63	254,716
51	116	790,947	62	275,840
52	94	649,003	57	228,198
53	120	901,822	51	213,982
54	85	667,589	45	190,593
55	77	594,190	29	107,684
56	69	416,836	36	133,189
57	52	381,635	54	211,999
58	62	427,424	30	126,258
59	43	305,073	23	82,691

Table 7 (continued)

Age	Men		Women	
	Number	Remuneration \$	Number	Remuneration \$
60	32	237,492	26	111,251
61	19	139,496	13	68,081
62	19	160,350	8	27,220
63	15	125,970	5	26,089
64	14	124,443	1	5,600
65	4	41,821	1	2,840
66	6	49,581		
67	2	13,350		
68	2	15,500		
70	1	12,200		
TOTAL	5,399	28,716,352	3,929	13,719,431

Table 8

NUMBER AND ANNUAL PENSIONABLE REMUNERATION OF PARTICIPANTS
DISTRIBUTED BY YEARS OF SERVICE AS OF 30 SEPTEMBER 1956

Years of Service	Men		Women	
	Number	Remuneration \$	Number	Remuneration \$
0	390	1,537,275	363	880,171
1	560	2,038,062	449	1,163,299
2	316	1,317,340	228	598,875
3	431	1,826,870	299	880,529
4	512	2,435,406	384	1,161,948
5	937	4,816,799	765	2,709,610
6	423	2,519,085	271	1,108,610
7	461	2,649,933	251	1,026,505
8	279	1,889,502	194	799,483
9	314	2,392,066	244	1,057,047
10	776	5,294,014	481	2,333,354
TOTAL	5,399	28,716,352	3,929	13,719,431

Table 9

NUMBER AND ANNUAL BENEFITS OF RETIRED PARTICIPANTS
DISTRIBUTED BY AGE AS OF 30 SEPTEMBER 1956

Age	Men		Women	
	Number	Annual benefit \$	Number	Annual benefit \$
<i>Retirement benefits</i>				
60.....	2	968	3	1,540
61.....	6	5,134	4	3,155
62.....	16	10,295	14	7,214
63.....	15	11,871	9	6,161
64.....	11	5,145	3	1,121
65.....	20	16,429	5	1,294
66.....	26	15,103	7	1,856
67.....	9	4,765	4	767
68.....	9	4,453	3	1,231
69.....	8	4,373	4	1,886
70.....	2	980	2	1,256
TOTAL	124	79,516	58	27,481
<i>Disability benefits</i>				
26.....	1	358		
33.....			3	2,922
36.....	1	1,841		
37.....			1	828
38.....	1	598		
39.....	2	2,593	2	905
40.....			1	1,070
41.....			1	583

Table 9 (continued)

Age	Men		Women	
	Number	Annual benefit \$	Number	Annual benefit \$
43.....			1	609
47.....			2	1,841
49.....			1	446
52.....	3	5,415		
55.....	2	2,100	1	574
56.....	1	874		
61.....	1	1,670		
62.....			1	350
TOTAL	12	15,458	14	10,128
<i>Withdrawal benefits</i>				
52.....	1	842		
53.....	1	907		
55.....	1	1,364*		
56.....				
60.....	1	761**	2	665
62.....	1	648	2	834
64.....	1	1,698	3	1,982
TOTAL	6	6,220	7	3,481
GRAND TOTAL	142	101,194	79	41,090

*Deferred benefit commencing in 1962.

**Deferred benefit commencing in 1957.

Table 10

NUMBER AND ANNUAL BENEFITS OF BENEFICIARIES
DISTRIBUTED BY AGE AS OF 30 SEPTEMBER 1956

Widows			Children		
Age	Number	Annual benefit \$	Age	Number	Annual benefit \$
26.....	1	170	0.....	1	240
29.....	2	1,238	2.....	3	840
32.....	2	572	3.....	1	300
34.....	3	1,159	4.....	4	1,192
35.....	2	1,085	5.....	7	2,400
37.....	3	3,092	6.....	6	1,800
38.....	2	2,652	7.....	1	240
39.....	1	950	8.....	10	3,000
40.....	2	1,908	9.....	5	1,354
41.....	1	2,088	10.....	2	690
42.....	1	853	11.....	9	2,854
43.....	1	152	12.....	4	1,200
44.....	4	3,451	13.....	7	2,254
46.....	1	741	14.....	6	2,100
47.....	1	865	15.....	4	1,200
48.....	1	618	16.....	6	1,800
49.....	2	1,375	17.....	11	3,454
50.....	1	407	18.....	2	600
51.....	2	2,811			
52.....	1	815			
53.....	2	766			
55.....	4	3,792			
56.....	3	1,012			
57.....	2	1,344			
58.....	1	106			
59.....	2	355			
60.....	2	853			
61.....	1	229			
62.....	3	879			
65.....	2	559			
72.....	1	121			
TOTAL	57	37,018	TOTAL	89	27,428

