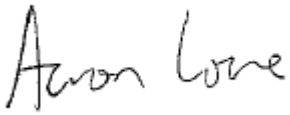
Actuarial Valuation as at 31 December 2021
AEEU Members' Superannuation Fund

Aaron Love FIA



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Introduction

This report is addressed to Unite the Union (the Union). Other readers cannot rely on this report as being actuarial advice. Third parties should seek their own independent advice as appropriate.

In this report I set out the results of my actuarial valuation of the AEEU Members' Superannuation Fund (the Fund) as at 31 December 2021. The previous actuarial valuation of the Fund was carried out with an effective date of 31 December 2016.

This report satisfies Section 40 of the Trade Union and Labour Relations (Consolidation) Act 1992 (the Act) which requires that the Union should arrange for the Fund to be examined periodically by an appropriately qualified actuary, and for a report to be made to the Union by the actuary on the result of the examination. The main requirements of the Act are summarised on page 3.

This work has been carried out as requested by Kevin Robinson in his email of 21 October 2022.

A copy of this report should be provided to the Certification Officer by 31 December 2022. I assume the Union will arrange this.

Overview of the valuation

I have carried out an actuarial valuation of the Fund as at 31 December 2021. In doing so, I have valued the Fund on an ongoing basis. The previous actuarial valuation of the Fund was carried out with an effective date of 31 December 2016.

I have used the following data and information for the valuation:

- the Fund's benefit structure, a summary of which is given in Appendix A;
- membership data as at 31 December 2021 supplied by Louanne Muhammad at the Union, a summary of which is given in Appendix B; and
- asset and cashflow information as at 31 December 2021 supplied by Louanne Muhammad at the Union, a summary of which is given in Appendix C.

The Fund is governed by the Trade Union and Labour Relations (Consolidation) Act 1992 (the Act). Section 40 of the Act requires that the Union should arrange for the Fund to be examined periodically by an appropriately qualified actuary and for a report to be made to the Union by the actuary on the result of the examination. The Act also lays down that the examination shall include a valuation of the assets comprised in the fund maintained for the payment of benefits and of the liabilities falling to be discharged out of it.

In addition, the actuary's report shall state whether, in the opinion of the actuary:

- the contribution rates are adequate;
- the accounting or funding arrangements are suitable; and
- the fund for the payment of benefits is adequate.

The purpose of the ongoing valuation is to assess the funding position of the Fund on an ongoing basis in accordance with the terms of the Act.

I have not carried out a buy-out solvency valuation. The purpose of a buy-out solvency valuation is to estimate the level of assets needed to secure the Fund's benefits with an insurance company. It is unlikely that annuity providers would insure pensions as small as those paid from the Fund, and so I have not carried out a valuation on this basis. However, I could investigate this if the Union should wish me to do so.

For the avoidance of doubt, there are no requirements for the Fund to meet the Statutory Funding Objective as defined in section 222 of the Pensions Act 2004, and I have not assessed the Fund on this basis.

Actuary's opinion

There are some uncertainties around membership data, which are set out in Appendix B. I have considered the sensitivity of the valuation results to using different assumptions and examined the key risks that could impact upon the Union's funding strategy for the Fund.

The next section of this report "The ongoing valuation" sets out the method and assumptions used to value the liabilities, together with a summary of the results, and the sensitivity of those results to the assumptions made.

After considering the results of this valuation, the Union will continue to administer the Fund in accordance with the rules of the Fund.

The next actuarial valuation should be carried out with an effective date such as the Union may determine, not being more than five years after effective date of this valuation i.e. by 31 December 2026.

Given the results shown in the ongoing valuation section of this report, it is my opinion that no further contributions are required from the Union at this time.

It also my opinion that the funding arrangements are suitable and the fund established for the payment of benefits is adequate.

The ongoing valuation

Funding objective

The Union's funding objective is to target, over a period, sufficient assets to cover the liabilities of the Fund on an ongoing basis.

