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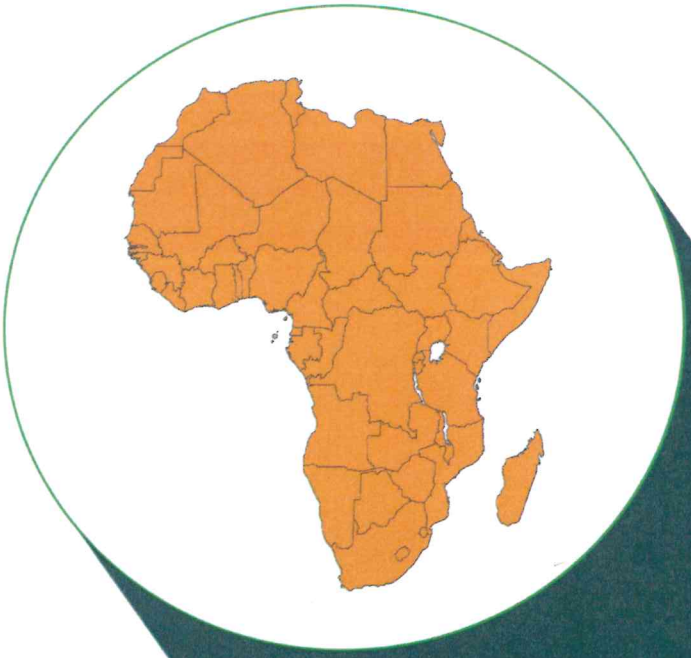
REPORT ON THE ACTUARIAL VALUATION OF KENYA RAILWAYS STAFF RETIREMENT BENEFITS SCHEME

AS AT 30 JUNE 2023



December 2023

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Schedules

1. INTRODUCTION

1.1 It is my pleasure to present this report on the actuarial valuation of the Kenya Railways Staff Retirement Benefits Scheme ("the Scheme").

1.2 The Scheme commenced on 04 May 2006. The Scheme was closed to new members as at 31 October 2006 ("Closure Date") with no future accrual of benefits for existing active members past the Closure Date.

1.3 The main objective of this actuarial valuation is to:

a) To establish the financial solvency of the Scheme as at 30 June 2023;

b) To advice on the treatment of any surplus/ deficit identified by the actuarial valuation;

c) To determine the Scheme's financial ability to extend the beneficiary period of payment of pension from 5 years to 10 years;

d) To advise on pension increases;

e) To determine the Scheme's financial ability to increase the minimum payable pension to Kshs 10,000 for both principal pensioners and beneficiaries;

f) To determine the Scheme's financial ability to pay last expense of Ksh 100,000 for principal pensioners;

g) To determine the Scheme's financial ability to pay NHIF monthly premiums for principal pensioners;

h) To fulfill the requirements of the Retirement Benefits Act and Regulations 2000, as amended;

1.4 The liabilities of the Scheme towards its members were calculated in accordance with the Trust Deed and Rules of the Scheme, as summarised in Schedule A, and were based on the membership of the Scheme as at 30 June 2023.

1.5 The previous actuarial valuation of the Scheme was carried out as at 30 June 2020 by Kenbright Actuarial and Financial Services Limited and their report was dated November 2020.

2. RELIANCES AND LIMITATIONS

Data

2.1. In preparing this report, we have relied on the data and information as provided to us. The results of the actuarial valuation are dependent on the accuracy and adequacy of the data provided.

2.2. As per general actuarial practice, where the data provided was not adequate, we made assumptions which we believe to be reasonable in order to fill in any gaps and errors identified in the data provided.

2.3. We have not independently verified the calculation of benefits and deferred benefits other than to clarify from the Administrator the method used in the computation of the benefits.

Benefit Interpretation

2.4. Being legal laymen, we have interpreted the provisions of the Trust Deed and Rules of the Scheme and cited legislation based on what we consider to be "common practice" in the computation and payment of benefits from similar retirement schemes. However, legal and judiciary interpretation may differ from our interpretation and may cause material differences in the results of our actuarial calculations.

Report Usage

2.5. This report is addressed to the Board of Trustees of the Scheme and should be treated as confidential. We however understand that the report will also be of relevance to the sponsoring employer of the Scheme. We give our express authority for the use of this report by the sponsoring employer.

2.6. Actuarial Services (E.A) Ltd ('ACTSERV'), its directors, partners, employees and agents shall not be held liable by any other third party to whom express and written authority by ACTSERV has not been given to utilise the information contained in this report.

3. SCHEME BENEFITS AND CONTRIBUTIONS

3.1. We were provided with the Trust Deed and Rules dated 3 May 2006.

3.2. A summary of the Scheme benefits as at 30 June 2023 is included as Schedule A to this report.

Closure of the Scheme

3.3. The Scheme was closed to new members as at 31 October 2006 ("Closure Date") with no future accrual of benefits for existing active members past the Closure Date.