SECOND REVIEW OF THE BASIC TABLES OF THE FUND

Report of the consulting actuary

RECOMMENDATIONS BASED ON THE SECOND REVIEW OF THE BASIC TABLES OF THE UNITED NATIONS JOINT STAFF PENSION FUND

29. The second actuarial investigation of the mortality, service and compensation experience of the participants and beneficiaries of the Pension Fund covered the period from 1 January 1952 to 30 September 1956. Paragraphs 21 through 28 of the Report of the consulting actuary on the fourth actuarial valuation of the Fund present the results of this investigation. In summarizing the results of the investigation, the actuary noted that the experience of the Fund as a whole during the period investigated had been favourable, indicating that the tables recommended by the Committee of Actuaries at the time of the Fund's establishment on a permanent basis, which have been in use since that date, have proved conservative. However, it was also noted that the investigation indicated variations in the individual rates of withdrawal, death, disability, retirement and remuneration of participants in active service, when compared with the respective rates of the tables in use. Specifically, the investigation indicated that the actual number of withdrawals was substantially greater than the expected number, the number of deaths was less than the expected, the number of disability cases was less than expected and participants were not retiring at precisely age sixty as presently assumed. On the other hand, the actual rate of increase in the remuneration of participants has been greater each year than had been expected on the basis of the tables in use. The experience with respect to mortality after retirement and disability has been financially favourable to the

Fund. The number of deaths among recipients of retirement benefits has been less than expected; however, most present recipients may be considered as being a medically selected group. No change in the rates of mortality among benefit recipients is recommended at this time.

30. The tables presently in use have proved to be slightly conservative as indicated by the financial progress of the Fund since its inception. This slight conservatism is desirable since it is humanly impossible to predict exactly all of the future contingencies involving the Fund. Thus the best of estimates will, in all probability, ultimately prove to be an under-statement or an over-statement of the Fund's liabilities. A reasonable degree of over-estimation results in the production of small gains as have been indicated in the past. The Board has had little difficulty in dealing with such gains. Presumably the use of tables which would result in under-estimating liabilities would have been of considerably more embarrassment to the Board. The actuary, therefore, raises little objection to the continued use of the present tables. However, although the net result of the present tables has proved satisfactory, tables which more closely reflect the actual individual rates would be preferable, provided care is taken not to disturb the rather delicate balance of the Fund's sound progress. In the light of these considerations, the actuary therefore recommends the Board's adoption of the tables set forth in the appendix to this report and the substitution of such tables for tables 1, 2, 3, 4, 7 and 8 presented in appendix 2 to the report on the first actuarial valuation of the Fund.

ACTUARIAL VALUATION OF THE FUND AS OF 30 SEPTEMBER 1956 ON THE BASIS OF THE TABLES RECOMMENDED

31. In accordance with the instructions of the Standing Committee of the Board, an actuarial valuation has been prepared as of 30 September 1956 on the basis of the tables recommended in this report. A comparison of the valuation balance sheet set forth herein with table 3 of the report on the fourth actuarial valuation of the Fund demonstrates the effect of the adoption of the revised tables. The valuation methods as set forth in the latter report have been followed in the preparation of this valuation with one exception which requires some explanation.

32. The Board has on the agenda for its eighth session three items which are not mutually exclusive; namely, consideration of the recommendations of the consulting actuary with respect to a revision in the basic tables, amendment of the Regulations involving changes in benefits, and the position under the Fund of staff members appointed on a fixed-term basis for temporary service. In being requested to comment on each of these three items, the actuary found himself in somewhat of a dilemma. The facts of the problem are these:

(1) A review of the past experience under the Fund indicates that certain changes in the tables are desirable.

(2) The calculated cost of the proposed amendments will depend upon the Board's decision as to whether to accept the actuary's recommendations for a change in tables or not.

