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Transport Pension Fund

Actuarial valuation as at 31 March 2019

Prepared by Alexander Forbes Financial Services

August 2019


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Actuarial valuation of the Transport Pension Funds as at 31 March 2019

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EXECUTIVE SUMMARY**Present value of liabilities**

1. The present value of the actuarial liabilities of the fund as at the current and previous valuation dates were as follows:

	31 March 2018 (R'million)	31 March 2019 (R'million)
Active members	858	715
- Past service liability	824	669
- Pension increase reserve*	<u>34</u>	<u>46</u>
Pensioners	3 943	3 820
- Pensioners	3 783	3 622
- Pension increase reserve*	<u>160</u>	<u>198</u>
Contingency reserves	324	281
- Solvency reserve		
- Actives	48	37
- Pensioners	234	221
- Contribution reserve	<u>42</u>	<u>23</u>
Total Liabilities	5 125	4 816

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

Summary of results

2. Comparing the value of the fund's assets with the total past service liabilities shows the following results:

	31 March 2018 (R'million)	31 March 2019 (R'million)
Market value of assets	9 311	9 163
Value of accrued liabilities	4 607	4 291
Surplus/(Deficit) before contingency reserves	4 704	4 872
Contribution reserve	42	23
Pension increase reserve	194	244
Solvency reserve	282	258
Surplus/(Deficit)	4 183	4 347
Funding level	181.7%	190.3%

Conclusion

3. I confirm that, based on the information available, the fund was in a sound financial condition as at the valuation date, i.e. the assets of the Transport Pension Fund exceeded the fund's actuarial liabilities and recommended contingency reserves as at the valuation date.

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1. INTRODUCTION

I am pleased to present to the trustees of the Transport Pension Fund (*the fund*) this actuarial valuation as at 31 March 2019 (*the valuation date*). This report sets out the results of the actuarial valuation of the fund as at the valuation date and includes an analysis of the financial progress of the fund since 31 March 2018 (*the previous valuation date*). The period between the previous valuation date and the current valuation date is referred to hereinafter as the valuation period.

Registration and operation

- 1.1 The Transnet Pension Fund is a defined benefit pension fund established in terms of the Transnet Pension Fund Act 62 of 1990 (the "Act"). The fund has been closed to new members since 1 December 2000. The Transnet Pension Fund Amendment Act, promulgated in the second half of 2007, changed the name of the fund with effect from 11 November 2005 to the Transport Pension Fund.
- 1.2 The Transnet Pension Fund Amendment Act restructured the Transport Pension Fund into a multi-employer pension fund. From the date this Act came into effect, all existing members, pensioners, dependent pensioners, liabilities, assets, rights and obligations of the Transport Pension Fund are attributable to a sub-fund, with Transnet as the principal employer.
- 1.3 The amended rules of the fund established a sub-fund in the name of South African Airways (Pty) Ltd ("SAA") from 1 April 2006. A further sub-fund in the name of the Passenger Rail Agency of South Africa ("PRASA") was established with effect from 1 May 2006. The third sub-fund currently in existence is the Transnet sub-fund ("Transnet").

Objectives

- 1.4 This actuarial valuation has been carried out as at the valuation date with the following objectives:
 - to assess the **financial soundness** of the fund, by comparing the value of liabilities accrued to the valuation date with the value of the assets held as at that date;
 - to investigate and report on **actual experience of the fund** since the previous valuation;
 - to review the **assumptions used** in light of actual experience and industry developments;
 - to assess the necessity for, and quantum of, any **contingency reserves**;
 - to assess the **suitability of the assets** in relation to the liabilities of the fund; and
 - to meet **statutory requirements**.

Valuation data

- 1.5 In compiling this report, I have relied upon the accuracy and completeness of information made available to me by the administrators, Momentum Retirement Administrators, and external parties. Except where expressly stated in the report, I have not independently verified the accuracy of the facts or the basis of the information supplied to me.
- 1.6 The results of the valuation depend on the accuracy of:
 - the membership data;
 - the information on the assets, as supplied by the relevant sources; and
 - the draft audited financial statements for the valuation period.

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- 1.7 Reasonability checks have been performed on the above and I am satisfied with the general accuracy and completeness of the data provided and with its suitability for purposes of this actuarial valuation. Further information regarding the reasonability checks performed is set out in section 3.

Capacity, brief and professional guidance

- 1.8 This report has been prepared by Alexander Forbes Financial Services (Pty) Ltd ("*Alexander Forbes*") solely for the benefit of trustees of the Transport Pension Fund, the Minister of Public Enterprises and the Minister of Finance, and is prepared in accordance with the instructions given by the trustees of the fund. The trustees are charged by the Transnet Pension Fund Act 62 of 1990 ("the Act") to investigate the financial condition of the fund and report thereon to the Minister of Public Enterprises and the Minister of Finance.
- 1.9 In terms of General Rule 3.14.3 of the fund, the fund shall be valued by the Actuary at intervals not exceeding three years, to determine whether the fund is in a position to pay the benefits provided for in the Rules. The current practice is to perform annual actuarial valuations of the fund. The trustees appointed Alexander Forbes Financial Services to perform this valuation.
- 1.10 The previous valuation of the fund was carried out as at the previous valuation date by Alexander Forbes Financial Services and, at that date, the fund was in a sound financial position.
- 1.11 Throughout this report any values that have been determined are, except where otherwise stated, in accordance with our view of the most probable future experience. Our specific assumptions and other reliances and limitations are documented in the following sections and supporting appendices. These sections and appendices are an integral part of this report.
- 1.12 This report complies with the relevant Guidance Notes of the UK Actuarial Profession and the relevant Professional Guidance Notes of the Actuarial Society of South Africa.
- 1.13 Alexander Forbes does not accept any liability to any persons, other than the trustees, in connection with this report or its related enquiries. I accept no liability in respect of any matter outside the scope and limitations of this report and purpose for which it is prepared.
- 1.14 This report may not be disclosed and / or relied upon in whole or in part to / by any person other than the trustees or quoted in any other context without prior written consent. Any person, other than the trustees to whom this report is addressed, who receives a draft or copy of this report (or any part of it) or discusses it (or any part of it) or any related matter with me or any third party, does so on the basis that they acknowledge the source of this report and accept that they may not rely on it for any purpose whatsoever and that I owe a duty of care only to the trustees. Any portion of this report, if reproduced or transmitted, must include a reference to the full report and to this clause.
- 1.15 This report has been prepared as at the valuation date and covers the valuation period given above. Unless specifically stated to the contrary, it does not take into account any events subsequent to the valuation date.

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2. DEVELOPMENTS SINCE THE PREVIOUS VALUATION DATE

Pension increases

- 2.1 The rules of the SAA sub-fund allow for pension increases above the 2% minimum to be paid, subject to affordability as determined in accordance with the Pension Increase Policy, and the approval of the employer. In addition to the 2% granted to each pensioner in terms of the rules of the SAA sub-fund, an additional 1.05% increase was granted during the valuation period for pensioners of the SAA sub-fund.
- 2.2 The rules of the PRASA sub-fund allow for pension increases above the 2% minimum to be paid from time to time in order to maintain 100% of purchasing power, and annually to a maximum of 75% of the average CPI in the previous financial year, subject to an assessment of affordability by the fund and its actuaries, and the approval of the employer. In addition to the 2% granted to each pensioner in terms of the rules of the PRASA sub-fund, an additional 1.05% increase was granted during the valuation period for pensioners of the PRASA sub-fund.
- 2.3 Pension increases of 2% were granted for pensioners of the Transnet sub-fund.

Bonus pensions

- 2.4 The rules of the sub-funds allow for bonus pensions to be paid, subject to an assessment of affordability by the fund and its actuaries, and the approval of the relevant employer.
- 2.5 A bonus payment equal to 10% of annual pensions was granted to pensioners of the Transnet sub-fund in April 2018. We made allowance for this in the previous valuation by adjusting the value of assets.
- 2.6 Bonus payments equal to 15% of annual pensions were granted to pensioners of the Transnet sub-fund in October 2018 as well as December 2018 and 13th cheques were granted to pensioners of the SAA and PRASA sub-funds in December 2018.

Rule amendments

- 2.7 There were no rule amendments during the valuation period that could impact on the financial condition of the fund.

Administration and actuarial services

- 2.8 The fund was administered by Momentum Retirement Administrators during the valuation period.
- 2.9 Alexander Forbes are the appointed actuaries to the fund.

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3. MEMBER DATA

- 3.1 The valuation of the fund at the valuation date was based on the membership detailed below. A complete data requirement specification for the fund was previously prepared by Alexander Forbes Financial Services and discussions were held previously with the administrators to assist in ensuring the data requirements were met.
- 3.2 Further statistics, including a reconciliation of the current membership with that present at the previous valuation, are provided in appendix 2 and appendix 3.
- 3.3 The following tables summarise the data:

Active members	Total fund	
	31 March 2018	31 March 2019
Number of contributing members	244	208
Total annual pensionable salary (R'000)	88 942	78 989
Average annual pensionable salary (R)	364 516	379 755
Average age (salary weighted)	55.8	56.4
Average service (salary weighted)	34.7	34.8

The number of contributing members is one member more than what is stated in the fund's financial statements. The difference is due to an additional member, confirmed by the administrator, included in our valuation.

Pensioners	Total fund	
	31 March 2018	31 March 2019
Number of pensioners	5 506	5 376
Total annual pension (R'000)	409 524	423 348
Average annual pension (R)	74 378	78 748
Average age (pension weighted)	67.9	68.7

Data checks

- 3.4 The following paragraphs set out the data received for the valuation and the reasonability and other checks performed on this data.
- 3.5 Electronic data was supplied in respect of the following groups:
 - Pensioners;
 - Active members; and
 - Exits.
- 3.6 The results of the valuation are dependent on the accuracy and completeness of the data supplied. Any significant changes to the data would result in potentially significant changes in the valuation results.

Checks performed

- 3.7 A reconciliation of the valuation data with the financial statements has been attempted and a number of reasonability tests to verify the correctness of the data have been performed.
- 3.8 For each of the above categories of membership checks have been done for missing dates of birth, dates of commencement of pension, gender and pension amounts. Checks have also been carried out to ensure that there are no duplicate records contained within a particular group and that no members appear in more than one group.
- 3.9 The following reasonability checks have been performed for active members:
- Date feasibility;
 - Dates are in logical order;
 - Ages are in reasonable ranges;
 - Annual pensionable salaries are in reasonable ranges;
 - Consistency of salary weighted age and service over the valuation period;
 - Annual pensionable salary increases are reasonable.
- 3.10 The following reasonability checks have been performed for pensioners:
- Date feasibility;
 - Dates are in logical order;
 - Ages are in reasonable ranges;
 - Period on pension is in reasonable range;
 - Annual pensions are in reasonable ranges;
 - Consistency of average age and pension weighted average age over the valuation period;
 - Annual pension increases are reasonable;
 - The annual pensions paid, as shown in the financial statements, seem in line with the average pension from the data.

Data supplied and data concerns

- 3.11 After performing the data checks described above, a number of queries were sent to Momentum Retirement Administrators where omissions or inconsistencies in the data were identified. The responses received from the administrators resulted in the records of some members and pensioners being either updated or deleted.
- 3.12 Given the checks performed on the data and the responses to the queries raised, the data on which the valuation has been based appears to be reasonable for the purposes of this valuation.

4. ASSETS

4.1 This section sets out the value placed upon the fund's assets. In order to ensure consistency with the actuarial value placed on the liabilities of the fund, which follow a market value basis approach as set out in the following section of this report, we have used the market value of assets as reported in the annual financial statements.

Investment strategy

4.2 The fund has a detailed investment strategy document and the trustees and fund's administrators undertake regular checks to ensure that the fund's asset composition complies with the investment guidelines set out in the investment strategy document.

Revenue statement

4.3 A consolidated revenue and expenditure account for the period 1 April 2018 to 31 March 2019 was provided based on draft audited financial statements.

4.4 A summary of the revenue and expenditure account for the total fund is as follows:

	R'000	R'000
Fund as at 1 April 2018		9 310 771
Revenue and appreciation		448 463
Contributions received and accrued	18 843	
Net investment income	428 015	
Other income (Lumpsum & Annuities written back)	1 605	
Expenditure		(595 536)
Administration expenses	(3 416)	
Benefit payments	(571 423)	
Transfers out	(20 797)	
Fund as at 31 March 2019		9 163 598

Fund assets

- 4.5 The composition of the fund's assets at market value as reported in the annual financial statements produced by the fund's administrators is set out in the following table:

	Market Value R'000	Allocation %
Foreign		
Cash and deposits	59 828	0.56
Debt instruments	4 392	0.04
Foreign listed equities	1 968 357	18.41
Listed property shares	1 778	0.02
Collective investment scheme	3 164	0.03
Local		
Cash and deposits	837 895	7.84
Debt instruments	4 423 296	41.38
Equities (listed, unlisted, private)	2 172 763	20.32
Listed property shares	592 900	5.55
Commodities	9 750	0.09
Private equity funds	32 885	0.31
Collective investment schemes	583 290	5.45
Total investments	10 660 298	100.0
Plus: Current assets	136 036	
Less: Current liabilities	(1 573 068)	
Less: Non-current liabilities*	(12 410)	
Less: Actuarial reserves	(77 258)	
Total assets for valuation purposes	9 133 598	

* A provision of R11 543 000 has been included to cater for expected future payments in respect of class actions against the fund.

Valuation of assets

- 4.6 For purposes of this actuarial valuation, the assets have been taken into account at 100% of fair (or market) value and no investment margin has been set aside. Therefore, the assets of the fund have been taken into account at R9 163 million as at the valuation date. This is consistent with asset valuation methodology applied to the valuation of the fund's liabilities.

Fund returns

- 4.7 The assets of the fund earned approximately 6.1% per annum, as per the investment report, during the valuation period, as provided by the fund's asset consultants. This investment return is net of investment management fees.

4.8 This return should be considered in the context of the 8.62% per annum assumed for active members and the effective 8.62% per annum assumed for pensioners in the previous actuarial valuation report.

Appropriateness of assets

4.9 In May 2018 the trustees agreed to a revised asset strategy to better match the assets to the nature of the fund's liabilities. The new strategic asset allocations is as follows:

	Allocation
	%
Local equities	22.0
Local cash and alternatives	5.0
Cash flow matching	40.0
Local property	8.0
Local credit	3.0
Global equities	22.0
	100.0

4.10 I am satisfied with the appropriateness of the matching of the fund's assets and liabilities.

5. VALUATION METHOD AND BASIS

The valuation has been conducted on the basis of the benefits and other provisions of the rules of the fund as at the valuation date.

Valuation method

- 5.1 The fund has been closed to new members since 1 December 2000. The actuarial valuations of the fund carried out since 31 March 2001 have, therefore, been carried out using a valuation method known as the Attained Age Method. This method allows for the fact that the fund will effectively age over time as the current membership increases in age.

Accrued liabilities

- 5.2 The accrued liability for active members is derived as the present value of their expected future benefit entitlements based on service up to the valuation date and projected salaries to the date of benefit entitlement, using specific actuarial assumptions for the future financial and demographic experience of the fund.
- 5.3 The accrued liability for pensioners is calculated as the present value of their expected future pension payments using specific actuarial assumptions for the future financial and demographic experience of the fund. Provision is made for the future pension increases of 2% per annum, as specified in the rules of the fund.

Future service contribution rate

- 5.4 Under the Attained Age Method, the present value of benefits that will accrue to active members in respect of all future service following the valuation date, is calculated and converted into a contribution rate by dividing this by the present value of projected salaries for all members over the same period. This gives the required future service contribution rate before allowing for any subsidy from the contribution reserve.
- 5.5 There is no future service contribution rate in respect of pensioners.

Contribution reserve

- 5.6 The Attained Age Method of funding calculates a future service contribution rate, which, if paid throughout a member's working lifetime, is expected to fund the member's final benefit at retirement. The true cost of benefit accrual is, however, an increasing function of age and therefore, under the Attained Age Method, more is paid into the fund in the initial years than is required to meet the value of the benefit accruing in those early years. The excess contributions in the initial years build up as a reserve, the contribution reserve.
- 5.7 In later years, this reserve is utilised when the Attained Age Method contribution rate is lower than the value of benefits accruing. This ensures a stable contribution rate, if all other valuation assumptions are met.
- 5.8 The recommended balance in the contribution reserve as at the valuation date is determined as the difference between the required contribution rate under the Attained Age Method and the actual contribution rate paid to the fund, multiplied by the present value of all expected future salaries.

Risk benefits

- 5.9 The death and ill-health benefits provided by the fund are currently self-insured within the fund and the valuation method and assumptions fully provide for the expected costs of these benefits.

Expenses

- 5.10 The employers pay the fund's administration expenses directly and no allowance for administration expenses has been made in the valuation.
- 5.11 Investment expenses and taxes are allowed for implicitly by assuming that they are offset against investment proceeds. The valuation interest rate used in this report is therefore assumed to be net of investment fees and taxes.

Assets

- 5.12 We have used the market value of assets for valuation purposes.

Principal actuarial assumptions

- 5.13 In setting the assumptions to be used for estimating the liabilities of the fund, current actuarial principles and the Alexander Forbes best practice "house view" have been followed.
- 5.14 Current practice is for these assumptions to be "best estimate" assumptions. Therefore, no deliberate margins for conservatism would be included in the assumptions; and the assumptions would generally be motivated by reference to the experience of the fund, statistical evidence and yields on government or corporate bonds.
- 5.15 In addition, the assumptions should be reasonable both independently and combined. The assumptions used to value the liabilities must be consistent with those used to value the assets.
- 5.16 The actuarial assumptions used in the valuation of the liabilities are detailed below:

Active members**Gross discount rate**

- 5.17 The gross discount rate is determined with regard to the yield on 10 year government bonds on the valuation date, reflecting the average duration of the liabilities. This implies a gross discount rate of 9.57%. The previous year's gross discount rate was set at 8.62%.
- 5.18 No provision for asset management fees has been made since the out performance over the benchmark produced by active asset management should exceed the asset management fee.