Scheme Expenses

3.4. The Trust Deed and Rules state that the Trustees will pay the administrative and other expenses from the Scheme fund.

3.5. It would be expected that these expenses would be met from the investment returns of the Scheme as currently there are no members contributing into the Scheme.

3.6. As a percentage of fund value, the expenses have been at 1.1%, 2.2% and 1.1% for the respective financial years ending 30 June of 2021, 2022 and 2022. This represents an average of 1.4% of fund value.

Pension Increases

3.7. The Trust Deed and Rules provides for discretionary pension increases.

3.8. Our actuarial calculations have been performed allowing for pension increases of 5% p.a. for pensions in payment, increases of 3% p.a for deferred pensions effective from 1st January 2007 to 30th June 2017, and increases of 5% p.a for deferred pensions with effect from 1st July 2017 to the date of valuation, as advised.

Retirement Age

3.9. The Trust Deed and Rules provide that the normal retirement age of a member is 55. However, for the purposes of this valuation, we have applied a normal retirement age of 60 years.

Commutation Factors

3.10. The Trust Deed and Rules provide that a member may commute up to 1/3 of their pension based on the advice of the Actuary. For the purposes of this valuation, we have applied a commutation factor of 20 in line with the previous valuation.

4. DATA AND INFORMATION PROVIDED

Membership Data

4.1. We were provided with membership data of the Scheme as at 30 June 2023 by the Trustees and Scheme Administrator.

4.2. We have performed a range of checks and reasonability tests to verify the correctness of the data.

4.3. We are satisfied with the general accuracy of the information as required for the purposes of this actuarial valuation.

Pensioners

4.4. A summary of the data provided in respect of principal pensioners and beneficiaries is shown in the table below:

	Males	Females	Total
Number:			
Principal Pensioners	5,681	406	**6,087**
Beneficiaries	312	648	**960**
Total	**5,993**	**1,054**	**7,047**
Weighted average age (years):			
Principal Pensioners	69.8	65.2	**69.5**
Beneficiaries	78.2	68.4	**71.6**
Annual pension (Kshs 000):			
Principal Pensioners	772,271	67,825	**840,096**
Beneficiaries	36,701	83,476	**120,177**
Total	**808,972**	**151,301**	**960,273**

4.5. The following table shows a reconciliation of the pensioners at the current valuation date with the previous valuation date.

Pensioners Movements	
Number of Pensioners as at 30 June 2020	**7,084**
Suspended	(630)
Deceased	(607)
Lapsed	(13)
New Retirees	211
Omitted in Previous Valuation	42
Number of Pensioners as at 30 June 2023	**6,087**

Beneficiaries

4.6. The following table shows a reconciliation of the beneficiaries at the current valuation date with the previous valuation date.

Beneficiaries Movements	
Number of Beneficiaries as at 30 June 2020	695
Suspended	(69)
Stopped	(506)
New Beneficiaries	756
Omitted in Previous Valuation	84
Number of Beneficiaries as at 30 June 2023	**960**

Deferred Members

4.7. A summary of the deferred membership information as at the valuation date is as follows:

Deferred Lump sums

	Males	Females	Total
Number of members	612	68	**680**
Weighted average age (years)	54.9	54.0	**54.8**
Deferred Lump sums (Kshs 000)	136,913	16,718	**153,631**

Deferred Pensions

	Males	Females	Total
Number of members	612	68	**680**
Weighted average age (years)	55.8	54.7	**55.6**
Deferred Annual Pensions (Kshs 000)	1,255	179	**1,434**

4.8. The following table shows a reconciliation of the members with deferred benefits at the current valuation date with the previous valuation date.

Member with Deferred Benefits Movements	
Number of deferred members as at 30 June 2020	**933**
Retired and Pensionable	(172)
Retired and Non Pensionable	(86)
Suspended	(3)
Deceased	(7)
Omitted in Previous Valuation	15
Number of deferred members as at 30 June 2023	**680**

Suspended Pensioners

4.9. We were also with details of suspended pensioners as at the valuation date. The total number of suspended pensioners as at 30 June 2023 were 1269.

Outstanding Benefits

4.10. We were also provided with the scheme's pension arrears as at 30 June 2023.

5. SCHEME ASSETS

Scheme Cash Flows

5.1. The Scheme assets are invested by Co-op Trust Investment Services Limited. The custodian of the Scheme assets is KCB Bank Kenya Limited Custody Services.