Results

£	31 Dec 2021 on current ongoing basis	31 Dec 2021 on previous valuation basis	31 Dec 2016 on previous valuation basis
Assets	884,000	884,000	954,000
Liabilities	28,000	31,000	90,000
Surplus	**856,000**	**853,000**	**864,000**
Funding level	**3,157%**	**2,852%**	**1,060%**

The Fund had a surplus at the valuation date of £856,000 and an ongoing funding level of 3,157%.

Valuation method

The valuation of the liabilities requires a number of assumptions to be made about the future.

In this valuation, I have used a market-related approach. Assets are valued at their market value and the discount rate used in valuing the liabilities is derived from and is consistent with market conditions as at the valuation date.

The benefit payments from the Fund in respect of eligible members were provided in the data, and the value of the liabilities is determined by discounting these benefit payments to the valuation date using the assumptions outlined in Appendix D.

I have then compared the value of the liabilities with the market value of the Fund's assets to determine whether there is a surplus or a shortfall in the assets.

Valuation assumptions

Financial assumptions

I have presented the valuation on a set of market related assumptions. A summary of these assumptions is given in Appendix D.

All the assets are held in cash. I have calculated the investment return (discount rate) based on the Bank of England nominal gilt yield curves appropriate to the duration of the Fund's liabilities which is approximately 6 years. As at 31 December 2021, this results in a discount rate of 0.8% pa.

Mortality assumptions

This is a key assumption that determines how long the benefits will be paid to each eligible member for. I have adopted the same principles used at the previous actuarial valuation, updated for the most recently published mortality tables and model for mortality improvements. Please refer to Appendix D for background information.

Other assumptions

I have made no allowance for expenses in this valuation and have assumed that all expenses will continue to be met by the Union. This is consistent with the previous valuation. Any specific audit charges and the fees for actuarial valuations are assumed to be met by the Union as they fall due.

Data uncertainties

I have some concerns about the reliability of the data, details of which are given in Appendix B. For the purposes of this valuation, I have taken a prudent view where the data is unreliable. Given the ongoing funding level of 3,157%, I consider that these uncertainties will not impact my opinion given on page 4.

Sensitivities

The results of a valuation depend on the assumptions used. The assumptions represent one estimate of possible future experience. The final cost of the Fund will be determined by actual experience such as the actual longevity of members.

I set out below the approximate change in the ongoing funding surplus for changes in key assumptions:

Change in ongoing basis as at 31 December 2021	Reduction in ongoing surplus
Discount rate 0.5% pa lower	£1,000
One-year increase to life expectancy	£2,000
Assets fall by 10%	£88,000

The above scenarios show that the surplus is not particularly sensitive to the assumptions adopted. This is because the average age of the eligible members is 94, meaning the payments are not projected very far into the future. In addition, as the assets are held in cash, the investment risks are small.

Valuation development

To understand the valuation results, it is helpful to consider how the funding position of the Fund has developed since the last valuation and how it may be expected to develop over the period to the next valuation.

Comparison with previous valuation

At 31 December 2016, there was a surplus of £864,000 on the ongoing basis and the funding level was 1,060%. At this valuation, there is a reduced surplus of £856,000 although the funding level has significantly increased to 3,157%.

Had all the assumptions been borne out in practice, I would expect the surplus to have roughly remained at a broadly similar level. The change in the surplus has arisen due to actual experience being different to that anticipated.

The main factor contributing to the improvement in the funding position is a better than assumed return on the assets over the period. This was offset slightly by lower than expected deaths over the period.

Projection to next valuation

The next full actuarial valuation should be carried out with an effective date such as the Union may determine, not being more than five years after the effective date of this valuation, i.e. by 31 December 2026.

The results of that valuation will depend on the experience of the Fund between 31 December 2021 and the date of the next valuation. Assuming the experience is in line with the assumptions adopted for the ongoing valuation, I would anticipate the funding position of the Fund at the date of the next valuation on the ongoing basis to be similar or better to the funding position at 31 December 2021.