(3) The decision with respect to the position of staff members appointed for temporary service, while obviously not affecting past experience, most certainly will have an effect upon the future composition of the participation under the Fund with a consequent effect on the future experience of the Fund, principally with respect to the rate of withdrawal. Furthermore, it appeared that, whether or not the proposal presented in document JSPB/R.22 was adopted, some action might be taken by member organizations to eliminate presumably temporary staff from participation, or at least full participation, in the Fund.

To make calculations on the basis of all the possible combinations of Board decisions on the above three items would hardly have been possible within the limited time available; moreover, the presentation of so many alternatives would probably have caused considerable confusion in the minds of all concerned. The prime objective seemed to be to permit the Board to make its decision with respect to item 1 completely independent of its decision with respect to item 3. The actuary has therefore proceeded as follows.

33. The tables recommended in this report have been prepared on the assumption that temporary fixed-term staff members will be eliminated from participation, or at least full participation, under the Fund. However, the gains to the Fund resulting from participation of tem-

porary staff members have been determined as accurately as possible on the basis of the somewhat limited information available. These gains have been taken into account in determining the required contribution rate. Thus, the Board may make its decision with respect to the new tables recommended by the actuary irrespective of the decision taken on the position of temporary staff members or any future action in this regard which may be taken by the member organizations themselves. If it develops that temporary staff members are not eliminated from the Fund, then the actuarial valuations in the future may be made on the basis of the new tables with account being taken of the gains resulting. If such temporary staff members were eliminated from full participation, future actuarial valuations may still be properly made on the basis of the new tables following precisely the valuation methods used in the past without the exception noted, namely, taking account of prospective gains resulting from the withdrawal of temporary staff

members. Such gains have always been taken into account but in the past they were only taken into account retrospectively.

34. With respect to the calculated cost resulting from the proposed amendments under agenda item 14, the actuary has proceeded on the assumption that the recommended tables will meet with the approval of the Board. Since a substantial proportion of the proposals deal with death and disability benefits, the calculated costs under the proposals will differ quite substantially from the calculated costs computed on the basis of the tables in use heretofore, the cost of death and disability benefits on the new tables being lower than that based upon the tables presently in use.

35. The following valuation balance sheet shows the present and prospective assets and liabilities of the Fund as of 30 September 1956 on the basis of the tables recommended in this report and the valuation methods above stated.

Table 11

VALUATION BALANCE SHEET SHOWING THE ASSETS AND LIABILITIES OF THE UNITED NATIONS JOINT STAFF PENSION FUND
PREPARED AS OF 30 SEPTEMBER 1956 ON THE BASIS OF TABLES RECOMMENDED

<i>Assets</i>	<i>\$</i>	<i>\$</i>	<i>Liabilities</i>	<i>\$</i>	<i>\$</i>
Present assets of the Fund creditable to:			Present value of benefits payable from the pension reserve account to present recipients of retirement, disability, withdrawal and widows' benefits including prospective benefits to widows of such recipients..		2,944,698
Pension reserve account		3,077,255	Present value of prospective benefits to be met by regular contributions to the participants' account and the accumulation account:		
Participants' account:			To present participants:		
Regular contributions	17,385,863		Benefits payable upon retirement	137,122,948	
Contributions under article XVIII	238,843	17,624,706	Benefits payable upon disability.	12,942,792	
Accumulation account		39,562,795	Benefits payable upon withdrawal after five years' service.....	7,917,182	
TOTAL PRESENT ASSETS		60,264,756	Benefits payable upon withdrawal before five years' service or upon death in service when no widow's benefit payable	5,906,115	
Present value of future contributions by participants and by member organizations to balance liabilities...		139,922,895	TOTAL	163,889,037	
			To widows and children of present participants:		
			Benefits payable upon death in service	7,614,289	
			Benefits payable upon retirement and upon death after retirement	22,131,619	
			Benefits payable upon disability and upon death after disability	2,342,080	
			TOTAL	32,087,788	
			Total liabilities on account of active participants		195,977,025
			Present value of prospective benefits payable on account of voluntary contributions under article XVIII accumulated to date in the participants' account		238,843
			Present value of benefits payable from the accumulation account to children of presently retired or deceased participants		185,515
			Reserve for contingencies		841,579
TOTAL ASSETS		200,187,651	TOTAL LIABILITIES		200,187,651