5.2. We were provided with the audited accounts of the Scheme as at 30 June 2021, 30 June 2022 and 30 June 2023.

5.3. A summary of the Scheme assets as at the valuation date is shown in table below:

Asset Class	Value (Kshs 000)	Percentage	RBA Max %
Property*	34,266,991	94.49%	30.00%
Other fixed and Intangible Assets	7,149	0.02%	10.00%
Cash & Cash Equivalents	37,952	0.10%	5.00%
Net Current Assets*	1,952,487	5.38%	
	36,264,579	**100.00%**	

**Property allocation is above the RBA required limit of 30%*
**Current Assets are above the RBA required limit of 5%*

5.4. The Scheme's assets were valued at Kshs 36.26 B as at 30 June 2023. However, for the purposes of this valuation, investment property has been taken at 80% while all other assets have been taken at 100% of the values in the audited accounts.

Scheme Cash Flows

5.5. The cash flows over the 3–year period from 1 July 2020 to 30 June 2023 as reported in the audited accounts were as follows:

Figs Kshs 000

ITEM	30 June 2021	30 June 2022	30 June 2023	Total
Opening Balance	**37,845,430**	**32,033,282**	**34,953,382**	**37,845,430**
Prior year adjustment	9,320	0	(45,824)	(36,504)
Adjusted Opening Balance	**37,854,750**	**32,033,282**	**34,907,558**	**37,808,926**
Income				
Contributions	0	0	0	0
Total Income	**0**	**0**	**0**	**0**
Outgo				
Benefit Payable	873,905	1,549,037	1,093,602	3,516,544
Administrative expenses	345,754	763,187	385,853	1,655,049
Total Expenses	**1,219,659**	**2,312,224**	**1,479,455**	**5,011,338**
Investment Return				
Investment income	575,139	580,106	559,536	1,714,781
Realised Gains/(Loss)	(5,023,265)		(42,750)	(5,066,015)
Unrealised Gains		4,834,099	2,386,355	7,220,454
Finance Costs	(80,778)	(72,456)	(7,021)	(160,255)
Investment mngt exp	(72,906)	(109,427)	(59,644)	(241,977)
Total Investment Return	**(4,601,810)**	**5,232,322**	**2,836,476**	**3,466,988**
Closing Balance	**32,033,282**	**34,953,382**	**36,264,579**	**36,264,579**

Return on Scheme Assets

5.6. The table below shows a summary of the estimated rate of return (using hardy's formula) earned on the Scheme assets in each of the respective financial years.

Year Ending	Return Earned on Net Assets
30 June 2021	(12.4)%
30 June 2022	16.9%
30 June 2023	8.3%
Annualised Average	**3.5%**

5.7. The estimated time-weighted average return on Scheme assets over the 3 - year period to 30 June 2023 is 3.5% p.a net of investment expenses. This is below the assumed rate of return of 10% p.a on the scheme assets.

6. VALUATION METHODOLOGY AND ASSUMPTIONS

Valuation Method

6.1. We have used the Attained Age Method ("AAM Method") to value the liabilities of the Scheme.

6.2. This involves first making an estimate of the projected benefits that will be payable to each individual in each future year based on the valuation probability assumptions. The present value at the valuation date of these benefits is then obtained using the valuation rate of discount.

6.3. The AAM Method then attempts to proportion a value to benefits 'earned' as at the valuation date based on the value of the discounted benefits and the period of service to the valuation date. This past liability value is termed the "value of accrued benefits".

6.4. The main aim of the actuarial valuation is then to compare the value of assets as at the valuation date against the value of accrued benefits to determine the financial solvency of the Scheme.

6.5. The AAM Method further attempts to estimate the contribution rate as a percentage of salaries (both employees and employers) that would be required to sustain the future accrual of benefits in each future year assuming that the Scheme will continue in perpetuity on an on-going basis.

Valuation Assumptions

6.6. In arriving at the value of accrued benefits, various assumptions have to be made. These assumptions are divided into demographic and financial assumptions.

6.7. Demographic assumptions relate to the probability of an event occurring that would lead to the payment of a benefit. These include the mortality, withdrawal, retirement and similar assumptions.

6.8. Financial assumptions on the other hand relate to those factors that affect the actual value/ amount of the benefit paid out. These would ideally include the rate of salary increases and the valuation rate of discount.

6.9. The financial assumptions have a greater bearing on the results of the actuarial valuation, particularly the relative differences between the assumptions as opposed to their absolute values.

6.10. By making use of prudent yet realistic valuation assumptions, a prudent value of accrued benefits would be obtained.