Inflation

- 5.19 A future inflation assumption has been estimated by dividing the yield on 10 year inflation-linked bonds by a similar duration fixed coupon bond yield and converting to a percentage.
- 5.20 Expected inflation as at the valuation date is therefore set at 6.04% p.a. $(1.0957 / 1.0333 - 1)$, compared to 6.20% at the last valuation.

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Salary increases

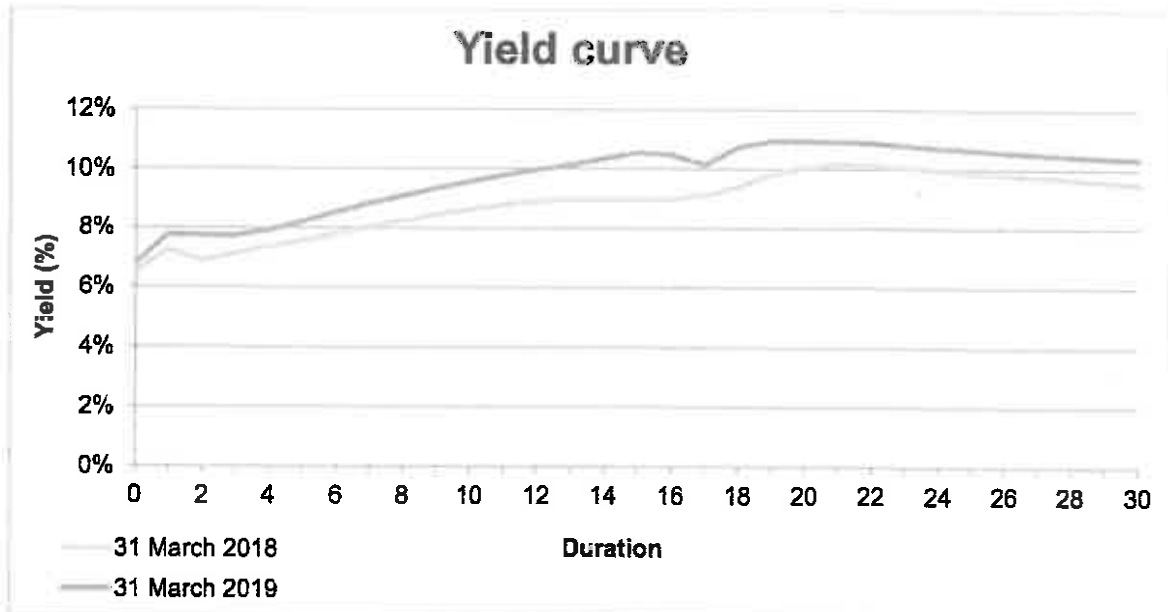
5.21 It is assumed that salaries will increase at an average rate of 1% in excess of inflation, due to general productivity improvements in the economy. We have therefore allowed for general salary increases at the rate of 7.04% p.a. (compared to 7.20% at the last valuation). In addition, in the absence of a fund-specific salary increase scale, there is an allowance for merit salary increments based on the Alexander Forbes Best Estimate salary increase scale. An extract from the scale is shown below, while the complete salary increase scale can be found in appendix 5.

Age	Merit Increase
40	2.9%
50	1.5%
60	1.5%
65	1.5%

Pensioners

Yield curve

5.22 The gross discount rates are determined with regard to the all bond yield curve on the valuation date. I believe an appropriate matched investment strategy for the fund would reflect an asset profile of primarily bond investments. I have therefore used the yield curve as the discount rate, as implied by the efficient market hypothesis. The graph below compares the yields as at 31 March 2018 and 31 March 2019:



5.23 The expected future cashflows at each duration have been discounted using the yield implied by the yield curve at each specific duration.

5.24 The average discount rate which produces equivalent results is 9.44% p.a. compared to the single discount rate of 8.58% p.a. in the previous valuation.

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- 5.25 No provision for asset management fees has been made, since the out-performance over the benchmark produced by active asset management should exceed the asset management fee.

Pension increases

- 5.26 Pensions in course of payment are increased by 2% per annum in terms of the rules of the fund and sub-funds. In addition, a reserve is held to allow for changes in the pension increase targets in respect of the PRASA and SAA sub-funds.
- 5.27 For the PRASA sub-fund the allowance made targets pension increases of 75% of CPI by using a net discount rate of 4.82% ($1.0957 / 1.0453 - 1$) to value the liabilities. For the SAA sub-fund the allowance made targets pension increases of 75% of CPI taking account of the level of funding based on a discount rate of 5.5%.

Demographic assumptions

- 5.28 The demographic assumptions have been retained from the previous valuation, since at this point we do not have sufficient demographic history for the fund to warrant a change in these assumptions. We propose that a mortality investigation be undertaken at a future date so that we may verify the appropriateness of the demographic assumptions applied.
- 5.29 The fund specific Transnet Pre- and Post-retirement Mortality Tables and Ill Health tables have been adopted to represent the expected mortality of all members. The full tables are available in appendix 6, while extracts from the tables are shown below.

Age	Pre Ret Mortality		Ill Health		Post Ret Mortality	
	Male	Female	Male	Female	Male	Female
25	0.23%	0.23%	0.06%	-	0.93%	0.31%
30	0.20%	0.20%	0.16%	0.03%	1.17%	0.39%
35	0.23%	0.23%	0.32%	0.09%	1.42%	0.48%
40	0.28%	0.28%	0.58%	0.17%	1.66%	0.58%
45	0.37%	0.37%	0.88%	0.44%	1.90%	0.69%
50	0.52%	0.52%	1.60%	1.02%	2.14%	0.82%
55	0.74%	0.74%	2.60%	1.78%	2.38%	0.97%
60	1.05%	1.05%	3.60%	2.64%	2.62%	1.23%
65	1.49%	1.49%	-	-	2.86%	1.72%
70	2.07%	2.07%	-	-	4.20%	2.59%
75	-	-	-	-	6.39%	4.18%

Marriage assumption

- 5.30 It is assumed that 80% of members and pensioners are married. Also, it is assumed that a male is, on average, 4 years older than his spouse. This is in line with the Alexander Forbes Best Estimate assumption for marriage, used where fund-specific marriage statistics are not readily available.

Solvency reserve basis

- 5.31 I have determined the level of the solvency reserve using the discontinuance matched approach as set out in Circular PF 117, issued by the Financial Services Board. PF 117 states that the combination of the liabilities calculated on a best estimate basis, together with the solvency reserve, "will result in the reporting of actuarial surplus on a basis consistent with international practice".
- 5.32 Although this fund is not subject to the Pension Funds Act (PFA) and Financial Services Conduct Authority (FSCA) circulars, the circular is considered appropriate for this fund and is in line with general actuarial practice as applied by actuaries in South Africa.
- 5.33 The assumptions that differ from my best estimate valuation assumptions are:
- Gross discount rate (actives): 9.20% (this is again the yield on 10 year fixed interest gilts adjusted for the reasonable cost of implementing and maintaining an investment strategy of partially matching such assets to the liabilities of the fund, i.e. 0.375%).
 - Gross discount rates (pensioners): This is the yield curve, as discussed in section 5.22, but adjusted for the reasonable cost of maintaining an investment strategy of matching such assets to the liabilities of the fund (0.5% for unmatched), but taking into account the current matching and associated reduced risks (0.25% for matched).
 - Post-retirement mortality: The fund specific mortality tables were again rated down by 1 year to allow for possible future mortality improvements.

6. VALUATION RESULTS

- 6.1 In order to determine the level of solvency of the fund, it is necessary to compare the total assets of the fund with the total liabilities. The fund is solvent when the value of the assets exceeds the value of the liabilities, i.e. a funding level of 100% or greater. The funding level is the ratio of the value of the assets to the value of the liabilities of the fund at the valuation date.

Value of liabilities

- 6.2 The present value of the actuarial liabilities of the fund in respect of members as at the valuation date is as follows:

	Total fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Active members	824	669
Pensioners	3 783	3 622
Contribution reserve	42	23
Solvency reserve		
- Actives	48	37
- Pensioners	234	221
Pension increase reserve*	194	244
Total liabilities	5 125	4 816

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

- 6.3 We have split the actuarial liabilities between the various sub-funds and these are set out below:

	SAA sub-fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Active members	329	292
Pensioners	969	941
Contribution reserve	20	13
Solvency reserve		
- Actives	20	17
- Pensioners	67	70
Pension increase reserve*	93	161
Total liabilities	1 498	1 494

	PRASA sub-fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Active members	45	41
Pensioners	425	397
Contribution reserve	2	1
Solvency reserve		
- Actives	3	3
- Pensioners	34	29
Pension increase reserve*	101	83
Total liabilities	610	554

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

	Transnet sub-fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Active members	450	336
Pensioners	2 389	2 284
Contribution reserve	20	9
Solvency reserve		
- Actives	25	17
- Pensioners	133	122
Total liabilities	3 017	2 768

Value of assets

6.4 For valuation purposes, the value of the assets is R9 163 million.

Contribution reserve

6.5 The contribution reserve as at the valuation date is determined as the difference between the required contribution rate under the Attained Age Method and the actual contribution rate paid to the fund, multiplied by the present value of all expected future salaries.

6.6 The values of the contribution reserves for the fund and sub-funds as at the valuation date are:

	R'million
SAA	13
PRASA	1
Transnet	9
Total	23

Value of solvency reserve

- 6.7 I recommend the trustees maintain a solvency reserve to afford protection against investment and mortality risk. This reserve is calculated as the difference between the fund's liabilities on the valuation basis and the liabilities on the solvency basis.
- 6.8 The recommended solvency reserves for the fund and sub-funds as at the valuation date amount to:

	R'million
SAA	87
PRASA	32
Transnet	139
Total	258

Pension increase reserve

- 6.9 The pension increase policy of the SAA sub-fund targets pension increases which would result in a post-retirement net discount rate of 5.5%.
- 6.10 The pension increase policy of the PRASA sub-fund targets pension increases of 75% of the increase in CPI.
- 6.11 Should these pension increases be granted in future, the value of liabilities will increase significantly. I, therefore, in terms of the rules of the fund, recommend a reserve be held equal to the increase in liabilities of R244 million.

Funding level

- 6.12 Comparing the value of the assets with the past service liabilities produces the following results:

	Total fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Market value of assets	9 311	9 163
Value of accrued liabilities	4 607	4 291
Surplus/(Deficit) before contingency reserves	4 704	4 872
Contribution reserve	42	23
Pension increase reserve*	194	244
Solvency reserve	282	258
Surplus/(Deficit)	4 186	4 347
Funding level	181.7%	190.3%

- 6.13 Comparing the value of the assets with the past service liabilities for the various sub-funds produced the following results:

	SAA sub-fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Market value of assets	2 037	1 949
Value of accrued liabilities	1 298	1 233
Surplus/(Deficit) before contingency reserves	739	716
Contribution reserve	20	13
Pension increase reserve*	93	161
Solvency reserve	87	87
Surplus/(Deficit)	539	455
Funding level	136.0%	130.5

	PRASA sub-fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Market value of assets	1 275	1 261
Value of accrued liabilities	470	438
Surplus/(Deficit) before contingency reserves	805	823
Contribution reserve	2	1
Pension increase reserve*	101	83
Solvency reserve	37	32
Surplus/(Deficit)	365	707
Funding level	209.0%	227.3%

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

	Transnet sub-fund	
	31 March 2018 (R'million)	31 March 2019 (R'million)
Market value of assets	5 999	5 953
Value of accrued liabilities	2 839	2 620
Surplus/(Deficit) before contingency reserves	3 130	3 333
Contribution reserve	20	9
Solvency reserve	158	139
Surplus/(Deficit)	2 982	3 185
Funding level	198.9%	215.1%

- 6.14 The fund's and all the sub-funds' assets exceed their accrued liabilities. As at the valuation date I am able to confirm that the fund and sub-funds are financially sound.

Required future contribution rate

- 6.15 The required future contribution rate to meet the costs of benefits accruing after the valuation date, per category of membership in the fund, is as follows:

	% of Pensionable Salaries			
	All members	Transport Pension Fund		
		Footplate	Flight Deck	Other
Current contributions				
- Members*	8.007%	8.500%	11.000%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	19.032%	19.525%	22.025%	18.525%
Required contribution rate				
- Future service (based on Rules)	23.566%	27.458%	31.935%	22.057%
- Addition for benefit improvements	1.402%	0.547%	4.023%	1.006%
- Contribution reserve subsidy	<u>-5.937%</u>	<u>-8.480%</u>	<u>-13.933%</u>	<u>-4.538%</u>
	19.032%	19.525%	22.025%	18.525%

* Average contribution of all members of the Transport Pension Fund

- 6.16 The required future contribution rates to meet the costs of benefits accruing after the valuation date, per category of membership in the various sub-funds, are as follows:

	% of Pensionable Salaries		
	All members	SAA sub-fund	
		Flight Deck	Other
Current contributions			
- Members	8.856%	11.000%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	19.881%	22.025%	18.525%
Required contribution rate			
- Future service (based on Rules)	25.853%	31.935%	22.004%
- Addition for benefit improvements	3.511%	4.023%	3.187%
- Contribution reserve subsidy	<u>-9.483%</u>	<u>-13.933%</u>	<u>-6.667%</u>
	19.881%	22.025%	18.525%

	% of Pensionable Salaries		
	PRASA sub-fund		
	All members	Footplate	Other
Current contributions			
- Members	7.572%	8.500%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	18.597%	19.525%	18.525%
Required contribution rate			
- Future service (based on Rules)	22.779%	29.284%	22.276%
- Addition for benefit improvements	3.976%	5.467%	3.861%
- Contribution reserve subsidy	<u>-8.159%</u>	<u>-15.227%</u>	<u>-7.612%</u>
	18.597%	19.525%	18.525%

	% of Pensionable Salaries		
	Transnet sub-fund		
	All members	Footplate	Other
Current contributions			
- Members	7.546%	8.500%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	18.571%	19.525%	18.525%
Required contribution rate			
- Future service (based on Rules)	22.299%	27.255%	22.061%
- Addition for benefit improvements	0.000%	0.000%	0.000%
- Contribution reserve subsidy	<u>-3.728%</u>	<u>-7.730%</u>	<u>-3.536%</u>
	18.571%	19.525%	18.525%

Comment in terms of APN 205

- 6.17 Whilst the value of the liabilities is based on best estimate assumptions, where relevant, and the solvency and other contingency reserves established by the trustees on my advice allow for some fluctuations in asset values and / or unexpected changes in liabilities, there is no guarantee that these reserves will prove sufficient in practice. Conversely, it is possible that the reserves may prove to be more than sufficient.
- 6.18 If the reserves prove to be insufficient, management action will be required to rectify the position. The uncertainty of the adequacy or otherwise of the reserves held is unavoidable and the actual outcome can only be determined when the fund ceases to have any further liabilities.

7. SUMMARY AND RECOMMENDATIONS

- 7.1 The market value of assets as at the valuation date is R9 163 million compared to the accrued liabilities of R4 291 million.
- 7.2 The actuarial valuation of the Transport Pension Fund and associated sub-funds revealed the following:

	SAA (R'million)	PRASA (R'million)	Transnet (R'million)	Total (R'million)
Assets	1 949	1 261	5 953	9 163
Accrued liabilities	1 233	438	2 620	4 291
Contribution reserve	13	1	9	23
Solvency reserve	87	32	139	258
Pension increase reserve	161	83	-	244
Surplus	455	707	3 185	4 347
Funding level	130.5%	227.3%	215.1%	190.3%

- 7.3 The fund's and sub-funds' assets exceed their accrued liabilities. As at the valuation date I am able to confirm that the fund and sub-funds are financially sound.
- 7.4 I am satisfied with the appropriateness of the matching of the fund's assets and liabilities (see section 4.10).



A R Pienaar

Fellow of the Actuarial Society of South Africa
and the Fellow of the Institute of Actuaries
in my capacity as the valuator of the fund
and as an employee of
Alexander Forbes Financial Services (Pty) Ltd

For the purposes of professional regulation the primary professional regulator of the signatories to this report is the Actuarial Society of South Africa.

August 2019

APPENDIX 1: SUMMARY OF BENEFITS AND CONTRIBUTIONS

A summary of the main benefits is given below. Full details are contained in the registered rules of the fund.

The Rules provide for special benefits on specific contingencies for particular categories of members. These have not been summarised here. Only the generic benefits have been shown.

Contributions

Member Contributions

Members contribute a percentage of their pensionable salary to the fund, depending on their membership category, as set out below:

Membership Category	% of Pensionable Salaries
Flight Deck Personnel	11.0% up to age 53 years, reducing by 0.2% per year to 10.4% at age 56, then 10% from age 57 onwards
Footplate Personnel	8.5%
Other Personnel	7.5%

Employers' Contributions

The employers currently contribute to the fund at a rate of 11.025% of pensionable salaries in respect of all members. In addition, the employers cover the administration expenses of the fund.

Definitions

Average Pensionable Salary

This is the average pensionable salary of the member in the last year of pensionable service.