36. The asset side of the balance sheet is identical with the assets shown in table 3 in the report on the fourth actuarial valuation as regards present assets. The balancing item, present value of future contributions by participants and member organizations, reflects the change in liabilities as calculated on the basis of the new tables. On the liability side of the balance sheet the first item is \$2,944,689, representing the present value of prospective benefits to present recipients of monthly benefits except children's benefits, which remains unchanged from the previous balance sheet since no change has been recommended in the tables applying to present recipients of benefits. Next is shown the present value of prospective benefits to or on account of present participants. The total amount of such liability is \$195,977,025, consisting of \$163,889,037, the present value of prospective benefits to present participants, and \$32,087,988, the present value of prospective benefits to the widows and children of present participants who may be expected at death, disability or retirement to have dependents qualifying for benefits. The remaining three

items, namely, the present value of prospective benefits on account of voluntary contributions, benefits payable to children of presently retired or deceased participants, and the reserve for contingencies, remain unchanged from the previous balance sheet. The total present value of all future benefits payable on account of active or retired participants and their dependents including the contingency reserve is \$200,187,651. If from this amount the present assets of \$60,264,756 are subtracted, the remainder is \$139,922,895, which represents the present value of the future contributions by participants and member organizations. A calculation indicates that contributions at the rate of 19.92 per cent of the participants' future pensionable remuneration, together with the expected gain from withdrawals of temporary staff members, have a present value of this amount. The percentage of pensionable remuneration required to meet administrative expenses is estimated to be 0.25 per cent. Thus, the total contribution rate required from active participants and member organizations is equal to 20.17 per cent, leaving a margin of 0.83 per cent between actuarially computed rate and the statutory rate of 21 per cent.

(Signed) George B. Buck
Consulting Actuary,
United Nations Joint Staff Pension Board

25 March 1957

APPENDIX II

Tables recommended for adoption

Table 12

SELECT RATES OF SEPARATION FROM ACTIVE SERVICE

MEN

Age	Rates of Withdrawal				Rates of Death	Rates of Disability
	1st year	2nd year	3rd year	Ultimate		
18	.2952				.0010	.0005
19	.2896	.1546			.0010	.0005
20	.2840	.1500	.0826		.0010	.0005
21	.2785	.1455	.0792	.0578	.0011	.0005
22	.2730	.1411	.0759	.0546	.0011	.0005
23	.2676	.1368	.0727	.0515	.0012	.0005
24	.2622	.1326	.0696	.0485	.0012	.0006
25	.2569	.1285	.0666	.0446	.0013	.0006
26	.2516	.1244	.0637	.0419	.0013	.0006
27	.2464	.1204	.0609	.0393	.0014	.0006
28	.2413	.1164	.0582	.0368	.0014	.0007
29	.2363	.1125	.0556	.0344	.0015	.0007
30	.2314	.1086	.0530	.0321	.0016	.0007
31	.2266	.1048	.0505	.0299	.0016	.0008
32	.2219	.1011	.0480	.0278	.0017	.0008
33	.2173	.0975	.0455	.0257	.0018	.0008
34	.2128	.0940	.0431	.0237	.0019	.0009
35	.2083	.0906	.0407	.0217	.0020	.0009
36	.2039	.0873	.0384	.0198	.0021	.0010
37	.1995	.0841	.0362	.0181	.0022	.0011
38	.1952	.0810	.0341	.0164	.0023	.0012
39	.1909	.0780	.0321	.0149	.0025	.0013
40	.1867	.0751	.0301	.0135	.0027	.0014
41	.1826	.0723	.0282	.0122	.0029	.0016
42	.1786	.0696	.0263	.0110	.0031	.0018
43	.1747	.0670	.0245	.0100	.0034	.0020
44	.1709	.0644	.0227	.0090	.0037	.0022
45	.1671	.0619	.0210	.0080	.0040	.0024

Table 12 (continued)

Age	Rates of Withdrawal				Rates of Death	Rates of Disability
	1st year	2nd year	3rd year	Ultimate		
46		.0594	.0194	.0070	.0043	.0027
47			.0179	.0060	.0046	.0030
48				.0030	.0049	.0033
49				.0040	.0053	.0036
50				.0030	.0057	.0040
51				.0020	.0062	.0045
52				.0010	.0067	.0051
53					.0073	.0057
54					.0080	.0063
55					.0088	.0070
56					.0097	.0079
57					.0107	.0089
58					.0118	.0100
59					.0130	.0112