6.11. The key financial assumptions we have used are as follows:

Rate of discount	10%p.a.
Rate of increases for pensions in payment	5% p.a
Rate of increase of deferred pensions while in deferment	3% p.a up to 30 June 2017 5% p.a thereafter
Rate of revaluation of deferred lump sums	8%p.a.
Scheme Assets	80% of market value for Investment Property 100% for all other assets

6.12. Schedules B and C of this report contain detailed descriptions of the valuation methodology and assumptions.

7. VALUATION RESULTS

Valuation Position

7.1. The table below shows the results of our actuarial calculations. The value of the liabilities and assets as at the previous valuation date was taken from the previous actuarial valuation report.

Figs Kshs

	30 June 2020 (000,000)	30 June 2023 (000,000)
Value of:		
Future Benefits to Current Pensioners	11,974	7,708
Future Benefits to Current Beneficiaries	169	314
Deferred Members Accrued Benefits	2,449	2,975
Suspended Pensioners	535	832
Outstanding Benefits(Pension Arrears)		1,176
Future Expense Value	2,030	1,745
Additional Reserves	2,279	2,601
Total Liabilities	**19,436**	**17,350**
Value placed on Scheme Assets	**32,335**	**29,412**
Surplus/ (Deficit)	**12,899**	**12,061**
Funding Level	**166.4%**	**169.5%**

7.2. The results of the actuarial valuation as at 30 June 2023 show a surplus of Kshs 12.06B. The funding level (ratio of Scheme assets to total liabilities) is 169.5%.

7.3. The Scheme therefore meets the minimum funding requirement of 100% prescribed by the Retirement Benefits Regulations 2000.

7.4. We have made a provision of Kshs 1.7B for expenses and Kshs 2.6B for reserves due to longevity, future joiners and possible data errors in line with the previous actuarial report.

7.5.

Analysis of Surplus

7.6. The last actuarial valuation as at 30 June 2020 disclosed an actuarial Surplus of Kshs 12.89B and a funding level of 166.4%. The current valuation as at 30 June 2023 discloses a surplus of Kshs 12.06B and a funding level of 169.5%.

7.7. The main factors that have contributed to the surplus are:

a) The gains on revaluation of property over the inter-valuation period had a positive financial impact on the Scheme.

b) The average investment return during the valuation period was lower than the assumption used in the actuarial basis. This had a negative financial impact on the Scheme.

c) Decreased pensioner membership during the inter valuation period caused a significant drop in liability. This had a positive financial impact on the Scheme.

d) Higher pension increases during the inter valuation period than were assumed in the previous actuarial basis. This had a negative financial impact on the Scheme.

7.8. Overall, these and other items have had a positive impact on the financial position of the Scheme.

8. COSTING OF PENSION INCREASES

8.1. We have been requested by the Board of Trustees to advice on the Scheme's financial implications of increasing monthly pensions to pensions in payment.

8.2. We have carried out calculations to illustrate the potential impact on the Scheme's financial position of granting pension increases as follows:

a) Costing of Guaranteed Pension Increases

8.3. Computations for guaranteed pension increases of 5%, 7% and 9%, with and without a minimum monthly pension of Kshs 10,000 for the principal pensioners, for spouse pensioners, for child pensioners, and for suspended pensioners have been undertaken. It should be noted that where the minimum pension is applied, the pension is first increased to the minimum level and then the percentage increases applied. The scenarios considered under this option are as follows:

Core Scenario: The existing pension increases of 5% p.a

Scenario A-1: The existing pension increases of 5% p.a but with a minimum monthly pension of Kshs 10,000;

Scenario B-1: Guaranteed pension increases of 7% p.a with no minimum monthly pension;

Scenario C-1: Guaranteed pension increases of 7% p.a. but with a minimum monthly pension of Kshs 10,000;

Scenario D-1: Guaranteed pension increases of 9% p.a with no minimum monthly pension;

Scenario E-1: Guaranteed pension increases of 7% p.a. but with a minimum monthly pension of Kshs 10,000;

Scenario F-1: For principal pensioners only, guaranteed pension increases of 5% p.a.,with a minimum monthly pension of Kshs 10,520 for pensioners currently earning below Kshs. 10,520, and with a top-up of Kshs.1,000 for pensioners currently earning above Kshs 10,520. The amount Kshs 10,520 has been chosen in line with the current trivial pension.