Appendix A: Benefit structure

I understand that there have been no changes to the rules since the previous valuation as at 31 December 2016. The benefits I have valued are as follows:

Eligibility

The Fund is closed to new entrants.

Benefits

The retirement benefits shown below are provided to any member who satisfies the following conditions:

- is 65 years of age;
- has been thirty years successively in Section 1 or 2 of what was then the Amalgamated Engineering Union;
- has been, throughout that period, eligible to receive Superannuation Benefit; and
- makes a claim.

A member who is aged between 60 and 65 is also able to claim benefit if they satisfy the following conditions:

- has been in Section 1 or 2 of what was then the Amalgamated Engineering Union for thirty years successively;
- has been, throughout their membership, eligible to receive Superannuation Benefit;
- through old age or infirmity is unable to follow his usual occupation;
- provides any medical evidence of infirmity; and
- makes a claim.

The retirement benefits are:

Complete years of membership eligible to receive Superannuation Benefit	Member of Section 1	Member of Section 2
30 to 34 years	85p per week	63p per week
35 to 40 years	93p per week	70p per week
Over 40 years	£1 per week	78p per week

There are no withdrawal benefits and no partners' benefits.

Member contributions

Non-Permanently Exempt members contributed to the Fund at a rate of 24p per week.

Permanently Exempt members did not make contributions.

Appendix B: Membership data

The membership data was provided to us by Louanne Muhammad at the Union.

Data uncertainties

New entrants

There are 22 eligible members in the data provided to us as at 31 December 2021 that were not included in the valuation data as at 31 December 2016.

The Union has not provided data to us for any further eligible members (other than those whose data has already been provided) that could be expected to claim benefits. I have therefore assumed that there are no members eligible for benefits that are not already in receipt.

Missing dates of birth

The membership data provided has dates of birth missing for 14 members. As for the previous actuarial valuation, I have assumed that these members are age 65 at the valuation date.

Given the average age of the membership with complete data is 94, this assumption is likely to overstate the value of the liabilities.

Summary of data used

The following membership data was used in carrying out the valuation. The membership data is recorded at 31 December 2021, and no allowance has been made for any movements that have occurred since that date.

	31 December 2021	31 December 2016
Number of members	132	421
Total pension (£ pa)	£6,000	£20,600
Average pension (£ pa)	£45	£49
Average age	91	92

The Union has previously confirmed that all members are male.

Appendix C: Assets

The asset data was provided to us by Louanne Muhammad at the Union.

The assets of the Fund are held in a bank account, segregated from the assets of Unite the Union. At 31 December 2021 the market value of the assets was £1,154,000.

However, as was the practice before the previous valuation, benefit payments had been made by the Union, rather than by the Fund, so the Fund owes money back to the Union.

Some repayments have been made from the Fund to the Union over the 5 year period, however I understand there is still a balance owing to the Union.

Amount owed to the Union as at 31 December 2016	**£230,000**
Benefit payments made by Union over the period	£69,000
Money repaid to Union over the period	(£29,000)
Amount owed to the Union as at 31 December 2021	**£270,000**

The unaudited asset value used for the actuarial valuation as at 31 December 2021 is calculated as follows:

	31 December 2021
Market value of assets	£1,154,000
Less money owed to Union	(£270,000)
Assets used in the valuation	**£884,000**

Appendix D: Assumptions

Summary of assumptions used

The method and assumptions adopted for the ongoing valuation as at 31 December 2021 are set out below. I have also shown the assumptions adopted at the previous valuation for comparison.:

	31 December 2021	31 December 2016
Method		
Assets	Market value	
Liabilities	Projected unit method	
Assumptions		
Discount rate	0.8% pa	0.2% pa
Mortality Base table Model for future improvements	S3PMA CMI_2021_M/F 1.5% pa *(default extended parameters)*	S2PMA CMI_2016_M/F 1.5% pa *(default extended parameters)*
Expenses	Met directly by the Union	

Mortality assumptions

The Continuous Mortality Investigation (CMI) of the Institute and Faculty of Actuaries publishes standard mortality tables and updates these from time to time.