Retirement Dates

For the different categories of membership, the minimum and normal retirement dates are the month in which the following age is attained:

Membership Category	Retirement Age (years)	
	Minimum	Normal
Flight Deck Personnel	50	63
Footplate Personnel	55	58
Other Personnel	60	63

Pensionable Service

This is the completed service in years, months and days since joining the fund, during which contributions were received. Pensionable service includes any periods of linking, antedated and casual service for which contributions were made, as defined in the rules of the fund, as well as any unpaid leave for which the member elected to contribute.

Accrual Factor

For the different categories of membership, the Accrual Factor is determined as follows as at the minimum and normal retirement dates:

Membership Category	Retirement Age (years)	
	Minimum	Normal
Flight Deck Personnel	1/50 th	1/41 st
Footplate Personnel	1/55 th	1/49 th
Other Personnel	1/60 th	1/54 th

Gratuity Factor

For the different categories of membership, the Gratuity Factor is determined as follows (irrespective of the date of retirement):

Membership Category	Gratuity factor
Flight Deck Personnel	14.50
Footplate Personnel	13.50
Other Personnel	12.00

Retirement Benefits

A member is entitled to the following benefits on attaining the minimum retirement age:

- An annual pension equal to:
 $Average\ Pensionable\ Salary \times Pensionable\ Service \times Accrual\ Factor \quad (1)$
 Plus
- A gratuity equal to:
 $1/3^{rd} \times (1) \times Gratuity\ Factor$

The rules do not permit late retirement after the attainment of the age limit.

Ill-health Retirement

A member who retires due to ill-health is entitled to his actuarial value.

Death In Service Benefits

On the death of an active member, the following benefits are payable:

- an annual dependants' pension equal to 70% of the annual pension that the member would have been entitled to had he retired at the date of death, but with Pensionable Service increased by the period from the date of death until the normal retirement date; plus
- the gratuity that the member would have been entitled to had he retired at the date of death but with Pensionable Service subject to a minimum of 10 years.

Where the member dies before reaching the minimum retirement date, the Accrual Factor as at the minimum retirement date applies for the above calculations.

- If the member has no dependants, the benefit on voluntary resignation is paid to the nominees or estate.

Death in Retirement

On the death of a pensioner, a dependants' pension equal to 70% of the deceased pensioner's pension at the date of death is payable.

Where the pensioner dies before attaining the normal retirement date, the dependants' pension is increased by the following ratio:

$$\frac{\text{(Pensionable Service plus the period from the date of death to the normal retirement date)}}{\text{(Pensionable Service)}}$$

Pension increases

The fund's rules provide for a guaranteed pension increase of 2% per annum which is implemented on the commencement anniversary of the pension.

The fund's rules makes allowance for discretionary pension increases in addition to the guaranteed 2% per annum.

The pension increase policy of the PRASA sub-fund targets pension increases of 75% of the increase in CPI. The pension increase policy of the SAA sub-fund targets pension increases that can be afforded based on investment returns over and above a post-retirement net discount rate of 5.5%. For the sake of actuarial prudence this has been included as part of the fund's contingency reserves.

The Transnet sub-fund's rules makes allowance for the payment of bonus pensions in addition to the guaranteed 2% per annum pension increase.

Resignation Benefits

On resignation, the fund grants members their actuarial value.

APPENDIX 2: MEMBER RECONCILIATION**Active members**

	Total fund	
Active 31 March 2018	244	
Adjustment*	8	
Revised		252
Exits		(44)
- Death	(4)	
- Ill-health	(1)	
- Withdrawals	(3)	
- Retirement	(30)	
- Transfers out	(6)	
Active 31 March 2019		208

* The adjustment figure is made up of members who were excluded from the previous valuation data, but are in the current valuation data (either as an active member or an exit) as well as members who were in the previous valuation data but are not in the current valuation data or exit data.

Pensioners**TOTAL**

	Total fund	
Pensioners 31 March 2018	5 506	
Adjustment	=	
Revised		5 506
New pensioners		126
Exits		(256)
Pensioners 31 March 2019		5 376

FORMER ACTIVE MEMBERS

	Total fund	
Pensioners 31 March 2018	2 955	
Adjustment	=	
Revised		2 955
New pensioners		28
Exits		(136)
Pensioners 31 March 2019		2 847

Dependants**SPOUSES**

	Total fund	
Pensioners 31 March 2018	2 354	
Adjustment	=	
Revised		2 354
New pensioners		97
Exits		(55)
Pensioners 31 March 2019		2 396

CHILDREN

	Total fund	
Pensioners 31 March 2018	197	
Adjustment	=	
Revised		197
New pensioners		1
Exits		(65)
Pensioners 31 March 2019		133

APPENDIX 3: INDIVIDUAL MEMBERSHIP INFORMATION

Active members

MALES

Age Band	Number	Totals		Average per member		
		Salary (R)	Accrued Liability (R)	Salary (R)	Accrued Liability (R)	Service
0 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-
35 - 39	1	379 382	1 376 120	379 382	1 376 120	19.83
40 - 44	8	3 761 007	15 409 139	470 126	1 926 142	21.96
45 - 49	11	4 659 379	20 551 194	423 580	1 868 290	23.23
50 - 54	29	12 711 310	87 412 707	438 321	3 014 231	29.18
55 - 59	64	22 796 693	200 396 539	356 198	3 131 196	34.94
60+	77	28 917 928	309 168 738	375 558	4 015 178	38.06
Total	190	73 225 999	634 314 437	385 398	3 338 497	34.02

FEMALES

Age Band	Number	Totals		Average per member		
		Salary (R)	Accrued Liability (R)	Salary (R)	Accrued Liability (R)	Service
0 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-
35 - 39	1	232 863	832 672	232 863	832 672	18.92
40 - 44	3	1 042 428	4 053 752	347 476	1 351 251	20.42
45 - 49	4	1 437 508	7 517 950	359 377	1 879 488	26.02
50 - 54	4	939 261	5 502 710	234 815	1 375 678	28.71
55 - 59	4	1 509 562	11 076 888	377 391	2 769 222	32.81
60+	2	601 005	5 590 934	300 503	2 795 467	38.58
Total	18	5 762 627	34 574 906	320 146	1 920 828	28.19

Pensioners

FORMER ACTIVE MEMBERS

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 54	28	1 256 352	44 870	1	30 636	30 636
55 - 59	61	4 901 220	80 348	7	442 008	63 144
60 - 64	257	41 842 416	162 811	9	893 052	99 228
65 - 69	706	114 283 692	161 875	19	2 420 352	127 387
70 - 74	1 049	136 269 828	129 905	20	2 537 592	126 880
75 - 79	614	37 061 988	60 362	19	990 180	52 115
80 - 84	55	3 119 196	56 713	1	53 652	53 652
85+	1	16 812	16 812	-	-	-
Total	2 771	338 751 504	122 246	76	7 367 472	93 940

Dependants

SPOUSES

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 54	-	-	-	351	10 747 908	30 621
55 - 59	3	172 236	57 412	380	11 626 932	30 597
60 - 64	2	130 680	65 340	489	15 544 176	33 143
65 - 69	-	-	-	627	20 382 144	32 507
70 - 74	5	236 628	47 326	368	12 101 148	32 884
75 - 79	1	36 228	36 228	155	4 423 932	28 541
80 - 84	-	-	-	26	533 280	20 511
85+	-	-	-	9	149 544	16 616
Total	11	575 772	52 343	2 385	75 509 064	31 560

CHILDREN

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 4	-	-	-	-	-	-
5 - 9	3	50 100	16 700	1	9 576	9 576
10 - 14	17	174 264	10 251	9	136 788	15 199
15 - 19	37	275 880	7 456	44	299 052	6 797
20+	13	111 024	8 540	9	87 600	9 733
Total	70	611 238	8 732	63	533 016	8 431

APPENDIX 4: ANALYSIS OF CHANGE IN FINANCIAL POSITION

The valuation at 31 March 2019 disclosed a surplus in assets of approximately R4 347 million after taking into account the recommended reserves. The previous valuation at 31 March 2018 showed a surplus of some R4 186 million on the market value of assets.

The factors that led to a change of approximately R161 million have been analysed according to source and the results of this analysis are given in the table that follows:

Item	R'million
Valuation Surplus/(Deficit) as at 31 March 2018	4 186
Interest on valuation surplus/(deficit)	360
Investment return	(350)
Salary/Earnings experience	(7)
Pension increases	(37)
Expense deficit	(3)
Ad hoc bonuses	(96)
Change in actuarial reserve	7
Change of basis	265
Other income	1
Miscellaneous	21
Valuation Surplus/(Deficit) as at 31 March 2019	4 347

The individual items are discussed in the following paragraphs.

Interest on valuation surplus/(deficit)

Interest at the previous period's assumed valuation rate on the previous surplus produced a profit of R360 million over the inter-valuation period.

Investment return

The internal rate of return achieved within the fund (approximately 6.1%) was lower than that anticipated on the previous valuation basis of 8.62% for active members and an effective 8.62% for pensioners. This resulted in an investment strain of R350 million over the inter-valuation period.

Salary/Earnings experience

The increase in salaries over the year (approximately 8.15%) was higher than that anticipated on the previous valuation basis of 7.20% and an allowance for merit increases. This resulted in a salary strain of R7 million over the inter-valuation period.

Pension increases

The overall increase in pensions over the year (approximately 2.95%) was higher than that anticipated on the previous valuation basis of 2%. This resulted in a pension strain of R37 million over the inter-valuation period.

Expense deficit

Over the valuation period expenses were incurred which related to actuarial fees, audit fees and trading and consulting fees, as per the financial statements of the fund. All other expenses were met by the employers. This resulted in an expense strain of R3 million.

Ad hoc bonuses

During the inter-valuation period ad hoc bonus pensions were paid to pensioners of the fund. This resulted in a strain of R96 million.

Change in actuarial reserve

The change in the actuarial reserve was higher than that assumed on the previous valuation basis of 8.62%. This resulted in a profit of R7 million.

Change of basis

In the previous valuation a discount rate of 8.62% was assumed for active members, with annual salary increases based on a general percentage increase of 7.20% per annum and a merit scale. For pensioners the yield curve was used to discount future cashflows. These assumptions have since been updated. A discount rate of 9.57% is now assumed for active members, while annual salary increases are based on a general percentage increase of 7.04% and a merit scale. For pensioners, the yield curve has been updated. This change in basis, along with the subsequent change in solvency reserves, has resulted in a profit of R265 million.

Other income

A tax credit related to the class action against the fund was realised during the valuation period relating to the previous period. This resulted in a profit of R1 million over the inter-valuation period.

Miscellaneous

There was a miscellaneous profit of R21 million arising from various sources, none of which are individually significant.

APPENDIX 5: SALARY INCREASE SCALE

Age	Merit Increase	Age	Merit increase
20	13.5%	43	2.3%
21	12.6%	44	2.1%
22	11.7%	45	1.9%
23	10.8%	46	1.7%
24	9.9%	47	1.5%
25	9.0%	48	1.5%
26	8.3%	49	1.5%
27	7.6%	50	1.5%
28	6.9%	51	1.5%
29	6.2%	52	1.5%
30	5.5%	53	1.5%
31	5.0%	54	1.5%
32	4.5%	55	1.5%
33	4.3%	56	1.5%
34	4.1%	57	1.5%
35	3.9%	58	1.5%
36	3.7%	59	1.5%
37	3.5%	60	1.5%
38	3.3%	61	1.5%
39	3.1%	62	1.5%
40	2.9%	63	1.5%
41	2.7%	64	1.5%
42	2.5%	65	1.5%

APPENDIX 6: DEMOGRAPHIC ASSUMPTIONS

Age	Pre Ret Mortality		Ill Health		Post Ret Mortality	
	Male	Female	Male	Female	Male	Female
25	0.23%	0.23%	0.06%	-	0.93%	0.31%
26	0.22%	0.22%	0.08%	-	0.98%	0.32%
27	0.21%	0.21%	0.10%	-	1.03%	0.34%
28	0.21%	0.21%	0.12%	0.01%	1.08%	0.35%
29	0.21%	0.21%	0.14%	0.02%	1.13%	0.37%
30	0.20%	0.20%	0.16%	0.03%	1.17%	0.39%
31	0.21%	0.21%	0.18%	0.04%	1.22%	0.41%
32	0.21%	0.21%	0.20%	0.05%	1.27%	0.42%
33	0.21%	0.21%	0.24%	0.06%	1.32%	0.44%
34	0.22%	0.22%	0.28%	0.08%	1.37%	0.46%
35	0.23%	0.23%	0.32%	0.09%	1.42%	0.48%
36	0.23%	0.23%	0.36%	0.11%	1.46%	0.50%
37	0.24%	0.24%	0.40%	0.12%	1.51%	0.52%
38	0.26%	0.26%	0.46%	0.14%	1.56%	0.54%
39	0.27%	0.27%	0.52%	0.15%	1.61%	0.56%
40	0.28%	0.28%	0.58%	0.17%	1.66%	0.58%
41	0.29%	0.29%	0.64%	0.18%	1.71%	0.60%
42	0.31%	0.31%	0.70%	0.20%	1.75%	0.63%
43	0.33%	0.33%	0.76%	0.28%	1.80%	0.65%
44	0.35%	0.35%	0.82%	0.36%	1.85%	0.67%
45	0.37%	0.37%	0.88%	0.44%	1.90%	0.69%
46	0.39%	0.39%	0.94%	0.52%	1.95%	0.72%
47	0.42%	0.42%	1.00%	0.60%	1.99%	0.74%
48	0.45%	0.45%	1.20%	0.74%	2.04%	0.77%
49	0.48%	0.48%	1.40%	0.88%	2.09%	0.79%
50	0.52%	0.52%	1.60%	1.02%	2.14%	0.82%
51	0.56%	0.56%	1.80%	1.16%	2.19%	0.85%
52	0.60%	0.60%	2.00%	1.30%	2.24%	0.87%
53	0.64%	0.64%	2.20%	1.46%	2.28%	0.90%
54	0.69%	0.69%	2.40%	1.62%	2.33%	0.93%
55	0.74%	0.74%	2.60%	1.78%	2.38%	0.97%
56	0.79%	0.79%	2.80%	1.94%	2.43%	1.02%
57	0.85%	0.85%	3.00%	2.10%	2.48%	1.06%
58	0.91%	0.91%	3.20%	2.28%	2.52%	1.11%
59	0.98%	0.98%	3.40%	2.46%	2.57%	1.15%
60	1.05%	1.05%	3.60%	2.64%	2.62%	1.23%

APR 2019

61	1.13%	1.13%	3.80%	2.82%	2.67%	1.32%
62	1.21%	1.21%	4.00%	3.00%	2.72%	1.40%
63	1.30%	1.30%	4.20%	3.18%	2.77%	1.49%
64	1.39%	1.39%	4.40%	3.36%	2.81%	1.57%
65	1.49%	1.49%	-	-	2.86%	1.72%
66	1.60%	1.60%	-	-	3.10%	1.87%
67	1.71%	1.71%	-	-	3.35%	2.02%
68	1.83%	1.83%	-	-	3.59%	2.17%
69	1.95%	1.95%	-	-	3.83%	2.32%
70	2.07%	2.07%	-	-	4.20%	2.59%
71	-	-	-	-	4.57%	2.87%
72	-	-	-	-	4.95%	3.14%
73	-	-	-	-	5.32%	3.42%
74	-	-	-	-	5.69%	3.69%
75	-	-	-	-	6.39%	4.18%



Transport Pension Fund: Transnet sub-fund

Actuarial valuation as at 31 March 2019

Prepared by Alexander Forbes Financial Services

August 2019


ALEXANDERFORBES

AW

AFSA

Actuarial valuation of the Transport Pension Fund: Transnet sub-fund as at 31 March 2019

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EXECUTIVE SUMMARY

Present value of liabilities

1. The present value of the actuarial liabilities of the fund as at the current and previous valuation dates were as follows:

	31 March 2018 (R'million)	31 March 2019 (R'million)
Active members	450	336
- Past service liability	<u>450</u>	<u>336</u>
Pensioners	2 389	2 284
- Pensioners	<u>2 389</u>	<u>2 284</u>
Contingency reserves	178	148
- Solvency reserve		
- Actives	25	17
- Pensioners	133	122
- Contribution reserve	<u>20</u>	<u>9</u>
Total Liabilities	3 017	2 768

Summary of results

2. Comparing the value of the fund's assets with the total past service liabilities shows the following results:

	31 March 2018 (R'million)	31 March 2019 (R'million)
Market value of assets	5 999	5 953
Value of accrued liabilities	2 839	2 620
Surplus/(Deficit) before contingency reserves	3 160	3 333
Contribution reserve	20	9
Solvency reserve	158	139
Surplus/(Deficit)	2 982	3 185
Funding level	198.8%	215.1%

Conclusion

3. I confirm that, based on the information available, the fund was in a sound financial condition as at the valuation date, i.e. the assets of the Transport Pension Fund: Transnet sub-fund exceeded the fund's actuarial liabilities and recommended contingency reserves as at the valuation date.

1. INTRODUCTION

I am pleased to present to the trustees of the Transport Pension Fund: Transnet sub-fund (*"the fund"*) this actuarial valuation as at 31 March 2019 (*"the valuation date"*). This report sets out the results of the actuarial valuation of the fund as at the valuation date and includes an analysis of the financial progress of the fund since 31 March 2018 (*"the previous valuation date"*). The period between the previous valuation date and the current valuation date is referred to hereinafter as the valuation period.