8.4. The table below shows a summary of the resulting financial costs to the Scheme for the various scenarios:

Figs Kshs '000,000

Scenario	Core Basis No Min,5% Increases	A-1 Min 10,000, 5% Increases	B-1 No Min, 7% increases	C-1 Min 10,000, 7% increases	D-1 No Min, 9% increases	E-1 Min 10,000, 9% increases	F-1 Min 10,520 for pension below 10,500, +1000 for pension >10,520,5% increases
Value of:							
Future Benefits to Current Pensioners	7,708	8,797	8,767	10,031	10,094	11,582	9,288
Future Benefits to Current Beneficiaries	314	377	321	385	328	393	314
Deferred Members Accrued Benefits	2,975	2,975	3,082	3,082	3,238	3,238	2,975
Suspended Pensioners	832	1,164	914	1,276	1,014	1,414	832
Outstanding Benefits	1,176	1,176	1,176	1,176	1,176	1,176	1,176
Future Expense Value	1,745	1,745	1,745	1,745	1,745	1,745	1,745
Additional Reserves	2,601	2,898	2,852	3,190	3,170	3,560	2,917
Total Liability	**17,350**	**19,132**	**18,856**	**20,884**	**20,764**	**23,107**	**19,247**
Assets	**29,412**	**29,412**	**29,412**	**29,412**	**29,412**	**29,412**	**29,412**
Surplus/Deficit	**12,061**	**10,280**	**10,556**	**8,528**	**8,648**	**6,304**	**10,165**
Funding Level	**169.5%**	**153.7%**	**156.0%**	**140.8%**	**141.6%**	**127.3%**	**152.8%**
Additional Cost		**1,781**	**1,506**	**3,534**	**3,414**	**5,757**	**1,897**

8.5. If the Scheme is to provide for the existing pension increases of 5% p.a after allowing for minimum pension of Kshs 10,000 per month for the principal pensioners, for spouse pensioners, for child pensioners, and for suspended pensioners, the additional cost to the Scheme would be Kshs 1.78B.

8.6. If the Scheme is to provide for the existing pension increases of 5% p.a after allowing for minimum monthly pension of Kshs 10,520 for pensioners currently earning below Kshs. 10,520, and allowing for a top-up of Kshs.1,000 for pensioners currently earning above Kshs 10,520, for the principal pensioners only, the additional cost to the Scheme would be Kshs 1.897B.

b) Extending beneficiary pension payment period

8.7. We have also been requested by the Board of Trustees to advice on the Scheme's financial implications of extending beneficiary pensions payment period from 5 years to 10 years.

8.8. We note that the original Trust Deed and Rules dated 3 May 2006 stipulates that the maximum period for pension payment to beneficiaries is 5 years.

8.9. The scenarios considered under this option are as follows:

Scenario A-1: The existing benefit structure but with a beneficiary payment period of 10 years

Scenario B-1: The existing benefit structure, with a beneficiary payment period of 10 years and a minimum monthly pension of Kshs. 10,000 for principal pensioners, for spouse pensioners, for child pensioners, and for suspended pensioners.

8.10. The table below shows the impact to the financial position of the Scheme.

Figs Kshs '000,000

Scenario	Core Basis Current Structure	Extending Beneficiary Payment Period from 5 to 10 years	Extending Beneficiary Payment Period from 5 to 10 years with Min Pension of 10,000
Value of:			
Future Benefits to Current Pensioners	7,708	7,708	8,797
Future Benefits to Current Beneficiaries	314	671	802
Deferred Members Accrued Benefits	2,975	2,975	2,975
Suspended Pensioners	832	889	1,227
Outstanding Benefits	1,176	1,176	1,176
Future Expense Value	1,745	1,745	1,745
Additional Reserves	2,601	2,683	2,995
Total Liabilities	**17,350**	**17,846**	**19,716**
Value Placed on Scheme Assets	**29,412**	**29,412**	**29,412**
Surplus/Deficit	**12,061**	**11,566**	**9,695**
Funding Level	**169.5%**	**164.8%**	**149.2%**
Additional Cost		**496**	**2,366**

8.11. If the Scheme is to extend the beneficiary payment period to 10 years, the additional cost to the Scheme would be Kshs 496m.

8.12. If the Scheme is to provide for a minimum monthly pension of Kshs 10,000 to all pensioners and extend the beneficiary payment period to 10 years, the additional cost to the Scheme would be Kshs 2.37B.

c) Incorporating A Last Expense of Kshs 100,000

8.13. We have been requested by the Board of Trustees to also advice on the Scheme's financial implications of incorporating a last expense benefit of Kshs. 100,000 per principal pensioner upon death.

8.14. The table below shows the impact to the financial position of the Scheme.

Figs Kshs '000,000

	Core Scenario	Last Expense of Kshs 100,000
Value of:		
Future Benefits to Current Pensioners	7,708	7,945
Future Benefits to Current Beneficiaries	314	314
Deferred Members Accrued Benefits	2,975	2,975
Suspended Pensioners	832	890
Outstanding Benefits	1,176	1,176
Future Expense Value	1,745	1,745
Additional Reserves	2,601	2,660
Total Liabilities	**17,350**	**17,704**
Value Placed on Scheme Assets	**29,412**	**29,412**
Surplus/Deficit	**12,061**	**11,707**
Funding Level	**169.5%**	**166.1%**
Additional Cost		**354**

8.15. Adopting a last expense of Kshs. 100,000 would result in a surplus of Kshs 11.71B. The funding level would fall to 166.1%. The additional cost would be Kshs 354m.

d) Impact of incorporating NHIF monthly premiums

8.16. We have been requested by the Board of Trustees to also advice on the Scheme's financial implications of paying members' NHIF monthly premiums of members.