Table 13

SELECT RATES OF SEPARATION FROM ACTIVE SERVICE

WOMEN

Age	Rates of Withdrawal				Rates of Death	Rates of Disability
	1st year	2nd year	3rd year	Ultimate		
18	.3211				.0009	.0010
19	.3171	.1965			.0010	.0010
20	.3130	.1929	.1260		.0011	.0010
21	.3088	.1892	.1227	.0953	.0011	.0010
22	.3045	.1854	.1193	.0929	.0011	.0011
23	.3001	.1815	.1157	.0902	.0012	.0011
24	.2956	.1775	.1120	.0872	.0012	.0012
25	.2910	.1734	.1082	.0840	.0012	.0012
26	.2863	.1692	.1043	.0806	.0013	.0012
27	.2815	.1649	.1003	.0771	.0014	.0012
28	.2767	.1605	.0962	.0735	.0014	.0013
29	.2719	.1560	.0920	.0698	.0015	.0013
30	.2671	.1514	.0877	.0661	.0016	.0013
31	.2622	.1467	.0833	.0623	.0016	.0013
32	.2572	.1419	.0788	.0585	.0017	.0013
33	.2522	.1370	.0742	.0546	.0017	.0014
34	.2472	.1320	.0695	.0508	.0018	.0014
35	.2422	.1269	.0647	.0470	.0018	.0015
36	.2371	.1217	.0598	.0433	.0019	.0016
37	.2320	.1164	.0552	.0397	.0020	.0017
38	.2269	.1110	.0509	.0362	.0021	.0018
39	.2218	.1057	.0469	.0329	.0022	.0019
40	.2167	.1005	.0432	.0298	.0023	.0020
41	.2116	.0954	.0397	.0269	.0024	.0022
42	.2065	.0904	.0363	.0242	.0025	.0024
43	.2014	.0855	.0331	.0217	.0027	.0026
44	.1962	.0807	.0300	.0193	.0029	.0028
45	.1910	.0760	.0270	.0170	.0031	.0031
46		.0714	.0241	.0147	.0033	.0034
47			.0213	.0124	.0035	.0038
48				.0101	.0037	.0042
49				.0078	.0040	.0046
50				.0055	.0043	.0051
51				.0032	.0046	.0056
52				.0009	.0049	.0062
53					.0052	.0069
54					.0056	.0077
55					.0060	.0086
56					.0064	.0096
57					.0069	.0106
58					.0074	.0118
59					.0079	.0129

Table 14

SALARY SCALE
MEN AND WOMEN

Age	Salary Scale	Age	Salary Scale
18.....	990	44.....	2,560
19.....	1,045	45.....	2,629
20.....	1,100	46.....	2,699
21.....	1,150	47.....	2,771
22.....	1,200	48.....	2,844
23.....	1,252	49.....	2,917
24.....	1,307	50.....	2,992
25.....	1,362	51.....	3,067
26.....	1,417	52.....	3,143
27.....	1,472	53.....	3,219
28.....	1,527	54.....	3,295
29.....	1,584	55.....	3,372
30.....	1,644	56.....	3,449
31.....	1,705	57.....	3,527
32.....	1,766	58.....	3,605
33.....	1,828	59.....	3,683
34.....	1,890	60.....	3,762
35.....	1,953	61.....	3,839
36.....	2,015	62.....	3,914
37.....	2,079	63.....	3,984
38.....	2,145	64.....	4,050
39.....	2,213	65.....	4,114
40.....	2,283	66.....	4,180
41.....	2,352	67.....	4,250
42.....	2,421	68.....	4,325
43.....	2,490		

Table 15

RETIREMENT TABLE
MEN

Age	Rates of Retirement	Rates of Death
60.....	.3875	.0142
61.....	.3249	.0157
62.....	.2801	.0172
63.....	.2666	.0187
64.....	.2852	.0203
65.....	.4004	.0219
66.....	.5221	.0235
67.....	.6683	.0252
68.....	.9920	.0080

Table 16

RETIREMENT TABLE
WOMEN

Age	Rates of Retirement	Rates of Death
60.....	.3875	.0085
61.....	.3249	.0091
62.....	.2801	.0098
63.....	.2666	.0106
64.....	.2852	.0115
65.....	.4004	.0125
66.....	.5221	.0137
67.....	.6683	.0152
68.....	.9949	.0051