Base table (pre and post retirement)

The S3 mortality tables were published in December 2018 and are based on the mortality experienced over the period 2009 to 2016 of individuals in self-administered pension schemes (SAPS). Of this set, the series I recommend are the S3PMA and S3PFA tables. These are the S3 tables for pensioners weighted by pension amounts, so members with larger pensions have more influence on the results. The S2 mortality tables were used for the last valuation, which covered mortality experienced over the period 2004 to 2011.

Improvements to future mortality

The CMI publishes models for deriving mortality improvement factors, based on ONS data for England & Wales. The 2021 model was published in March 2022. This model:

- is based on historic population data from 1 January 1981 to 31 December 2021, for both males and females;
- derives historic improvement factors for years 1982 to 2021;
- derives future mortality improvement factors by considering a long-term progression from current levels of improvement to long-term rates, specified by the user; and
- produces factors that differ by age and gender.

Core parameter

The model requires an assumption for the core parameter, the long-term rate of improvement.

Research, published by the Office for National Statistics for mortality in England and Wales, has found that over the 20th century average mortality improvements were 1.2% pa for both males and females.

The same research also found that, over the 53-year period between 1960 to 1962 and 2013 to 2015, the average rate of improvement was 1.6% pa for males and 1.3% pa for females.

It therefore seems reasonable to assume that mortality rates will continue to improve in the future. Given the average age of the Fund, this is likely to only have a very small impact.

Extended parameters

The model also has extended parameters which allow users to tailor the mortality projections either to the specifics of their scheme or to their personal views:

- Smoothing parameter ($S\kappa$) which allows users to place more or less weight on recent mortality experience;
- Initial addition to mortality improvements parameter (A) which adjusts the model to reflect the user's view on appropriate rates of improvement for specific populations, for example when the population being modelled (the scheme membership) is expected to experience different levels of mortality improvement than the population underlying the model (the population of England & Wales); and
- 2020 and 2021 weight parameters (w_{2020} and w_{2021}) which allow users to place weight on data for 2020 and 2021, as a way of varying projected improvements in light of the impacts of the pandemic.

There is much uncertainty over future mortality trends. Many factors which appear to have influenced recent mortality trends may be considered short-term factors (such as viruses and cold winters). When setting a mortality assumption, a long-term view is required.

The default value for $S\kappa$ is 7.0. A larger smoothing factor places less relevance on recent mortality experience. How a change in the smoothing parameter impacts on projected life expectancy depends on recent trends, and can differ depending on the average age and gender of the population being modelled.

The default value for A is 0.0%, i.e. no adjustment from the membership underlying the CMI model. Research published by the CMI suggests that, over the period 2001 to 2019, there were only small differences on average in the annual mortality improvements of pension scheme members and the population of England & Wales (which is the data used for the CMI's models).

The default values for w_{2020} and w_{2021} are 0%, i.e. to place no weight on the mortality data for 2020 or 2021. It is difficult to say with any confidence how the COVID-19 pandemic will feed through into future mortality. There are arguments that it may decrease future life expectancy (for example the impact of future variants of COVID-19 and the unknown long-term impact for those who have caught it) but also arguments that it may increase future life expectancy for survivors (for example there being a healthier surviving population and changing attitudes to health and infection).

Appendix E: Compliance

Actuarial standards

The following Technical Actuarial Standards (TAS) apply to this work:

- TAS 100: Principles for Technical Actuarial Work
- TAS 300: Pensions

I confirm I have complied with their requirements.

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CMI Data

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ONS Data

ONS data has been adapted from data from the Office for National Statistics licensed under the Open Government Licence v.3.0 (http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/).