8.17. The table below shows the impact to the financial position of the Scheme if the NHIF monthly premiums were incorporated.

Figs Kshs '000,000

	Core Scenario	NHIF Monthly Premiums
Value of:		
Future Benefits to Current Pensioners	7,708	8,053
Future Benefits to Current Beneficiaries	314	314
Deferred Members Accrued Benefits	2,975	2,975
Suspended Pensioners	832	878
Outstanding Benefits	1,176	1,176
Future Expense Value	1,745	1,745
Additional Reserves	2,601	2,679
Total Liabilities	**17,350**	**17,819**
Value placed on Scheme Assets	**29,412**	**29,412**
Surplus/ (Deficit)	**12,061**	**11,593**
Funding Level	**169.5%**	**165.1%**
Additional Cost		**469**

8.18. Adopting NHIF monthly premiums for principal pensioners would result in a surplus of Kshs 11.59B. The funding level would fall to 165.1%. The additional cost would be Kshs 469m.

9. FUNDING REQUIREMENTS

Ongoing Contributions

9.1. Given that there currently are no active members in the Scheme, no regular contributions are to be made into the Scheme.

Impact of Surplus

9.2. We have calculated the surplus of the Scheme to be Kshs 12.06B.

9.3. The surplus may be used to improve members benefits. Further discussions are required on the same with the Trustees.

10. CONCLUSION

10.1. The Kenya Railways Staff Retirement Benefits Scheme was valued as at 30 June 2023. The actuarial valuation disclosed a surplus of Kshs 12.06B. The funding level of the Scheme as at the valuation date was 169.5%.

10.2. The Scheme's funding position is above the minimum funding requirement of 100% as prescribed by the Retirement Benefits Authority Regulations, 2000.

10.3. We would recommend that the surplus may be used to improve members benefits. Further discussions are required on the same with the Trustees.

10.4. We have provided various options for pension increases.

10.5. We have provided the impact to the financial position of the Scheme if the period of payment of the beneficiary pensions was extended from 5 years to 10 years.

10.6. We have further provided the impact to the financial position of the Scheme if a last expense benefit of Ksh 100,000 was to be incorporated.

10.7. We have also provided the impact to the financial position of the Scheme if monthly payments of NHIF premiums for the current pensioners was to be implemented.

10.8. We also note that the Scheme is exposed to significant liquidity risk due to high concentration of Scheme's assets in property.

10.9. We recommend that the next actuarial valuation of the Scheme be undertaken no later than 30 June 2026 as per the requirements of the RBA Regulations.

10.10. Finally, we would like to thank the Scheme Trustees and the Scheme Administrator for providing us with the necessary data and information required to perform this actuarial valuation of the Scheme.

Signed in my capacity as an employee of Actuarial Services (E.A) Ltd.

Abed Mureithi
Fellow of the Institute and Faculty of Actuaries

21 December 2023
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SCHEDULE A. SUMMARY OF THE STRUCTURE OF THE SCHEME

A.1 The following is a brief summary of the main benefits of the Scheme. For full details of the benefit structure the Trust Deed and Rules should be consulted.

Definitions	
Commencement Date	04 May 2006
Entry Date	The Commencement Date and thereafter the first day of each month thereafter.
Closure Date	31 October 2006
Eligible Employee	Employee of the Sponsor on permanent and pensionable terms aged 18-50 years
Normal Retirement	Age 55 years
Early Retirement	Age 50 years
Pensionable Service	Continuous Service between the Member's Entry Date and the earlier of the date of leaving service date and Closure Date
Final Pensionable Salary	Member's Pensionable Salary at Closure Date
Maximum Pension	4/5 ths of Final Pensionable Salary.
Benefits	
Normal Retirement	Annual Pension equal to 1/480th of Final Pensionable Salary for each complete month of Pensionable Service.
Early Retirement	As for Normal Retirement but reduced for early retirement.
Late Retirement	As for Normal Retirement but enhanced for late

	retirement
Ill-Health Retirement	Annual Pension equal to 1/480th of Final Pensionable Salary for each complete month of Pensionable Service. In the event of death within 5 years, a lumpsum equal to the member's pension payment over the balance of the 5 year period
Death-in-service before attaining normal retirement age	*A member with at least 3 years of Pensionable Service,* Dependant's Pension equal to the pension that the member would have received had he/she retired on medical grounds at date of death payable for 5 years following death Lump sum equal to three times the member's Pensionable Salary at date of death *A member with less than 3 years of Pensionable Service,* Lump sum equal to two times the member's Pensionable Salary at date of death.
Death-in-service after attaining normal retirement age	Lump sum determined as though he had retired on the day before his death and elected to commute 1/3 of his pension
Death-in-Deferment	A gratuity equal to the total of member's accumulated contributions to the Scheme with interest
Death-in-retirement	Dependant's Pension equal to the pension that the member was receiving at date of death payable for 5 years following death
Leaving Service	*A member with less than 3 years of Pensionable Service,*