Registration and operation

- 1.1 The Transnet Pension Fund is a defined benefit pension fund established in terms of the Transnet Pension Fund Act 62 of 1990 (the "Act"). The fund has been closed to new members since 1 December 2000. The Transnet Pension Fund Amendment Act, promulgated in the second half of 2007, changed the name of the fund with effect from 11 November 2005 to the Transport Pension Fund.
- 1.2 The Transnet Pension Fund Amendment Act restructured the Transport Pension Fund into a multi-employer pension fund. From the date this Act came into effect, all existing members, pensioners, dependent pensioners, liabilities, assets, rights and obligations of the Transport Pension Fund are attributable to a sub-fund, with Transnet as the principal employer.
- 1.3 The amended rules of the fund established a sub-fund in the name of South African Airways (Pty) Ltd ("SAA") from 1 April 2006. A further sub-fund in the name of the Passenger Rail Agency of South Africa ("PRASA") was established with effect from 1 May 2006. The third sub-fund currently in existence is the Transnet sub-fund ("Transnet").

Objectives

- 1.4 This actuarial valuation has been carried out as at the valuation date with the following objectives:
 - to assess the **financial soundness** of the fund, by comparing the value of liabilities accrued to the valuation date with the value of the assets held as at that date;
 - to investigate and report on **actual experience of the fund** since the previous valuation;
 - to review the **assumptions used** in light of actual experience and industry developments;
 - to assess the necessity for, and quantum of, any **contingency reserves**;
 - to assess the **suitability of the assets** in relation to the liabilities of the fund; and
 - to meet **statutory requirements**.

Valuation data

- 1.5 In compiling this report, I have relied upon the accuracy and completeness of information made available to me by the administrators, Momentum Retirement Administrators, and external parties. Except where expressly stated in the report, I have not independently verified the accuracy of the facts or the basis of the information supplied to me.
- 1.6 The results of the valuation depend on the accuracy of:
 - the membership data;
 - the information on the assets, as supplied by the relevant sources; and
 - the draft audited financial statements for the valuation period.

- 1.7 Reasonability checks have been performed on the above and I am satisfied with the general accuracy and completeness of the data provided and with its suitability for purposes of this actuarial valuation. Further information regarding the reasonability checks performed is set out in section 3.

Capacity, brief and professional guidance

- 1.8 This report has been prepared by Alexander Forbes Financial Services (Pty) Ltd ("*Alexander Forbes*") solely for the benefit of trustees of the Transport Pension Fund and the Minister of Public Enterprises, and is prepared in accordance with the instructions given by the trustees of the fund. The trustees are charged by the Transnet Pension Fund Act 62 of 1990 ("the Act") to investigate the financial condition of the fund and report thereon to the Minister of Public Enterprises.
- 1.9 In terms of General Rule 3.14.3 of the fund, the fund shall be valued by the Actuary at intervals not exceeding three years, to determine whether the fund is in a position to pay the benefits provided for in the Rules. The current practice is to perform annual actuarial valuations of the fund. The trustees appointed Alexander Forbes Financial Services to perform this valuation.
- 1.10 The previous valuation of the fund was carried out as at the previous valuation date by Alexander Forbes Financial Services and, at that date, the fund was in a sound financial position.
- 1.11 Throughout this report any values that have been determined are, except where otherwise stated, in accordance with our view of the most probable future experience. Our specific assumptions and other reliances and limitations are documented in the following sections and supporting appendices. These sections and appendices are an integral part of this report.
- 1.12 This report complies with the relevant Guidance Notes of the UK Actuarial Profession and the relevant Professional Guidance Notes of the Actuarial Society of South Africa.
- 1.13 Alexander Forbes does not accept any liability to any persons, other than the trustees, in connection with this report or its related enquiries. I accept no liability in respect of any matter outside the scope and limitations of this report and purpose for which it is prepared.
- 1.14 This report may not be disclosed and / or relied upon in whole or in part to / by any person other than the trustees or quoted in any other context without prior written consent. Any person, other than the trustees to whom this report is addressed, who receives a draft or copy of this report (or any part of it) or discusses it (or any part of it) or any related matter with me or any third party, does so on the basis that they acknowledge the source of this report and accept that they may not rely on it for any purpose whatsoever and that I owe a duty of care only to the trustees. Any portion of this report, if reproduced or transmitted, must include a reference to the full report and to this clause.
- 1.15 This report has been prepared as at the valuation date and covers the valuation period given above. Unless specifically stated to the contrary, it does not take into account any events subsequent to the valuation date.

2. DEVELOPMENTS SINCE THE PREVIOUS VALUATION DATE

Pension increases

- 2.1 Pensions in course of payment are increased by 2% per annum in terms of the rules of the Transnet sub-fund.

Bonus pensions

- 2.2 The rules of the fund allow for bonus pensions to be paid, subject to an assessment of affordability by the fund and its actuaries, and the approval of the employer.
- 2.3 A bonus payment equal to 10% of annual pensions was granted to all pensioners of the fund in April 2018 and we made allowance for this in the previous valuation by adjusting the value of assets. Bonus payments equal to 15% of annual pensions were granted to all pensioners of the fund in October 2018 as well as in December 2018.

Rule amendments

- 2.4 There were no rule amendments during the valuation period that could impact on the financial condition of the fund.

Administration and actuarial services

- 2.5 The fund was administered by Momentum Retirement Administrators during the valuation period.
- 2.6 Alexander Forbes are the appointed actuaries to the fund.

3. MEMBER DATA

- 3.1 -The valuation of the fund at the valuation date was based on the membership detailed below. A complete data requirement specification for the fund was prepared by Alexander Forbes Financial Services and discussions were held with the administrators to assist in ensuring the data requirements were met.
- 3.2 Further statistics, including a reconciliation of the current membership with that present at the previous valuation, are provided in appendix 2 and appendix 3.
- 3.3 The following tables summarise the data:

Active members	Transnet sub-fund		Total fund
	31 March 2018	31 March 2019	31 March 2019
Number of contributing members	168	137	208
Total annual pensionable salary (R'000)	51 733	43 442	78 989
Average annual pensionable salary (R)	307 935	317 095	379 755
Average age (salary weighted)	55.7	55.7	56.4
Average service (salary weighted)	34.9	34.6	34.8

Pensioners	Transnet sub-fund		Total fund
	31 March 2018	31 March 2019	31 March 2019
Number of pensioners	4 316	4 214	5 376
Total annual pension (R'000)	259 848	267 984	423 348
Average annual pension (R)	60 206	63 594	78 748
Average age (pension weighted)	67.9	68.7	68.7

Data checks

- 3.4 The following paragraphs set out the data received for the valuation and the reasonability and other checks performed on this data.
- 3.5 Electronic data was supplied in respect of the following groups:
- Pensioners;
 - Active members; and
 - Exits.
- 3.6 The results of the valuation are dependent on the accuracy and completeness of the data supplied. Any significant changes to the data would result in potentially significant changes in the valuation results.

Checks performed

- 3.7 A reconciliation of the valuation data with the financial statements has been attempted and a number of reasonability tests to verify the correctness of the data have been performed.
- 3.8 For each of the above categories of membership checks have been done for missing dates of birth, dates of commencement of pension, gender and pension amounts. Checks have also been carried out to ensure that there are no duplicate records contained within a particular group and that no members appear in more than one group.
- 3.9 The following reasonability checks have been performed for active members:
- Date feasibility;
 - Dates are in logical order;
 - Ages are in reasonable ranges;
 - Annual pensionable salaries are in reasonable ranges;
 - Consistency of salary weighted age and service over the valuation period;
 - Annual pensionable salary increases are reasonable.
- 3.10 The following reasonability checks have been performed for pensioners:
- Date feasibility;
 - Dates are in logical order;
 - Ages are in reasonable ranges;
 - Period on pension is in reasonable range;
 - Annual pensions are in reasonable ranges;
 - Consistency of average age and pension weighted average age over the valuation period;
 - Annual pension increases are reasonable;
 - The annual pensions paid, as shown in the financial statements, seem in line with the average pension from the data.

Data supplied and data concerns

- 3.11 After performing the data checks described above, a number of queries were sent to Momentum Retirement Administrators where omissions or inconsistencies in the data were identified. The responses received from the administrators resulted in the records of some members and pensioners being either updated or deleted.
- 3.12 Given the checks performed on the data and the responses to the queries raised, the data on which the valuation has been based appears to be reasonable for the purposes of this valuation.

4. ASSETS

- 4.1 This section sets out the value placed upon the fund's assets. In order to ensure consistency with the actuarial value placed on the liabilities of the fund, which follow a market value basis approach as set out in the following section of this report, we have used the market value of assets as reported in the annual financial statements.

Investment strategy

- 4.2 The fund has a detailed investment strategy document and the trustees and fund's administrators undertake regular checks to ensure that the fund's asset composition complies with the investment guidelines set out in the investment strategy document.

Revenue statement

- 4.3 A consolidated revenue and expenditure account for the period 1 April 2018 to 31 March 2019 was provided based on draft financial statements.
- 4.4 A summary of the revenue and expenditure account for the total fund is as follows:

	Transnet sub-fund		Total fund
	R'000	R'000	R'000
Fund as at 1 April 2018		5 998 540	9 310 771
Revenue and appreciation		345 664	448 463
Contributions received and accrued	9 293		
Net investment income	335 109		
Other income (Lumpsum & Annuities written back)	1 262		
Expenditure		(390 823)	(595 636)
Administration expenses	(1 139)		
Benefit payments (including April 2018 bonus)	(380 753)		
Transfers out	(8 931)		
Fund as at 31 March 2019		5 953 381	9 133 598

Fund assets

- 4.5 The composition of the fund's assets at market value as reported in the annual financial statements produced by the fund's administrators is set out in the following table:

	Market Value R'000	Allocation %
Foreign		
Cash and deposits	38 980	0.56
Debt instruments	2 861	0.04
Foreign listed equities	1 282 438	18.41
Listed property shares	1 158	0.02
Collective investment schemes	2 061	0.03
Local		
Cash and deposits	545 911	7.84
Debt instruments	2 881 896	41.38
Equities (listed, unlisted, private)	1 415 614	20.32
Listed property shares	386 290	5.55
Commodities	6 352	0.09
Private equity funds	21 425	0.31
Collective investment schemes	380 030	5.45
Total investments	6 935 016	100.0
Plus: Current assets	71 011	
Less: Current liabilities	(1 017 109)	
Less: Non-current liabilities	(4 409)	
Less: Actuarial reserves	(61 128)	
Total assets for valuation purposes	5 953 381	

* A provision of R3 543 000 has been included to cater for expected future payments in respect of class actions against the fund.

Valuation of assets

- 4.6 For purposes of this actuarial valuation, the assets have been taken into account at 100% of fair (or market) value and no investment margin has been set aside. Therefore, the assets of the fund have been taken into account at R5 953 million as at the valuation date. This is consistent with asset valuation methodology applied to the valuation of the fund's liabilities.

Fund returns

- 4.7 The assets of the fund earned approximately 6.1% per annum during the valuation period, as provided by the fund's asset consultants. This investment return is net of investment management fees.
- 4.8 This return should be considered in the context of the 8.62% per annum assumed for active members and the effective 8.62% per annum assumed for pensioners in the previous actuarial valuation report.

Appropriateness of assets

4.9 In May 2018 the trustees agreed to a revised asset strategy to better match the assets to the nature of the fund's liabilities. The new strategic asset allocations is as follows:

	Allocation
	%
Local equities	22.0
Local cash and alternatives	5.0
Cash flow matching	40.0
Local property	8.0
Local credit	3.0
Global equities	22.0
	100.0

4.10 I am satisfied with the appropriateness of the matching of the fund's assets and liabilities.




5. VALUATION METHOD AND BASIS

The valuation has been conducted on the basis of the benefits and other provisions of the rules of the fund as at the valuation date.

Valuation method

- 5.1 The fund has been closed to new members since 1 December 2000. The actuarial valuations of the fund carried out since 31 March 2001 have therefore been carried out using a valuation method known as the Attained Age Method. This method allows for the fact that the fund will effectively age over time as the current membership increases in age.

Accrued liabilities

- 5.2 The accrued liability for active members is derived as the present value of their expected future benefit entitlements based on service up to the valuation date and projected salaries to the date of benefit entitlement, using specific actuarial assumptions for the future financial and demographic experience of the fund.
- 5.3 The accrued liability for pensioners is calculated as the present value of their expected future pension payments using specific actuarial assumptions for the future financial and demographic experience of the fund. Provision is made for the future pension increases of 2% per annum, as specified in the rules of the fund.

Future service contribution rate

- 5.4 Under the Attained Age Method, the present value of benefits that will accrue to active members in respect of all future service following the valuation date, is calculated and converted into a contribution rate by dividing this by the present value of projected salaries for all members over the same period. This gives the required future service contribution rate before allowing for any subsidy from the contribution reserve.
- 5.5 There is no future service contribution rate in respect of pensioners.

Contribution reserve

- 5.6 The Attained Age Method of funding calculates a future service contribution rate, which, if paid throughout a member's working lifetime, is expected to fund the member's final benefit at retirement. The true cost of benefit accrual is, however, an increasing function of age and therefore, under the Attained Age Method, more is paid into the fund in the initial years than is required to meet the value of the benefit accruing in those early years. The excess contributions in the initial years build up as a reserve, the contribution reserve.
- 5.7 In later years, this reserve is utilised when the Attained Age Method contribution rate is lower than the value of benefits accruing. This ensures a stable contribution rate, if all other valuation assumptions are met.
- 5.8 The recommended balance in the contribution reserve as at the valuation date is determined as the difference between the required contribution rate under the Attained Age Method and the actual contribution rate paid to the fund, multiplied by the present value of all expected future salaries.

Risk benefits

- 5.9 The death and ill-health benefits provided by the fund are currently self-insured within the fund and the valuation method and assumptions fully provide for the expected costs of these benefits.

Expenses

- 5.10 The employer pays the fund's administration expenses directly and no allowance for administration expenses has been made in the valuation.
- 5.11 Investment expenses and taxes are allowed for implicitly by assuming that they are offset against investment proceeds. The valuation interest rate used in this report is therefore assumed to be net of investment fees and taxes.

Assets

- 5.12 We have used the market value of assets for valuation purposes.

Principal actuarial assumptions

- 5.13 In setting the assumptions to be used for estimating the liabilities of the fund, current actuarial principles and the Alexander Forbes best practice "house view" have been followed.
- 5.14 Current practice is for these assumptions to be "best estimate" assumptions. Therefore, no deliberate margins for conservatism would be included in the assumptions; and the assumptions would generally be motivated by reference to the experience of the fund, statistical evidence and yields on government or corporate bonds.
- 5.15 In addition, the assumptions should be reasonable both independently and combined. The assumptions used to value the liabilities must be consistent with those used to value the assets.
- 5.16 The actuarial assumptions used in the valuation of the liabilities are detailed below:

Active members**Gross discount rate**

- 5.17 The gross discount rate is determined with regard to the yield on 10 year Government bonds on the valuation date, reflecting the average duration of the liabilities. This implies a gross discount rate of 9.57%. The previous year's gross discount rate was set at 8.62%.
- 5.18 No provision for asset management fees has been made since the out performance over the benchmark produced by active asset management should exceed the asset management fee.

Inflation

- 5.19 A future inflation assumption has been estimated by subtracting the yield on 10 year inflation-linked bonds from a similar duration fixed coupon bond yield.
- 5.20 Expected inflation as at the valuation date is therefore set at 6.04% p.a. $(1.0957 / 1.0333 - 1)$, compared to 6.20% at the last valuation.

Salary increases

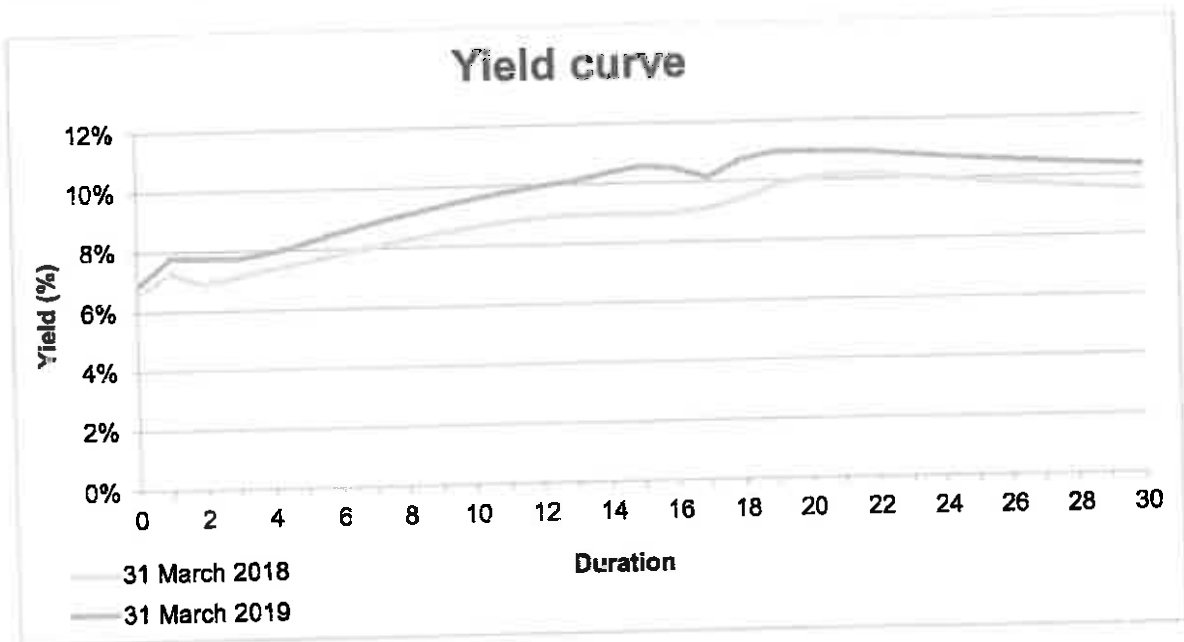
5.21 It is assumed that salaries will increase at an average rate of 1% in excess of inflation, due to general productivity improvements in the economy. We have therefore allowed for general salary increases at the rate of 7.04% p.a. (compared to 7.20% at the last valuation). In addition, in the absence of a fund-specific salary increase scale, there is an allowance for merit salary increments based on the Alexander Forbes Best Estimate salary increase scale. An extract from the scale is shown below, while the complete salary increase scale can be found in appendix 5.

Age	Merit Increase
30	5.5%
40	2.9%
50	1.5%
60	1.5%
65	1.5%

Pensioners

Yield curve

5.22 The gross discount rates are determined with regard to the all bond yield curve on the valuation date. I believe an appropriate matched investment strategy for the fund would reflect an asset profile of primarily bond investments. I have therefore used the yield curve as the discount rate, as implied by the efficient market hypothesis. The graph below compares the yields as at 31 March 2018 and 31 March 2019:



5.23 The expected future cashflows at each duration have been discounted using the yield implied by the yield curve at each specific duration.

5.24 The average discount rate which produces equivalent results is 9.44% p.a. compared to the single discount rate of 8.58% in the previous valuation.

- 5.25 No provision for asset management fees has been made, since the out-performance over the benchmark produced by active asset management should exceed the asset management fee.

Pension increases

- 5.26 Pensions in course of payment are increased by 2% per annum in terms of the rules of the fund.

Demographic assumptions

- 5.27 The demographic assumptions have been retained from the previous valuation, since at this point we do not have sufficient demographic history for the fund to warrant a change in these assumptions. We propose that a mortality investigation be undertaken at a future date so that we may verify the appropriateness of the demographic assumptions applied.
- 5.28 The fund specific Transnet Pre- and Post-retirement Mortality Tables have been adopted to represent the expected mortality of all members. The full mortality table is available in appendix 6, while an extract is shown below.

Age	Pre Ret Mortality		III Health		Post Ret Mortality	
	Male	Female	Male	Female	Male	Female
35	0.23%	0.23%	0.32%	0.09%	1.42%	0.48%
40	0.28%	0.28%	0.58%	0.17%	1.66%	0.58%
45	0.37%	0.37%	0.88%	0.44%	1.90%	0.69%
50	0.52%	0.52%	1.60%	1.02%	2.14%	0.82%
55	0.74%	0.74%	2.60%	1.78%	2.38%	0.97%
60	1.05%	1.05%	3.60%	2.64%	2.62%	1.23%
65	1.49%	1.49%	-	-	2.86%	1.72%
70	2.07%	2.07%	-	-	4.20%	2.59%
75	-	-	-	-	6.39%	4.18%

Marriage assumption

- 5.29 It is assumed that 80% of members and pensioners are married. Also, it is assumed that a male is, on average, 4 years older than his spouse. This is in line with the Alexander Forbes Best Estimate assumption for marriage, used where fund-specific marriage statistics are not readily available.

Solvency reserve basis

- 5.30 I have determined the level of the solvency reserve using the discontinuance matched approach as set out in Circular PF 117, issued by the Financial Service Board. PF 117 states that the combination of the liabilities calculated on a best estimate basis, together with the solvency reserve, "will result in the reporting of actuarial surplus on a basis consistent with international practice".
- 5.31 Although this fund is not subject to the Pension Funds Act (PFA) and Financial Services Conduct Authority (FSCA) circulars, the circular is considered appropriate for this fund and is in line with general actuarial practice as applied by actuaries in South Africa.
- 5.32 The assumptions that differ from my best estimate valuation assumptions are:
- Gross discount rate (actives): 9.20% (this is again the yield on 10 year fixed interest gilts adjusted for the reasonable cost of implementing and maintaining an investment strategy of partially matching such assets to the liabilities of the fund, i.e. 0.375%).
 - Gross discount rates (pensioners): This is the yield curve, as discussed in section 5.22, but adjusted for the reasonable cost of maintaining an investment strategy of matching such assets to the liabilities of the fund (0.5% for unmatched), but taking into account the current matching and associated reduced risks (0.25% for matched).
 - Post-retirement mortality: The fund specific mortality tables were again rated down by 1 year to allow for possible future mortality improvements.

6. VALUATION RESULTS

6.1 In order to determine the level of solvency of the fund, it is necessary to compare the total assets of the fund with the total liabilities. The fund is solvent when the value of the assets exceeds the value of the liabilities, i.e. a funding level of 100% or greater. The funding level is the ratio of the value of the assets to the value of the liabilities of the fund at the valuation date.

Value of liabilities

6.2 The present value of the actuarial liabilities of the fund in respect of members as at the valuation date is as follows:

	Transnet sub-fund		Total fund
	31 March 2018 (R'million)	31 March 2019 (R'million)	31 March 2019 (R'million)
Active members	450	336	669
Pensioners	2 389	2 284	3 622
Contribution reserve	20	9	23
Solvency reserve			
- Actives	25	17	37
- Pensioners	133	122	221
Pension increase reserve*	-	-	244
Total liabilities	3 017	2 768	4 813

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

Value of assets

6.3 For valuation purposes, the value of the assets is R5 953 million.

Contribution reserve

6.4 The contribution reserve as at the valuation date is determined as the difference between the required contribution rate under the Attained Age Method and the actual contribution rate paid to the fund, multiplied by the present value of all expected future salaries. The value of the contribution reserve as at the valuation date is R9 million.

Value of solvency reserve

6.5 I recommend the trustees maintain a solvency reserve to afford protection against investment and mortality risk. This reserve is calculated as the difference between the fund's liabilities on the valuation basis and the liabilities on the solvency basis.

6.6 The total recommended solvency reserve as at the valuation date amounts to R139 million.

Funding level

6.7 Comparing the value of the assets with the past service liabilities produces the following results:

	Transnet sub-fund		Total fund
	31 March 2018 (R'million)	31 March 2019 (R'million)	31 March 2019 (R'million)
Market value of assets	5 999	5 953	9 163
Value of accrued liabilities	2 839	2 620	4 291
Surplus/(Deficit) before contingency reserves	3 160	3 333	4 872
Contribution reserve	20	9	23
Pension increase reserve*	-	-	244
Solvency reserve	158	139	258
Surplus/(Deficit)	2 982	3 185	4 347
Funding level!	198.8%	215.1%	190.3%

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

6.8 The fund's assets exceed its accrued liabilities. As at the valuation date I am able to confirm that the fund is financially sound.

Required future contribution rate

6.9 The required future contribution rate to meet the costs of benefits accruing after the valuation date, per category of membership in the fund, is as follows:

	% of Pensionable Salaries		
	Transnet sub-fund		
	All members	Footplate	Other
Current contributions			
- Members	7.546%	8.500%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	18.571%	19.525%	18.525%
Required contribution rate			
- Future service (based on Rules)	22.299%	27.255%	22.061%
- Addition for benefit improvements	0.000%	0.000%	0.000%
- Contribution reserve subsidy	<u>-3.728%</u>	<u>-7.730%</u>	<u>-3.536%</u>
	18.571%	19.525%	18.525%

- 6.10 For comparison, the required future contribution rate to meet the costs of benefits accruing after the valuation date, per category of membership in the Transport Pension Fund, is as follows:

	% of Pensionable Salaries			
	All members	Footplate	Flight Deck	Other
Current contributions				
- Members*	8.007%	8.500%	11.000%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	19.032%	19.525%	22.025%	18.525%
Required contribution rate				
- Future service (based on Rules)	23.566%	27.458%	31.935%	22.057%
- Addition for benefit improvements	1.402%	0.547%	4.023%	1.006%
- Contribution reserve subsidy	<u>-5.937%</u>	<u>-8.480%</u>	<u>-13.933%</u>	<u>-4.538%</u>
	19.032%	19.525%	22.025%	18.525%

* Average contribution of all members of the Transport Pension Fund

Comment in terms of APN 205

- 6.11 Whilst the value of the liabilities is based on best estimate assumptions, where relevant, and the solvency and other contingency reserves established by the trustees on my advice allow for some fluctuations in asset values and / or unexpected changes in liabilities, there is no guarantee that these reserves will prove sufficient in practice. Conversely, it is possible that the reserves may prove to be more than sufficient.
- 6.12 If the reserves prove to be insufficient, management action will be required to rectify the position. The uncertainty of the adequacy or otherwise of the reserves held is unavoidable and the actual outcome can only be determined when the fund ceases to have any further liabilities.

7. SUMMARY AND RECOMMENDATIONS

- 7.1 The market value of assets as at the valuation date is R5 953 million compared to the accrued liabilities of R2 620 million.
- 7.2 The actuarial valuation of the Transport Pension Fund: Transnet sub-fund revealed a surplus of R3 185 million after allowing for a contribution reserve of R9 million and a solvency reserve of R139 million, with a funding level of 215.1% as at the valuation date.
- 7.3 The fund's assets exceed its accrued liabilities. As at the valuation date I am able to confirm that the fund is financially sound.
- 7.4 I am satisfied with the appropriateness of the matching of the fund's assets and liabilities (see section 4.10).



A R Pienaar

Fellow of the Actuarial Society of South Africa
and the Fellow of the Institute of Actuaries
in my capacity as the valuator of the fund
and as an employee of
Alexander Forbes Financial Services (Pty) Ltd

For the purposes of professional regulation the primary professional regulator of the signatories to this report is the Actuarial Society of South Africa.

August 2019



APPENDIX 1: SUMMARY OF BENEFITS AND CONTRIBUTIONS

A summary of the main benefits is given below. Full details are contained in the registered rules of the fund.

The Rules provide for special benefits on specific contingencies for particular categories of members. These have not been summarised here. Only the generic benefits have been shown.

Contributions

Member Contributions

Members contribute a percentage of their pensionable salary to the fund, depending on their membership category, as set out below:

Membership Category	% of Pensionable Salaries
Footplate Personnel	8.5%
Other Personnel	7.5%

Employer Contributions

The employer currently contributes to the fund at a rate of 11.025% of pensionable salaries in respect of all members. In addition, the employer covers the administration expenses of the fund.

Definitions

Average Pensionable Salary

This is the average pensionable salary of the member in the last year of pensionable service.

Retirement Dates

For the different categories of membership, the minimum and normal retirement dates are the month in which the following age is attained:

Membership Category	Retirement Age (years)	
	Minimum	Normal
Footplate Personnel	55	58
Other Personnel	60	63

Pensionable Service

This is the completed service in years, months and days since joining the fund, during which contributions were received. Pensionable service includes any periods of linking, antedated and casual service for which contributions were made, as defined in the rules of the fund, as well as any unpaid leave for which the member elected to contribute.

Accrual Factor

For the different categories of membership, the Accrual Factor is determined as follows as at the minimum and normal retirement dates:

Membership Category	Retirement Age (years)	
	Minimum	Normal
Footplate Personnel	1/55 th	1/49 th
Other Personnel	1/60 th	1/54 th

Gratuity Factor

For the different categories of membership, the Gratuity Factor is determined as follows (irrespective of the date of retirement):

Membership Category	Gratuity factor
Footplate Personnel	13.50
Other Personnel	12.00

Retirement Benefits

A member is entitled to the following benefits on attaining the minimum retirement age:

- An annual pension equal to:
 $Average\ Pensionable\ Salary \times Pensionable\ Service \times Accrual\ Factor$ (1)
 Plus
- A gratuity equal to:
 $1/3^{rd} \times (1) \times Gratuity\ Factor$

The rules do not permit late retirement after the attainment of the age limit.

Ill-health Retirement

A member who retires due to ill-health is entitled to their actuarial value.

Death In Service Benefits

On the death of an active member, the following benefits are payable:

- an annual dependants' pension equal to 70% of the annual pension that the member would have been entitled to had they retired at the date of death, but with Pensionable Service increased by the period from the date of death until the normal retirement date; plus
- the gratuity that the member would have been entitled to had they retired at the date of death but with Pensionable Service subject to a minimum of 10 years.

Where the member dies before reaching the minimum retirement date, the Accrual Factor as at the minimum retirement date applies for the above calculations.

- If the member has no dependants, the benefit on voluntary resignation is paid to the nominees or estate.

Death in Retirement

On the death of a pensioner, a dependants' pension equal to 70% of the deceased pensioner's pension at the date of death is payable.

Where the pensioner dies before attaining the normal retirement date, the dependants' pension is increased by the following ratio:

(Pensionable Service plus the period from the date of death to the normal retirement date)

Divided by

(Pensionable Service)

Pension Increases

The fund's rules provide for a guaranteed pension increase of 2% per annum which is implemented on the commencement anniversary of the pension.

The fund makes allowance for the payment of bonus pensions in addition to the guaranteed 2% per annum pension increase.

Resignation Benefits

On resignation, the fund grants members their actuarial value.



APPENDIX 2: MEMBER RECONCILIATION

Active members

	Transnet sub-fund	Total fund
Active 31 March 2018	158	244
Adjustment	2	8
Revised	170	252
Exits	(33)	(44)
- Death	(3)	(4)
- Ill-health	(1)	(1)
- Withdrawals	(2)	(3)
- Retirement	(23)	(30)
- Transfers out	(4)	(6)
Active 31 March 2019	137	208

Pensioners

TOTAL

	Transnet sub-fund	Total fund
Pensioners 31 March 2018	4 316	5 506
Adjustment	=	=
Revised	4 316	5 506
New pensioners	99	126
Exits	(201)	(256)
Pensioners 31 March 2019	4 214	5 376

FORMER ACTIVE MEMBERS

	Transnet sub-fund	Total fund
Pensioners 31 March 2018	2 250	2 955
Adjustment	=	=
Revised	2 250	2 955
New pensioners	23	28
Exits	(100)	(136)
Pensioners 31 March 2019	2 173	2 847

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Dependants**SPOUSES**

	Transnet sub-fund	Total fund
Pensioners 31 March 2018	1 903	2 354
Adjustment	=	=
Revised	1 903	2 354
New pensioners	75	97
Exits	(46)	(55)
Pensioners 31 March 2019	1 932	2 396

CHILDREN

	Transnet sub-fund	Total fund
Pensioners 31 March 2018	163	197
Adjustment	=	=
Revised	163	197
New pensioners	1	1
Exits	(55)	(65)
Pensioners 31 March 2019	109	133

APPENDIX 3: INDIVIDUAL MEMBERSHIP INFORMATION

Active members

MALES

Age Band	Number	Totals		Average per member		
		Salary (R)	Accrued Liability (R)	Salary (R)	Accrued Liability (R)	Service
0 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-
35 - 39	1	379 382	1 376 120	379 382	1 376 120	19.83
40 - 44	6	3 197 551	13 321 150	532 925	2 220 192	22.58
45 - 49	7	3 327 418	15 174 532	475 345	2 167 790	24.43
50 - 54	18	6 151 394	40 012 926	341 744	2 222 940	30.62
55 - 59	49	13 512 736	109 930 691	275 770	2 243 483	35.52
60+	49	14 508 612	140 916 168	296 094	2 875 840	39.89
Total	130	41 077 093	320 731 587	315 978	2 467 166	35.18

FEMALES

Age Band	Number	Totals		Average per member		
		Salary (R)	Accrued Liability (R)	Salary (R)	Accrued Liability (R)	Service
0 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-
35 - 39	-	-	-	-	-	-
40 - 44	2	809 565	3 229 472	404 783	1 614 736	21.17
45 - 49	1	430 555	2 532 659	430 555	2 532 659	30.00
50 - 54	1	164 265	1 308 769	164 265	1 308 769	37.50
55 - 59	1	359 159	2 437 408	359 159	2 437 408	30.92
60+	2	601 005	5 590 934	300 503	2 795 467	38.58
Total	7	2 364 549	15 099 242	337 783	2 157 035	31.13

Pensioners

FORMER ACTIVE MEMBERS

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 54	21	749 892	35 709	-	-	-
55 - 59	47	3 911 184	83 217	5	368 664	73 733
60 - 64	199	25 232 436	126 796	5	653 520	130 704
65 - 69	544	68 404 560	125 744	10	1 243 824	124 382
70 - 74	787	75 231 852	95 593	12	936 204	78 017
75 - 79	490	29 189 208	59 570	15	743 484	49 566
80 - 84	37	2 524 092	68 219	1	53 652	53 652
85+	-	-	-	-	-	-
Total	2 125	205 243 224	96 585	48	3 999 348	83 320

Dependants

SPOUSES

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 54	-	-	-	272	7 456 572	27 414
55 - 59	1	25 044	25 044	299	8 516 280	28 483
60 - 64	1	23 976	23 976	380	11 964 504	31 486
65 - 69	-	-	-	511	15 086 388	29 523
70 - 74	5	236 628	47 326	304	10 033 992	33 007
75 - 79	-	-	-	128	3 905 592	30 512
80 - 84	-	-	-	22	436 740	19 852
85+	-	-	-	9	149 544	16 616
Total	7	285 648	40 807	1 925	57 549 612	29 896

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CHILDREN

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 4	-	-	-	-	-	-
5 - 9	2	24 648	12 324	1	9 576	9 576
10 - 14	15	111 912	7 461	8	134 568	16 821
15 - 19	34	262 140	7 710	33	210 204	6 370
20+	8	65 604	8 201	8	84 552	10 569
Total	59	464 304	7 870	50	438 900	8 778

Mark

A. Smith

APPENDIX 4: ANALYSIS OF CHANGE IN FINANCIAL POSITION

The valuation at 31 March 2019 disclosed a surplus in assets of approximately R3 185 million after taking into account the recommended reserves. The previous valuation at 31 March 2018 showed a surplus of some R2 982 million on the market value of assets.

The factors that led to a change of approximately R202 million have been analysed according to source and the results of this analysis are given in the table that follows:

Item	R'million
Valuation Surplus/(Deficit) as at 31 March 2018	2 982
Interest on valuation surplus/(deficit)	257
Investment return	(166)
Salary/Earnings experience	2
Expense deficit	(1)
Ad hoc bonuses	(83)
Change in actuarial reserve	5
Change of basis	201
Other income	1
Miscellaneous	(13)
Valuation Surplus/(Deficit) as at 31 March 2019	3 185

The individual items are discussed in the following paragraphs.

Interest on valuation surplus/(deficit)

Interest at the previous period's assumed valuation rate on the previous surplus produced a profit of R257 million over the inter-valuation period.

Investment return

The internal rate of return achieved within the fund (approximately 6.1%) was lower than that anticipated on the previous valuation basis of 8.62% for active members and an effective 8.62% for pensioners. This resulted in an investment strain of R166 million over the inter-valuation period.

Salary/Earnings experience

The increase in salaries over the year (approximately 6.61%) was lower than that anticipated on the previous valuation basis of 7.20% and an allowance for merit increases. This resulted in a salary profit of R2 million over the inter-valuation period.

Expense deficit

Over the valuation period expenses were incurred which related to actuarial fees, audit fees and trading and consulting fees, as per the financial statements of the fund. All other expenses were met by the employer. This resulted in an expense strain of R1 million.

Ad hoc bonuses

During the inter-valuation period ad hoc bonus pensions were paid to pensioners of the fund. This resulted in a strain of R83 million.

Change in actuarial reserve

The change in the actuarial reserve was higher than that assumed on the previous valuation basis of 8.62%. This resulted in a profit of R5 million.

Change of basis

In the previous valuation a discount rate of 8.62% was assumed for active members, with annual salary increases based on a general percentage increase of 7.20% per annum and a merit scale. For pensioners the yield curve was used to discount future cashflows. These assumptions have since been updated. A discount rate of 9.57% is now assumed for active members, while annual salary increases are based on a general percentage increase of 7.04% and a merit scale. For pensioners, the yield curve has been updated. This change in basis, along with the subsequent change in solvency reserves, has resulted in a profit of R201 million.

Other income

A tax credit related to the class action against the fund was realised during the valuation period relating to the previous period. This resulted in a profit of R1 million over the inter-valuation period.

Miscellaneous

There was a miscellaneous strain of R13 million arising from various sources, none of which are individually significant.

APPENDIX 5: SALARY INCREASE SCALE

Age	Merit Increase	Age	Merit Increase
30	5.50%	48	1.50%
31	5.00%	49	1.50%
32	4.50%	50	1.50%
33	4.30%	51	1.50%
34	4.10%	52	1.50%
35	3.90%	53	1.50%
36	3.70%	54	1.50%
37	3.50%	55	1.50%
38	3.30%	56	1.50%
39	3.10%	57	1.50%
40	2.90%	58	1.50%
41	2.70%	59	1.50%
42	2.50%	60	1.50%
43	2.30%	61	1.50%
44	2.10%	62	1.50%
45	1.90%	63	1.50%
46	1.70%	64	1.50%
47	1.50%	65	1.50%

APPENDIX 6: DEMOGRAPHIC ASSUMPTIONS

Age	Pre Ret Mortality		Ill Health		Post Ret Mortality	
	Male	Female	Male	Female	Male	Female
30	0.20%	0.20%	0.16%	0.03%	1.17%	0.39%
31	0.21%	0.21%	0.18%	0.04%	1.22%	0.41%
32	0.21%	0.21%	0.20%	0.05%	1.27%	0.42%
33	0.21%	0.21%	0.24%	0.06%	1.32%	0.44%
34	0.22%	0.22%	0.28%	0.08%	1.37%	0.46%
35	0.23%	0.23%	0.32%	0.09%	1.42%	0.48%
36	0.23%	0.23%	0.36%	0.11%	1.46%	0.50%
37	0.24%	0.24%	0.40%	0.12%	1.51%	0.52%
38	0.26%	0.26%	0.46%	0.14%	1.56%	0.54%
39	0.27%	0.27%	0.52%	0.15%	1.61%	0.56%
40	0.28%	0.28%	0.58%	0.17%	1.66%	0.58%
41	0.29%	0.29%	0.64%	0.18%	1.71%	0.60%
42	0.31%	0.31%	0.70%	0.20%	1.75%	0.63%
43	0.33%	0.33%	0.76%	0.28%	1.80%	0.65%
44	0.35%	0.35%	0.82%	0.36%	1.85%	0.67%
45	0.37%	0.37%	0.88%	0.44%	1.90%	0.69%
46	0.39%	0.39%	0.94%	0.52%	1.95%	0.72%
47	0.42%	0.42%	1.00%	0.60%	1.99%	0.74%
48	0.45%	0.45%	1.20%	0.74%	2.04%	0.77%
49	0.48%	0.48%	1.40%	0.88%	2.09%	0.79%
50	0.52%	0.52%	1.60%	1.02%	2.14%	0.82%
51	0.56%	0.56%	1.80%	1.16%	2.19%	0.85%
52	0.60%	0.60%	2.00%	1.30%	2.24%	0.87%
53	0.64%	0.64%	2.20%	1.46%	2.28%	0.90%
54	0.69%	0.69%	2.40%	1.62%	2.33%	0.93%
55	0.74%	0.74%	2.60%	1.78%	2.38%	0.97%
56	0.79%	0.79%	2.80%	1.94%	2.43%	1.02%
57	0.85%	0.85%	3.00%	2.10%	2.48%	1.06%
58	0.91%	0.91%	3.20%	2.28%	2.52%	1.11%
59	0.98%	0.98%	3.40%	2.46%	2.57%	1.15%
60	1.05%	1.05%	3.60%	2.64%	2.62%	1.23%
61	1.13%	1.13%	3.80%	2.82%	2.67%	1.32%
62	1.21%	1.21%	4.00%	3.00%	2.72%	1.40%
63	1.30%	1.30%	4.20%	3.18%	2.77%	1.49%
64	1.39%	1.39%	4.40%	3.36%	2.81%	1.57%
65	1.49%	1.49%	-	-	2.86%	1.72%

Nik

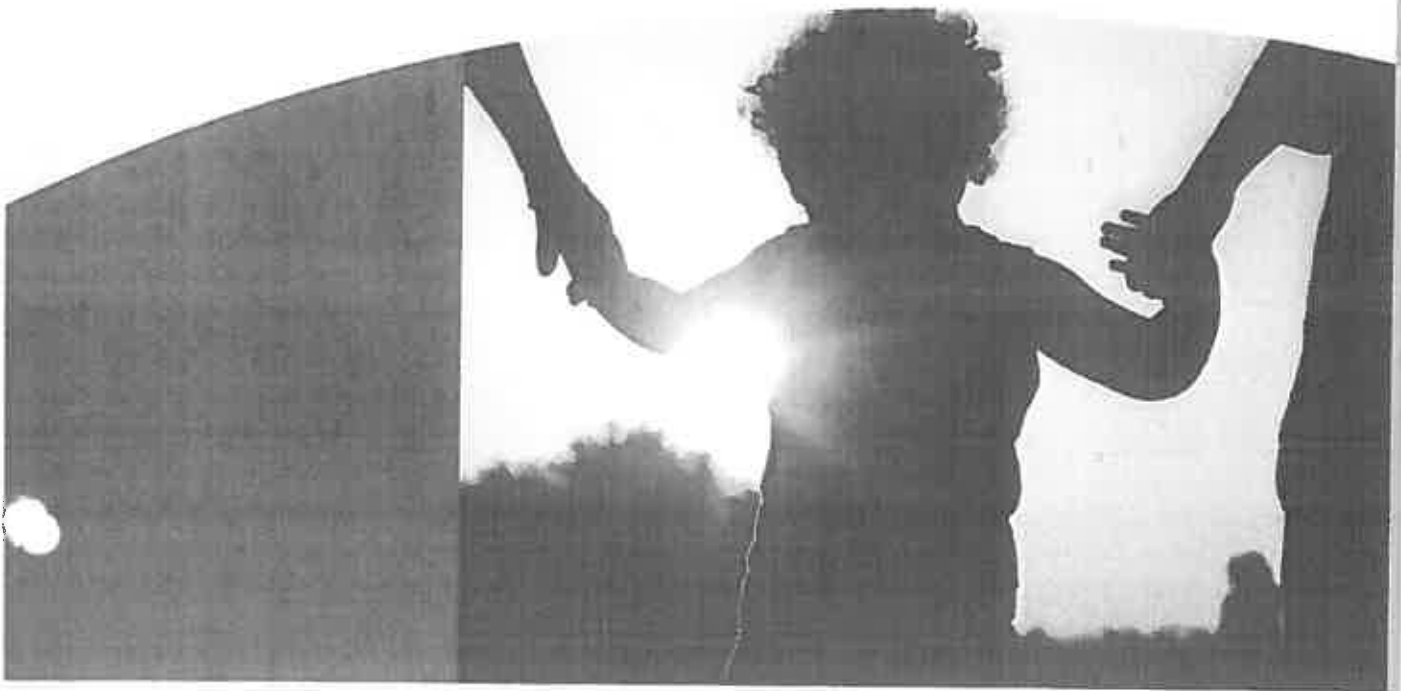
Pete

Actuarial valuation of the Transport Pension Fund: Transnet sub-fund as at 31 March 2019

66	1.60%	1.60%	-	-	3.10%	1.87%
67	1.71%	1.71%	-	-	3.35%	2.02%
68	1.83%	1.83%	-	-	3.59%	2.17%
69	1.95%	1.95%	-	-	3.83%	2.32%
70	2.07%	2.07%	-	-	4.20%	2.59%
71	-	-	-	-	4.57%	2.87%
72	-	-	-	-	4.95%	3.14%
73	-	-	-	-	5.32%	3.42%
74	-	-	-	-	5.69%	3.69%
75	-	-	-	-	6.39%	4.18%

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Transport Pension Fund: PRASA sub-fund

Actuarial valuation as at 31 March 2019

Prepared by Alexander Forbes Financial Services

August 2019


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EXECUTIVE SUMMARY

Present value of liabilities

1. The present value of the actuarial liabilities of the fund as at the current and previous valuation dates were as follows:

	31 March 2018 (R'million)	31 March 2019 (R'million)
Active members	54	48
- Past service liability	45	41
- Pension increase reserve*	9	7
Pensioners	517	473
- Pensioners	425	397
- Pension increase reserve*	92	76
Contingency reserves	39	33
- Solvency reserve		
- Actives	3	3
- Pensioners	34	29
- Contribution reserve	2	1
Total Liabilities	610	554

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policy of the PRASA sub-fund, which targets pension increases of 75% of CPI.

Summary of results

2. Comparing the value of the fund's assets with the total past service liabilities shows the following results:

	31 March 2018 (R'million)	31 March 2019 (R'million)
Market value of assets	1 275	1 261
Value of accrued liabilities	470	438
Surplus/(Deficit) before contingency reserves	805	823
Contribution reserve	2	1
Pension increase reserve	101	83
Solvency reserve	37	32
Surplus/(Deficit)	965	707
Funding level	209.0%	227.6%

Conclusion

3. I confirm that, based on the information available, the fund was in a sound financial condition as at the valuation date, i.e. the assets of the Transport Pension Fund: PRASA sub-fund exceeded the fund's actuarial liabilities and recommended contingency reserves as at the valuation date.

1. INTRODUCTION

I am pleased to present to the trustees of the Transport Pension Fund: PRASA sub-fund (*"the fund"*) this actuarial valuation as at 31 March 2019 (*"the valuation date"*). This report sets out the results of the actuarial valuation of the fund as at the valuation date and includes an analysis of the financial progress of the fund since 31 March 2018 (*"the previous valuation date"*). The period between the previous valuation date and the current valuation date is referred to hereinafter as the valuation period.

Registration and operation

- 1.1 The Transnet Pension Fund is a defined benefit pension fund established in terms of the Transnet Pension Fund Act 62 of 1990 (the "Act"). The fund has been closed to new members since 1 December 2000. The Transnet Pension Fund Amendment Act, promulgated in the second half of 2007, changed the name of the fund with effect from 11 November 2005 to the Transport Pension Fund.
- 1.2 The Transnet Pension Fund Amendment Act restructured the Transport Pension Fund into a multi-employer pension fund. From the date this Act came into effect, all existing members, pensioners, dependent pensioners, liabilities, assets, rights and obligations of the Transport Pension Fund are attributable to a sub-fund, with Transnet as the principal employer.
- 1.3 The amended rules of the fund established a sub-fund in the name of South African Airways (Pty) Ltd ("SAA") from 1 April 2006. A further sub-fund in the name of the Passenger Rail Agency of South Africa ("PRASA") was established with effect from 1 May 2006. The third sub-fund currently in existence is the Transnet sub-fund ("Transnet").

Objectives

- 1.4 This actuarial valuation has been carried out as at the valuation date with the following objectives:
 - to assess the **financial soundness** of the fund, by comparing the value of liabilities accrued to the valuation date with the value of the assets held as at that date;
 - to investigate and report on **actual experience of the fund** since the previous valuation;
 - to review the **assumptions used** in light of actual experience and industry developments;
 - to assess the necessity for, and quantum of, any **contingency reserves**;
 - to assess the **suitability of the assets** in relation to the liabilities of the fund; and
 - to meet **statutory requirements**.

Valuation data

- 1.5 In compiling this report, I have relied upon the accuracy and completeness of information made available to me by the administrators, Momentum Retirement Administrators, and external parties. Except where expressly stated in the report, I have not independently verified the accuracy of the facts or the basis of the information supplied to me.
- 1.6 The results of the valuation depend on the accuracy of:
 - the membership data;
 - the information on the assets, as supplied by the relevant sources; and
 - the draft audited financial statements for the valuation period.

- 1.7 Reasonability checks have been performed on the above and I am satisfied with the general accuracy and completeness of the data provided and with its suitability for purposes of this actuarial valuation. Further information regarding the reasonability checks performed is set out in section 3.

Capacity, brief and professional guidance

- 1.8 This report has been prepared by Alexander Forbes Financial Services (Pty) Ltd ("Alexander Forbes") solely for the benefit of trustees of the Transport Pension Fund and the Minister of Public Enterprises, and is prepared in accordance with the instructions given by the trustees of the fund. The trustees are charged by the Transnet Pension Fund Act 62 of 1990 ("the Act") to investigate the financial condition of the fund and report thereon to the Minister of Public Enterprises.
- 1.9 In terms of General Rule 3.14.3 of the fund, the fund shall be valued by the Actuary at intervals not exceeding three years, to determine whether the fund is in a position to pay the benefits provided for in the Rules. The current practice is to perform annual actuarial valuations of the fund. The trustees appointed Alexander Forbes Financial Services to perform this valuation.
- 1.10 The previous valuation of the fund was carried out as at the previous valuation date by Alexander Forbes Financial Services and, at that date, the fund was in a sound financial position.
- 1.11 Throughout this report any values that have been determined are, except where otherwise stated, in accordance with our view of the most probable future experience. Our specific assumptions and other reliances and limitations are documented in the following sections and supporting appendices. These sections and appendices are an integral part of this report.
- 1.12 This report complies with the relevant Guidance Notes of the UK Actuarial Profession and the relevant Professional Guidance Notes of the Actuarial Society of South Africa.
- 1.13 Alexander Forbes does not accept any liability to any persons, other than the trustees, in connection with this report or its related enquiries. I accept no liability in respect of any matter outside the scope and limitations of this report and purpose for which it is prepared.
- 1.14 This report may not be disclosed and / or relied upon in whole or in part to / by any person other than the trustees or quoted in any other context without prior written consent. Any person, other than the trustees to whom this report is addressed, who receives a draft or copy of this report (or any part of it) or discusses it (or any part of it) or any related matter with me or any third party, does so on the basis that they acknowledge the source of this report and accept that they may not rely on it for any purpose whatsoever and that I owe a duty of care only to the trustees. Any portion of this report, if reproduced or transmitted, must include a reference to the full report and to this clause.
- 1.15 This report has been prepared as at the valuation date and covers the valuation period given above. Unless specifically stated to the contrary, it does not take into account any events subsequent to the valuation date.

2. DEVELOPMENTS SINCE THE PREVIOUS VALUATION DATE

Pension increases

- 2.1 The rules of the fund allow for pension increases above the 2% minimum to be paid from time to time in order to maintain 100% of purchasing power, and annually to a maximum of 75% of the average CPI in the previous financial year, subject to an assessment of affordability by the fund and its actuaries, and the approval of the employer.
- 2.2 In addition to the 2% granted to each pensioner in terms of the rules of the fund, an additional 1.05% increase was granted during the valuation period.

Bonus pensions

- 2.3 The rules of the fund allow for bonus pensions to be paid, subject to an assessment of affordability by the fund and its actuaries, and the approval of the employer.
- 2.4 Bonus payments equal to 8.33% of annual pensions (i.e. a 13th cheque) were granted to all pensioners of the fund in December 2018.

Rule amendments

- 2.5 There were no rule amendments during the valuation period that could impact on the financial condition of the fund.

Administration and actuarial services

- 2.6 The fund was administered by Momentum Retirement Administrators during the valuation period.
- 2.7 Alexander Forbes are the appointed actuaries to the fund.

3. MEMBER DATA

- 3.1 The valuation of the fund at the valuation date was based on the membership detailed below. A complete data requirement specification for the fund was prepared by Alexander Forbes Financial Services and discussions were held with the administrators to assist in ensuring the data requirements were met.
- 3.2 Further statistics, including a reconciliation of the current membership with that present at the previous valuation, are provided in appendix 2 and appendix 3.
- 3.3 The following tables summarise the data:

Active members	PRASA sub-fund		Total fund
	31 March 2018	31 March 2019	31 March 2019
Number of contributing members	23	25	208
Total annual pensionable salary (R'000)	5 104	5 421	78 989
Average annual pensionable salary (R)	221 913	216 840	379 755
Average age (salary weighted)	57.8	58.8	56.4
Average service (salary weighted)	35.1	31.9	34.8

Pensioners	PRASA sub-fund		Total fund
	31 March 2018	31 March 2019	31 March 2019
Number of pensioners	890	865	5 376
Total annual pension (R'000)	45 684	46 140	423 348
Average annual pension (R)	51 330	53 341	78 748
Average age (pension weighted)	67.3	68.2	68.7

Data checks

- 3.4 The following paragraphs set out the data received for the valuation and the reasonability and other checks performed on this data.
- 3.5 Electronic data was supplied in respect of the following groups:
- Pensioners;
 - Active members; and
 - Exits.
- 3.6 The results of the valuation are dependent on the accuracy and completeness of the data supplied. Any significant changes to the data would result in potentially significant changes in the valuation results.

Checks performed

- 3.7 A reconciliation of the valuation data with the financial statements has been attempted and a number of reasonability tests to verify the correctness of the data have been performed.
- 3.8 For each of the above categories of membership checks have been done for missing dates of birth, dates of commencement of pension, gender and pension amounts. Checks have also been carried out to ensure that there are no duplicate records contained within a particular group and that no members appear in more than one group.
- 3.9 The following reasonability checks have been performed for active members:
- Date feasibility;
 - Dates are in logical order;
 - Ages are in reasonable ranges;
 - Annual pensionable salaries are in reasonable ranges;
 - Consistency of salary weighted age and service over the valuation period;
 - Annual pensionable salary increases are reasonable.
- 3.10 The following reasonability checks have been performed for pensioners:
- Date feasibility;
 - Dates are in logical order;
 - Ages are in reasonable ranges;
 - Period on pension is in reasonable range;
 - Annual pensions are in reasonable ranges;
 - Consistency of average age and pension weighted average age over the valuation period;
 - Annual pension increases are reasonable;
 - The annual pensions paid, as shown in the financial statements, seem in line with the average pension from the data.

Data supplied and data concerns

- 3.11 After performing the data checks described above, a number of queries were sent to Momentum Retirement Administrators where omissions or inconsistencies in the data were identified. The responses received from the administrators resulted in the records of some members and pensioners being either updated or deleted.
- 3.12 Given the checks performed on the data and the responses to the queries raised, the data on which the valuation has been based appears to be reasonable for the purposes of this valuation.

4. ASSETS

4.1 This section sets out the value placed upon the fund's assets. In order to ensure consistency with the actuarial value placed on the liabilities of the fund, which follow a market value basis approach as set out in the following section of this report, we have used the market value of assets as reported in the annual financial statements.

Investment strategy

4.2 The fund has a detailed investment strategy document and the trustees and fund's administrators undertake regular checks to ensure that the fund's asset composition complies with the investment guidelines set out in the investment strategy document.

Revenue statement

4.3 A consolidated revenue and expenditure account for the period 1 April 2018 to 31 March 2019 was provided based on draft financial statements.

4.4 A summary of the revenue and expenditure account for the total fund is as follows:

	PRASA sub-fund		Total fund
	R'000	R'000	R'000
Fund as at 1 April 2018		1 274 771	9 310 771
Revenue and appreciation		38 886	448 463
Contributions received and accrued	1 273		
Net investment income	37 533		
Other income (Lumpsum & Annuities written back)	80		
Expenditure		(52 771)	(595 636)
Administration expenses	(1 139)		
Benefit payments	(51 632)		
Transfers out	-		
Fund as at 31 March 2019		1 260 886	9 193 598

Fund assets

- 4.5 The composition of the fund's assets at market value as reported in the annual financial statements produced by the fund's administrators is set out in the following table:

	Market Value R'000	Allocation %
Foreign		
Cash and deposits	8 081	0.56
Debt instruments	593	0.04
Foreign listed equities	265 856	18.41
Listed property shares	240	0.02
Collective investment scheme	427	0.03
Local		
Cash and deposits	113 170	7.84
Debt instruments	597 432	41.38
Equities (listed, unlisted, private)	293 464	20.32
Listed property shares	80 080	5.55
Commodities	1 317	0.09
Private equity funds	4 442	0.31
Collective investment schemes	78 782	5.45
Total investments	1 443 884	100.0
Plus: Current assets	28 154	
Less: Current liabilities	(200 212)	
Less: Non-current liabilities	(4 001)	
Less: Actuarial reserves	(6 939)	
Total assets for valuation purposes	1 260 803	

* A provision of R4 million has been included to cater for expected future payments in respect of class actions against the fund.

Valuation of assets

- 4.6 For purposes of this actuarial valuation, the assets have been taken into account at 100% of fair (or market) value and no investment margin has been set aside. Therefore the assets of the fund have been taken into account at R1 261 million as at the valuation date. This is consistent with asset valuation methodology applied to the valuation of the fund's liabilities.

Fund returns

- 4.7 The assets of the fund earned approximately 6.1% per annum during the valuation period, as provided by the fund's asset consultants. This investment return is net of investment management fees.
- 4.8 This return should be considered in the context of the 8.62% per annum assumed for active members and the effective 8.62% per annum assumed for pensioners in the previous actuarial valuation report.

Appropriateness of assets

- 4.9 In May 2018 the trustees agreed to a revised asset strategy to better match the assets to the nature of the fund's liabilities. The new strategic asset allocations is as follows:

	Allocation
	%
Local equities	22.0
Local cash and alternatives	5.0
Cash flow matching	40.0
Local property	8.0
Local credit	3.0
Global equities	22.0
	100.0

- 4.10 I am satisfied with the appropriateness of the matching of the fund's assets and liabilities.

5. VALUATION METHOD AND BASIS

The valuation has been conducted on the basis of the benefits and other provisions of the rules of the fund as at the valuation date.

Valuation method

- 5.1 The fund has been closed to new members since 1 December 2000. The actuarial valuations of the fund carried out since 31 March 2001 have therefore been carried out using a valuation method known as the Attained Age Method. This method allows for the fact that the fund will effectively age over time as the current membership increases in age.

Accrued liabilities

- 5.2 The accrued liability for active members is derived as the present value of their expected future benefit entitlements based on service up to the valuation date and projected salaries to the date of benefit entitlement, using specific actuarial assumptions for the future financial and demographic experience of the fund.
- 5.3 The accrued liability for pensioners is calculated as the present value of their expected future pension payments using specific actuarial assumptions for the future financial and demographic experience of the fund. Provision is made for the future pension increases of 2% per annum, as specified in the rules of the fund.

Future service contribution rate

- 5.4 Under the Attained Age Method, the present value of benefits that will accrue to active members in respect of all future service following the valuation date, is calculated and converted into a contribution rate by dividing this by the present value of projected salaries for all members over the same period. This gives the required future service contribution rate before allowing for any subsidy from the contribution reserve.
- 5.5 There is no future service contribution rate in respect of pensioners.

Contribution reserve

- 5.6 The Attained Age Method of funding calculates a future service contribution rate, which, if paid throughout a member's working lifetime, is expected to fund the member's final benefit at retirement. The true cost of benefit accrual is, however, an increasing function of age and therefore, under the Attained Age Method, more is paid into the fund in the initial years than is required to meet the value of the benefit accruing in those early years. The excess contributions in the initial years build up as a reserve, the contribution reserve.
- 5.7 In later years, this reserve is utilised when the Attained Age Method contribution rate is lower than the value of benefits accruing. This ensures a stable contribution rate, if all other valuation assumptions are met.
- 5.8 The recommended balance in the contribution reserve as at the valuation date is determined as the difference between the required contribution rate under the Attained Age Method and the actual contribution rate paid to the fund, multiplied by the present value of all expected future salaries.

Risk benefits

- 5.9 The death and ill-health benefits provided by the fund are currently self-insured within the fund and the valuation method and assumptions fully provide for the expected costs of these benefits.

Expenses

- 5.10 The employer pays the fund's administration expenses directly and no allowance for administration expenses has been made in the valuation.
- 5.11 Investment expenses and taxes are allowed for implicitly by assuming that they are offset against investment proceeds. The valuation interest rate used in this report is therefore assumed to be net of investment fees and taxes.

Assets

- 5.12 We have used the market value of assets for valuation purposes.

Principal actuarial assumptions

- 5.13 In setting the assumptions to be used for estimating the liabilities of the fund, current actuarial principles and the Alexander Forbes best practice "house view" have been followed.
- 5.14 Current practice is for these assumptions to be "best estimate" assumptions. Therefore, no deliberate margins for conservatism would be included in the assumptions; and the assumptions would generally be motivated by reference to the experience of the fund, statistical evidence and yields on government or corporate bonds.
- 5.15 In addition, the assumptions should be reasonable both independently and combined. The assumptions used to value the liabilities must be consistent with those used to value the assets.
- 5.16 The actuarial assumptions used in the valuation of the liabilities are detailed below:

Active members**Gross discount rate**

- 5.17 The gross discount rate is determined with regard to the yield on 10 year Government bonds on the valuation date, reflecting the average duration of the liabilities. This implies a gross discount rate of 9.57%. The previous year's gross discount rate was set at 8.62%.
- 5.18 No provision for asset management fees has been made since the out performance over the benchmark produced by active asset management should exceed the asset management fee.

Inflation

- 5.19 A future inflation assumption has been estimated by subtracting the yield on 10 year inflation-linked bonds from a similar duration fixed coupon bond yield.
- 5.20 Expected inflation as at the valuation date is therefore set at 6.04% p.a. ($1.0957 / 1.0333 - 1$), compared to 6.20% at the last valuation.

Salary increases

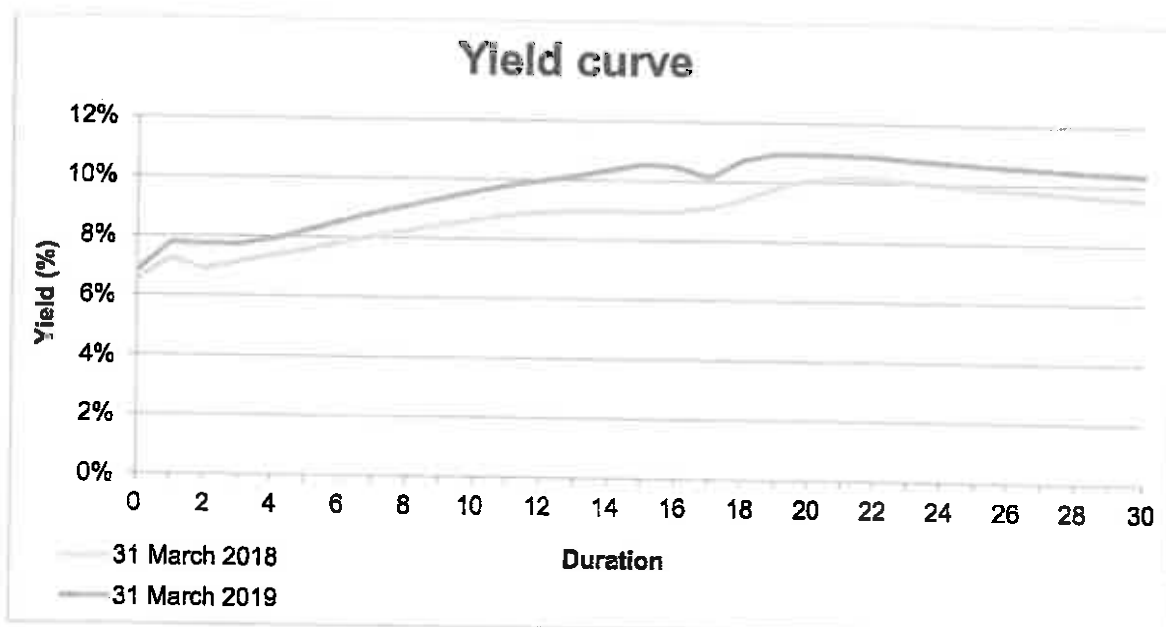
5.21 It is assumed that salaries will increase at an average rate of 1% in excess of inflation, due to general productivity improvements in the economy. We have therefore allowed for general salary increases at the rate of 7.04% p.a. (compared to 7.20% at the last valuation). In addition, in the absence of a fund-specific salary increase scale, there is an allowance for merit salary increments based on the Alexander Forbes Best Estimate salary increase scale. An extract from the scale is shown below, while the complete salary increase scale can be found in appendix 5.

Age	Merit increase
40	2.9%
50	1.5%
60	1.5%
65	1.5%

Pensioners

Yield curve

5.22 The gross discount rates are determined with regard to the all bond yield curve on the valuation date. I believe an appropriate matched investment strategy for the fund would reflect an asset profile of primarily bond investments. I have therefore used the yield curve as the discount rate, as implied by the efficient market hypothesis. The graph below compares the yields as at 31 March 2018 and 31 March 2019:



- 5.23 The expected future cashflows at each duration have been discounted using the yield implied by the yield curve at each specific duration.
- 5.24 The average discount rate which produces equivalent results is 9.44% p.a. compared to the single discount rate of 8.58% in the previous valuation.

- 5.25 No provision for asset management fees has been made, since the out-performance over the benchmark produced by active asset management should exceed the asset management fee.

Pension increases

- 5.26 Pensions in course of payment are increased by 2% per annum in terms of the rules of the fund and sub-funds. In addition, a reserve is held to allow for a change in the pension increase target. The allowance made for the fund targets pension increases of 75% of CPI by using a net discount rate of 4.82% ($1.0957 / 1.0453 - 1$) to value the liabilities.

Demographic assumptions

- 5.27 The demographic assumptions have been retained from the previous valuation, since at this point we do not have sufficient demographic history for the fund to warrant a change in these assumptions. We propose that a mortality investigation be undertaken at a future date so that we may verify the appropriateness of the demographic assumptions applied.
- 5.28 The fund specific Transnet Pre- and Post-retirement Mortality Tables have been adopted to represent the expected mortality of all members. The full mortality table is available in appendix 6, while an extract is shown below.

Age	Pre Ret Mortality		In Health		Post Ret Mortality	
	Male	Female	Male	Female	Male	Female
45	0.37%	0.37%	0.88%	0.44%	1.90%	0.69%
50	0.52%	0.52%	1.60%	1.02%	2.14%	0.82%
55	0.74%	0.74%	2.60%	1.78%	2.38%	0.97%
60	1.05%	1.05%	3.60%	2.64%	2.62%	1.23%
65	1.49%	1.49%	-	-	2.86%	1.72%
70	2.07%	2.07%	-	-	4.20%	2.59%
75	-	-	-	-	6.39%	4.18%

Marriage assumption

- 5.29 It is assumed that 80% of members and pensioners are married. Also, it is assumed that a male is, on average, 4 years older than his spouse. This is in line with the Alexander Forbes Best Estimate assumption for marriage, used where fund-specific marriage statistics are not readily available.

Solvency reserve basis

- 5.30 I have determined the level of the solvency reserve using the discontinuance matched approach as set out in Circular PF 117, issued by the Financial Service Board. PF 117 states that the combination of the liabilities calculated on a best estimate basis, together with the solvency reserve, "will result in the reporting of actuarial surplus on a basis consistent with international practice".
- 5.31 Although this fund is not subject to the Pension Funds Act (PFA) and Financial Services Conduct Authority (FSCA) circulars, the circular is considered appropriate for this fund and is in line with general actuarial practice as applied by actuaries in South Africa.
- 5.32 The assumptions that differ from my best estimate valuation assumptions are:
- Gross discount rate (actives): 9.20% (this is again the yield on 10 year fixed interest gilts adjusted for the reasonable cost of implementing and maintaining an investment strategy of partially matching such assets to the liabilities of the fund, i.e. 0.375%).
 - Gross discount rates (pensioners): This is the yield curve, as discussed in section 5.22, but adjusted for the reasonable cost of maintaining an investment strategy of matching such assets to the liabilities of the fund (0.5% for unmatched), but taking into account the current matching and associated reduced risks (0.25% for matched).
 - Post-retirement mortality: The fund specific mortality tables were again rated down by 1 year to allow for possible future mortality improvements.

6. VALUATION RESULTS

- 6.1 In order to determine the level of solvency of the fund, it is necessary to compare the total assets of the fund with the total liabilities. The fund is solvent when the value of the assets exceeds the value of the liabilities, i.e. a funding level of 100% or greater. The funding level is the ratio of the value of the assets to the value of the liabilities of the fund at the valuation date.

Value of liabilities

- 6.2 The present value of the actuarial liabilities of the fund in respect of members as at the valuation date is as follows:

	PRASA sub-fund		Total fund
	31 March 2018 (R'million)	31 March 2019 (R'million)	31 March 2019 (R'million)
Active members	45	41	669
Pensioners	425	397	3 622
Contribution reserve	2	1	23
Solvency reserve			
- Actives	3	3	37
- Pensioners	34	29	221
Pension increase reserve*	101	83	244
Total liabilities	610	554	4 813

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

Value of assets

- 6.3 For valuation purposes, the value of the assets is R1 261 million.

Contribution reserve

- 6.4 The contribution reserve as at the valuation date is determined as the difference between the required contribution rate under the Attained Age Method and the actual contribution rate paid to the fund, multiplied by the present value of all expected future salaries. The value of the contribution reserve as at the valuation date is R1 million.

Value of solvency reserve

- 6.5 I recommend the trustees maintain a solvency reserve to afford protection against investment and mortality risk. This reserve is calculated as the difference between the fund's liabilities on the valuation basis and the liabilities on the solvency basis.
- 6.6 The total recommended solvency reserve as at the valuation date amounts to R32 million.

Pension increase reserve

- 6.7 The pension increase policy targets pension increases of 75% of the increase in CPI.
- 6.8 Should these pension increases be granted in future, the value of liabilities will increase significantly. I, therefore, recommend a reserve be held equal to the increase in liabilities of R83 million.

Funding level:

- 6.9 Comparing the value of the assets with the past service liabilities produces the following results:

	PRASA sub-fund		Total fund
	31 March 2018 (R'million)	31 March 2019 (R'million)	31 March 2019 (R'million)
Market value of assets	1 275	1 261	9 163
Value of accrued liabilities	470	438	4 291
Surplus/(Deficit) before contingency reserves	805	823	4 872
Contribution reserve	2	1	23
Pension increase reserve*	101	83	244
Solvency reserve	37	32	258
Surplus/(Deficit)	365	707	4 347
Funding level	209.0%	227.3%	190.3%

* Reserve allowing for the potential impact on the financial position of granting pension increases in line with the pension increase policies of the SAA and PRASA sub-funds.

- 6.10 The fund's assets exceed its accrued liabilities. As at the valuation date I am able to confirm that the fund is financially sound.

Required future contribution rate

- 6.11 The required future contribution rate to meet the costs of benefits accruing after the valuation date, per category of membership in the PRASA sub-fund, is as follows:

	% of Pensionable Salaries		
	All members	PRASA sub-fund	
		Footplate	Other
Current contributions			
- Members	7.572%	8.500%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	18.597%	19.525%	18.525%
Required contribution rate			
- Future service (based on Rules)	22.779%	29.284%	22.276%
- Addition for benefit improvements	3.976%	5.467%	3.861%
- Contribution reserve subsidy	<u>-8.159%</u>	<u>-15.227%</u>	<u>-7.612%</u>
	18.597%	19.525%	18.525%

- 6.12 For comparison, the required future contribution rate to meet the costs of benefits accruing after the valuation date, per category of membership in the Transport Pension Fund, is as follows:

	% of Pensionable Salaries			
	All members	Transport Pension Fund		
		Footplate	Flight Deck	Other
Current contributions				
- Members*	8.007%	8.500%	11.000%	7.500%
- Employer	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>	<u>11.025%</u>
	19.032%	19.525%	22.025%	18.525%
Required contribution rate				
- Future service (based on Rules)	23.566%	27.458%	31.935%	22.057%
- Addition for benefit improvements	1.402%	0.547%	4.023%	1.006%
- Contribution reserve subsidy	<u>-5.937%</u>	<u>-8.480%</u>	<u>-13.933%</u>	<u>-4.538%</u>
	19.032%	19.525%	22.025%	18.525%

* Average contribution of all members of the Transport Pension Fund

Comment in terms of APF 205

- 6.13 Whilst the value of the liabilities is based on best estimate assumptions, where relevant, and the solvency and other contingency reserves established by the trustees on my advice allow for some fluctuations in asset values and / or unexpected changes in liabilities, there is no guarantee that these reserves will prove sufficient in practice. Conversely, it is possible that the reserves may prove to be more than sufficient.
- 6.14 If the reserves prove to be insufficient, management action will be required to rectify the position. The uncertainty of the adequacy or otherwise of the reserves held is unavoidable and the actual outcome can only be determined when the fund ceases to have any further liabilities.

7. SUMMARY AND RECOMMENDATIONS

- 7.1 The market value of assets as at the valuation date is R1 261 million compared to the accrued liabilities of R438 million.
- 7.2 The actuarial valuation of the Transport Pension Fund: PRASA sub-fund revealed a surplus of R707 million after allowing for a contribution reserve of R1 million, a solvency reserve of R32 million and a pension increase reserve of R83 million, with a funding level of 227.6% as at the valuation date.
- 7.3 The fund's assets exceed its accrued liabilities. As at the valuation date I am able to confirm that the fund is financially sound.
- 7.4 I am satisfied with the appropriateness of the matching of the fund's assets and liabilities (see section 4.10).



A R Pienaar

Fellow of the Actuarial Society of South Africa
and the Fellow of the Institute of Actuaries
in my capacity as the valuator of the fund
and as an employee of
Alexander Forbes Financial Services (Pty) Ltd

For the purposes of professional regulation the primary professional regulator of the signatories to this report is the Actuarial Society of South Africa.

August 2019

MLK

R. Pienaar

APPENDIX 1: SUMMARY OF BENEFITS AND CONTRIBUTIONS

A summary of the main benefits is given below. Full details are contained in the registered rules of the fund.

The Rules provide for special benefits on specific contingencies for particular categories of members. These have not been summarised here. Only the generic benefits have been shown.

Contributions

Member Contributions

Members contribute a percentage of their pensionable salary to the fund, depending on their membership category, as set out below:

Membership Category	% of Pensionable Salaries
Footplate Personnel	8.5%
Other Personnel	7.5%

Employer Contributions

The employer currently contributes to the fund at a rate of 11.025% of pensionable salaries in respect of all members. In addition, the employer covers the administration expenses of the fund.

Definitions

Average Pensionable Salary

This is the average pensionable salary of the member in the last year of pensionable service.

Retirement Dates

For the different categories of membership, the minimum and normal retirement dates are the month in which the following age is attained:

Membership Category	Retirement Age (years)	
	Minimum	Normal
Footplate Personnel	55	58
Other Personnel	60	63

Pensionable Service

This is the completed service in years, months and days since joining the fund, during which contributions were received. Pensionable service includes any periods of linking, antedated and casual service for which contributions were made, as defined in the rules of the fund, as well as any unpaid leave for which the member elected to contribute.

Accrual Factor

For the different categories of membership, the Accrual Factor is determined as follows as at the minimum and normal retirement dates:

Membership Category	Retirement Age (years)	
	Minimum	Normal
Footplate Personnel	1/55 th	1/49 th
Other Personnel	1/60 th	1/54 th

Gratuity Factor

For the different categories of membership, the Gratuity Factor is determined as follows (irrespective of the date of retirement):

Membership Category	Gratuity factor
Footplate Personnel	13.50
Other Personnel	12.00

Retirement Benefits

A member is entitled to the following benefits on attaining the minimum retirement age:

- An annual pension equal to:
 $Average\ Pensionable\ Salary \times Pensionable\ Service \times Accrual\ Factor \quad (1)$
 Plus
- A gratuity equal to:
 $1/3^{rd} \times (1) \times Gratuity\ Factor$

The rules do not permit late retirement after the attainment of the age limit.

Ill-health Retirement

A member who retires due to ill-health is entitled to their actuarial value.

Death in Service Benefits

On the death of an active member, the following benefits are payable:

- an annual dependants' pension equal to 70% of the annual pension that the member would have been entitled to had they retired at the date of death, but with Pensionable Service increased by the period from the date of death until the normal retirement date; plus
- the gratuity that the member would have been entitled to had they retired at the date of death but with Pensionable Service subject to a minimum of 10 years.

Where the member dies before reaching the minimum retirement date, the Accrual Factor as at the minimum retirement date applies for the above calculations.

- If the member has no dependants, the benefit on voluntary resignation is paid to the nominees or estate.

Death in Retirement

On the death of a pensioner, a dependants' pension equal to 70% of the deceased pensioner's pension at the date of death is payable.

Where the pensioner dies before attaining the normal retirement date, the dependants' pension is increased by the following ratio:

(Pensionable Service plus the period from the date of death to the normal retirement date)

Divided by

(Pensionable Service)

Pension Increases

The fund's rules provide for a guaranteed pension increase of 2% per annum which is implemented on the commencement anniversary of the pension.

The fund makes allowance for discretionary pension increases in addition to the guaranteed 2% per annum. The pension increase policy of the PRASA sub-fund targets pension increases of 75% of the increase in CPI. For the sake of actuarial prudence this has been included as part of the fund's contingency reserves.

Resignation Benefits

On resignation, the fund grants members their actuarial value.

APPENDIX 2: MEMBER RECONCILIATION**Active members**

	PRASA sub-fund	Total fund
Active 31 March 2018	23	244
Adjustment*	5	8
Revised	28	252
Exits	(3)	(44)
- Death	-	(4)
- Ill-health	-	(1)
- Withdrawals	-	(3)
- Retirement	(3)	(30)
- Transfers out	-	(6)
Active 31 March 2019	25	208

*These members were reinstated following a labour court appeal

Pensioners

	TOTAL PRASA sub-fund	Total fund
Pensioners 31 March 2018	890	5 506
Adjustment	=	=
Revised	890	5 506
New pensioners	21	126
Exits	(46)	(256)
Pensioners 31 March 2019	865	5 376

FORMER ACTIVE MEMBERS

	PRASA sub-fund	Total fund
Pensioners 31 March 2018	459	2 955
Adjustment	=	=
Revised	459	2 955
New pensioners	2	28
Exits	(30)	(136)
Pensioners 31 March 2019	431	2 847

Dependants

SPOUSES

	PRASA sub-fund	Total fund
Pensioners 31 March 2018	405	2 354
Adjustment	=	=
Revised	405	2 354
New pensioners	19	97
Exits	(8)	(55)
Pensioners 31 March 2019	416	2 396

CHILDREN

	PRASA sub-fund	Total fund
Pensioners 31 March 2018	26	197
Adjustment	=	=
Revised	26	197
New pensioners	=	1
Exits	(8)	(65)
Pensioners 31 March 2019	18	133

APPENDIX 3: INDIVIDUAL MEMBERSHIP INFORMATION

Active members

MALES

Age Band	Number	Totals		Average per member		
		Salary (R)	Accrued Liability (R)	Salary (R)	Accrued Liability (R)	Service
0 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-
35 - 39	-	-	-	-	-	-
40 - 44	-	-	-	-	-	-
45 - 49	1	290 641	898 833	290 641	898 833	16.42
50 - 54	3	984 815	8 130 707	328 272	2 710 236	32.86
55 - 59	6	963 723	6 484 953	160 621	1 080 826	28.63
60+	15	3 182 100	25 098 023	212 140	1 673 202	27.83
Total	25	5 421 279	40 612 519	216 851	1 624 501	28.17

Pensioners

FORMER ACTIVE MEMBERS

Age Band	Number	Males		Females	
		Total Annual Pension (R)	Average Annual Pension (R)	Total Annual Pension (R)	Average Annual Pension (R)
0 - 54	4	340 152	85 038	-	-
55 - 59	13	923 304	71 023	-	-
60 - 64	28	3 340 812	119 315	-	-
65 - 69	82	10 572 360	128 931	1	69 756
70 - 74	175	14 429 304	82 453	2	216 276
75 - 79	105	4 290 480	40 862	3	89 112
80 - 84	17	476 460	28 027	-	-
85+	1	16 812	16 812	-	-
Total	425	34 309 684	80 917	6	375 144

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Dependants

SPOUSES

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 54	-	-	-	66	2 200 344	33 339
55 - 59	-	-	-	73	1 849 116	25 330
60 - 64	1	106 704	106 704	80	2 090 676	26 133
65 - 69	-	-	-	105	2 891 160	27 535
70 - 74	-	-	-	60	1 494 240	24 904
75 - 79	1	36 228	36 228	26	498 108	19 158
80 - 84	-	-	-	4	96 540	24 135
85+	-	-	-	-	-	-
Total	2	142 932	71 433	414	11 120 184	26 860

CHILDREN

Age Band	Number	Males		Number	Females	
		Total Annual Pension (R)	Average Annual Pension (R)		Total Annual Pension (R)	Average Annual Pension (R)
0 - 4	-	-	-	-	-	-
5 - 9	1	25 452	25 452	-	-	-
10 - 14	1	2 220	2 220	1	2 220	2 220
15 - 19	2	4 368	2 184	8	61 356	7 670
20+	4	22 284	5 571	1	3 036	3 036
Total	8	54 324	3 791	10	66 612	8 661

APPENDIX 4: ANALYSIS OF CHANGE IN FINANCIAL POSITION

The valuation at 31 March 2019 disclosed a surplus in assets of approximately R707 million after taking into account the recommended reserves. The previous valuation at 31 March 2018 showed a surplus of some R665 million on the market value of assets.

The factors that led to a change of approximately R42 million have been analysed according to source and the results of this analysis are given in the table that follows:

Item	R'million
Valuation Surplus/(Deficit) as at 31 March 2018	635
Interest on valuation surplus/(deficit)	57
Investment return	(70)
Salary/Earnings experience	-
Pension increases	(5)
Expense deficit	(1)
Ad hoc bonuses	(4)
Change in actuarial reserve	1
Change of basis	48
Other income	-
Miscellaneous	16
Valuation Surplus/(Deficit) as at 31 March 2019	707

The individual items are discussed in the following paragraphs.

Interest on valuation surplus/(deficit)

Interest at the previous period's assumed valuation rate on the previous surplus produced a profit of R57 million over the inter-valuation period.

Investment return

The internal rate of return achieved within the fund (approximately 6.1%) was lower than that anticipated on the previous valuation basis of 8.62% for active members and an effective 8.62% for pensioners. This resulted in an investment strain of R70 million over the inter-valuation period.

Salary/Earnings experience

The increase in salaries over the year (approximately 6.74%) was lower than that anticipated on the previous valuation basis of 7.20% and an allowance for merit increases. This resulted in a salary profit/strain of nil over the inter-valuation period.

Pension increases

The increase in pensions over the year (of 3.07%) was higher than that anticipated on the previous valuation basis of 2%. This resulted in a pension strain of R5 million over the inter-valuation period.

Expense deficit

Over the valuation period expenses were incurred which related to actuarial fees, audit fees and trading and consulting fees, as per the financial statements of the fund. All other expenses were met by the employer. This resulted in an expense strain of R1 million.

Ad hoc bonuses

During the inter-valuation period ad hoc bonus pensions were paid to pensioners of the fund. This resulted in a strain of R4 million.

Change in actuarial reserve

The change in the actuarial reserve was higher than that assumed on the previous valuation basis of 8.62%. This resulted in a profit of R1 million.

Change of basis

In the previous valuation a discount rate of 8.62% was assumed for active members, with annual salary increases based on a general percentage increase of 7.20% per annum and a merit scale. For pensioners the yield curve was used to discount future cashflows. These assumptions have since been updated. A discount rate of 9.57% is now assumed for active members, while annual salary increases are based on a general percentage increase of 7.04% and a merit scale. For pensioners, the yield curve has been updated. This change in basis, along with the subsequent change in solvency reserves, has resulted in a profit of R48 million.

Other income

A tax credit related to the class action against the fund was realised during the valuation period relating to the previous period. This resulted in a profit/strain of nil over the inter-valuation period.

Miscellaneous

There was a miscellaneous profit of R16 million arising from various sources, none of which are individually significant.

APPENDIX 5: DEMOGRAPHIC ASSUMPTIONS

Age	Pre Ret Mortality		Ill Health		Post Ret Mortality	
	Male	Female	Male	Female	Male	Female
45	0.37%	0.37%	0.88%	0.44%	1.90%	0.69%
46	0.39%	0.39%	0.94%	0.52%	1.95%	0.72%
47	0.42%	0.42%	1.00%	0.60%	1.99%	0.74%
48	0.45%	0.45%	1.20%	0.74%	2.04%	0.77%
49	0.48%	0.48%	1.40%	0.88%	2.09%	0.79%
50	0.52%	0.52%	1.60%	1.02%	2.14%	0.82%
51	0.56%	0.56%	1.80%	1.16%	2.19%	0.85%
52	0.60%	0.60%	2.00%	1.30%	2.24%	0.87%
53	0.64%	0.64%	2.20%	1.46%	2.28%	0.90%
54	0.69%	0.69%	2.40%	1.62%	2.33%	0.93%
55	0.74%	0.74%	2.60%	1.78%	2.38%	0.97%
56	0.79%	0.79%	2.80%	1.94%	2.43%	1.02%
57	0.85%	0.85%	3.00%	2.10%	2.48%	1.06%
58	0.91%	0.91%	3.20%	2.28%	2.52%	1.11%
59	0.98%	0.98%	3.40%	2.46%	2.57%	1.15%
60	1.05%	1.05%	3.60%	2.64%	2.62%	1.23%
61	1.13%	1.13%	3.80%	2.82%	2.67%	1.32%
62	1.21%	1.21%	4.00%	3.00%	2.72%	1.40%
63	1.30%	1.30%	4.20%	3.18%	2.77%	1.49%
64	1.39%	1.39%	4.40%	3.36%	2.81%	1.57%
65	1.49%	1.49%	-	-	2.86%	1.72%
66	1.60%	1.60%	-	-	3.10%	1.87%
67	1.71%	1.71%	-	-	3.35%	2.02%
68	1.83%	1.83%	-	-	3.59%	2.17%
69	1.95%	1.95%	-	-	3.83%	2.32%
70	2.07%	2.07%	-	-	4.20%	2.59%
71	-	-	-	-	4.57%	2.87%
72	-	-	-	-	4.95%	3.14%
73	-	-	-	-	5.32%	3.42%
74	-	-	-	-	5.69%	3.69%
75	-	-	-	-	6.39%	4.18%