	Return of member's own accumulated contributions with interest plus a portion of the Sponsor's accumulated contributions with interest *A member with at least 3 years of Pensionable Service,* Cash equivalent of his deferred rights
Commutation	A member may commute up to 1/3 of their pension

SCHEDULE B. DESCRIPTION OF VALUATION METHODOLOGY

Valuation of Assets

B.1. For the purpose of this valuation assets have been taken at their market value as described in the previous section.

Valuation of Liabilities

B.2. The general methodology of the valuation process of the liabilities of a defined benefit arrangement is as follows:

- Assumptions have to be made for a number of items to express the expected future experience of the arrangement. For example we require assumptions for items such as the mortality (death experience) of individuals, expected withdrawal rates, investment returns etc.

- The future benefits expected to be paid to the current membership (active employees and pensioners) must be calculated. Using the specified assumptions, we would individually project the benefits that we would expect each person to receive from the scheme in each year in the future. For example, for a pensioner we would calculate the estimated amount of pension that we expect to be paid to him in each future year. For a still active member we would follow a similar process, but we would allow for the fact that the pension will only start at that individual's retirement date. Here we have to firstly project expected salary and service to retirement and only from that point on project future pension payments.

- The above projection is performed for each individual, and when the figures are added together an expected cashflow for each future year can be determined.

- The final step is to then discount these future cashflows back to the valuation date, using the discount or investment return rate as described in the assumption sections. The reason for discounting the cashflows is that we want a single figure liability in today's monetary terms. A payment of a set amount in the future is worth less than a similar payment amount today. For example, to make a payment of Kshs 10,000 ten years from now will cost a company less than making a payment of Kshs 10,000 now. We can expect to see substantial inflation and investment returns over a period of 10 years.

B.3. In summary, the valuation thus projects future outflow from the scheme given a set of assumptions, and then discounts these outflows to give a current value.

Vested Benefits

B.4. Benefits accrue a long time before they will actually be paid. For example, as retirement benefits are calculated based on years of employment (service) a 20 year old will start to accrue or earn retirement benefits immediately, even though these benefits will only be paid more than 35 years from now.

B.5. It is normal for liabilities of a pension scheme to be divided into two parts:

- Liabilities in respect of service or employment before the valuation date;
- Liabilities in respect of service after the valuation date.

B.6. Benefits arising from service before the valuation date are referred to as accrued benefits.

B.7. In an arrangement where actual assets are held to back the liabilities of a pension scheme it is considered prudent to hold an amount of assets at least equal to the accrued or vested benefits.

B.8. Benefits that have not yet been accrued will then be funded by future contributions to the scheme with annual contributions to the scheme being set at a level that will match the part of the future benefits that vest throughout the remaining working lifetimes of the in-service members.

B.9. If the assets of a scheme exceed the vested liabilities of that scheme, the scheme is said to be in a surplus and if vested liabilities exceed assets, the scheme is in a deficit.

B.10. The valuation will be performed as at a specified date, the valuation date, to provide a snapshot picture of the position of the arrangement on that date.

Valuation Assumptions

B.11. For the purpose of the actuarial valuation of the position of the Scheme, a range of actuarial assumptions have to be determined.

B.12. However, it is important to remember that the assumptions selected for the purpose of the valuation will only be a best estimate of an unknown future experience. As actual future experience differs from the assumptions, so actual retirement costs will differ from that calculated. Our assumptions are set for the long term and we can expect actual experience to deviate from that assumed, especially in the short term.

B.13. When selecting a set of assumptions it is important to ensure that all assumptions are consistent. For example, there is a natural correlation between the salary inflation and any investment return assumptions, and more or less the same valuation results will be achieved if both assumptions are increased or decreased by the same number of percentage points. The difference between these two figures, the "real" discount rate, is more important than the actual nominal figures.

B.14. The valuation basis selected is consistent with that used for other Kenyan retirement schemes and is our best estimate of the expected future long-term experience of the arrangement. We believe that the assumptions are unbiased and mutually compatible.

B.15. The following list covers the main assumptions that are required for this valuation:

Salary Increases

B.16. Salaries can generally increase because of inflation, merit increases and promotions. We have to make an assumption on future salary increases as the actual pension that will be payable to an employee from retirement date onward, will depend on his salary at the time of his retirement. We thus have to estimate what his salary will be at retirement using his current salary and some assumption on future salary increases. As retirement benefits are directly linked to salary, the higher the assumption on future salary increases the higher the liabilities under the arrangement.

B.17. As there is a direct link between general inflation in a country and the salary increases granted to employees, expectations on general inflation can be used to help set the salary inflation assumption.

Investment Return

B.18. If a retirement arrangement holds specific assets to back its liabilities, these assets will earn investment returns. Less money is thus required now to meet liabilities, as future investment returns can be used to fund some of the liabilities. The investment return assumption reflects the assumed return on assets that can be expected.

B.19. Once again, the relationship with the salary increase assumption is more important than the actual nominal figure. By comparing the historic returns on representative assets with historic inflation rates we are able to determine a suitable "real" interest rate. This is the rate by which investment returns will exceed inflation. Given past experience an excess of 2% of investment returns over salary inflation was assumed. This effectively translates into a long-term investment return assumption of 10%.

Pension and Deferred Pension Increases

B.20. Similar to the salary increase assumption, an assumption is required on the expected level of future pension increases. We have allowed for pension increases of 5% p.a and deferred pension increases of 8% p.a.

Mortality Rates

B.21. In general, benefits will decrease or cease when the individual dies. In our projections of benefits it is thus essential to take account of the mortality of both active employees and pensioners. Mortality is normally expressed as the probability of death within the next year for an individual of a specific age. Different mortality rates are thus set for each age group (higher rates for older people) and this set of rates is referred to as a mortality table. Different mortality tables can be used for males and females, and for active employees and pensioners, as appropriate.

B.22. The mortality table used for the current employees was A1949/52 as published by the Institute and Faculty of Actuaries. For pensioner we used the a(55) tables for males and females respectively. Based on our knowledge of Kenyan mortality, we believe that this table is suitable for use in this valuation.

Withdrawal Rates

B.23. An assumption on the expected withdrawal or turnover experience of the Scheme can be selected. We have allowed for withdrawals at rates experienced in other similar schemes.

Other Assumptions

B.24. Details of all assumptions are set out in more detail in Schedule C of the report.

SCHEDULE C. SUMMARY OF THE ACTUARIAL VALUATION BASIS

C.1	**Discount rates**	**10% p.a.**
C.2	**Pension increases**	**5% p.a.**
C.3	**Increases to deferred pensions while deferred**	**3% p.a up to 30 June 2017, 5% p.a thereafter.**

C.4 Withdrawal rates

Age	Male	Female
	%	%
20	15.000	15.000
25	12.000	12.000
30	6.000	6.000
35	2.500	2.500
40	1.800	1.800
45	1.000	1.000
50	0.000	0.000
55	0.000	0.000
60	0.000	0.000

C.5 Pre Retirement Mortality

A1949/52 as published by the Institute and Faculty of Actuaries (U.K)

Age	Male	Female
	%	%
20	0.111	0.111
25	0.112	0.111
30	0.116	0.113
35	0.132	0.120
40	0.188	0.147
45	0.330	0.231
50	0.599	0.420
55	1.035	0.750
60	1.720	1.272
65	2.810	2.096

C.6 Ill-health/Disability

Age	Male	Female
	%	%
20	0.040	0.040
25	0.040	0.040
30	0.040	0.040
35	0.040	0.040
40	0.060	0.050
45	0.110	0.080
50	0.200	0.140
55	0.350	0.250
60	0.570	0.420
65	0.0094	0.0070

C.7 Post Retirement Mortality

a(55) ultimate tables as published by the Institute and Faculty of Actuaries (U.K)

Age	Male	Female
	%	%
50	0.547	0.376
55	0.870	0.553
60	1.402	0.855
65	2.297	1.385
70	3.776	2.307
75	6.164	3.881
80	9.861	6.495
85	15.246	10.628
90	22.413	16.694

SCHEDULE D: CERTIFICATION BY SCHEME TRUSTEE

I, MARTIN MOGWANJA

(Chairperson Board of Trustees/Authorized Trustee)

being a Trustee of the **Kenya Railways Staff Retirement Benefits Scheme hereby** do declare that to the best of my knowledge and belief that the information furnished to the Actuary for the purpose of the actuarial valuation was correct and complete in every material respect and the interpretation of the Trust Deed and Rules as used for the purposes of the actuarial valuation reflects the interpretation as held by the Trustees. A copy of the actuarial valuation report has been sent to the sponsor of the Scheme.

Date: 21st December 2023

Signature: