

Warwickshire Pension Fund

Early Retirement Strain Cost Factors

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Douglas Green FFA

Fellow of the Institute or Faculty of Actuaries
For and on behalf of Hymans Robertson LLP



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Executive Summary

This paper has been requested by, and is addressed to, Warwickshire County Council in its capacity as Administering Authority of the Warwickshire Pension Fund (“the Fund”). The purpose of the paper is to advise replacement early retirement strain cost factors for use by the Fund.

The Fund needs strain cost factors to determine the added cash which an employer must pay whenever a member takes early retirement on unreduced benefits. These benefits cost the Fund more than it had been expecting, so the employer must pay the additional cost.

In order to reflect the latest assumptions adopted by the Fund for the purposes of the formal funding valuation as at 31 March 2022, we recommend that a single loading factor of 122% should be applied to the strain costs being generated by the Fund’s existing factors (shown in Appendix 1). The Fund should consider the exact method and timing of implementing this new loading factor, as outlined under “Implementation” below.

Please note that this new loading factor of 122% is based on the understanding that no other loading factor is currently being applied by the Fund to its existing factors.

The new loading factor reflects our analysis that the Fund’s existing early retirement factors understate the strain cost in most circumstances. Therefore, **adopting the new loading factor will give rise to higher strain costs required from employers.**

This advice should be reviewed at the next formal actuarial valuation, or if the funding basis is materially altered, whichever occurs first.

Background

At the triennial valuation, the actuary calculates the estimated cost of providing benefits to members, over and above the member contributions and expected investment returns. This estimated cost is then charged to employers as their required regular contributions. In valuing the benefits, the actuary generally assumes that active members will start taking benefits around the earliest date they are able to do so in full, the “Normal Pension Age” or NPA.

LGPS Regulations determine the NPA for different tranches of benefit for a given member, and the employer contributions are based on that data. If a member was to take early retirement on unreduced benefits before NPA then an added cost (also referred to as the “early retirement strain cost”) arises for the Fund. This is due to:

- The longer expected payment period: the member’s expected age at death is unchanged, but the start date of payments is earlier;
- The missing investment returns which the Fund would have expected on those assets if they hadn’t been needed for early retirement benefit payments, but had remained invested until NPA instead (NB this is partly offset by the expected future salary and CPI growth which would have increased the benefits).

There are a number of approaches to calculating this added cost:

- A. The true cost of any given early retirement can only be known at the death of the member. At that point the Fund could exactly determine the benefit payments actually made, and their excess over those which would have been made from NPA, together with investment returns.

Other approaches can therefore only be estimates of the true cost:

- B. The accounting cost as estimated at the next accounting disclosure (under FRS102 or IAS19), which will use different assumptions from those used for funding.
- C. The funding cost as estimated at the next funding valuation, which will use different assumptions from those used for accounting.
- D. The immediate cash cost payable by the employer, calculated using factors, typically derived using a simplified calculation methodology as outlined below. This methodology is adopted to be easily incorporated within the Fund’s administration software. This paper considers these factors, as an approximate estimate of the true cost as per A above, in order to have the bulk of the anticipated added cost being paid into the Fund in the short term.

It is almost inevitable, given the inherent approximations, that the factors under approach D will give rise to added contributions which prove, at the next valuation, to be lower or higher than the calculated costs at that time. The difference will therefore affect the employer’s deficit position at the next valuation date, so that the required balancing contributions are collected in the longer term. However, the use of these factors is a pragmatic approach to ensure that a significant part of the cost is collected from the member’s employer at the time of early retirement.

Given the different actuarial assumptions which apply for accounting purposes, it is also inevitable that the cost under approach D will differ markedly from the past service cost likely to be disclosed under FRS102/IAS19.

The factors methodology (Approach D)

The Fund needs some ready way to calculate the added cost arising from each early retirement, so that the employer concerned can be billed appropriately at the time of the retirement. In practice this is calculated by the pension's administrator using Early Retirement Strain Cost Factors. These factors are determined by each fund and are not mandated by the Regulations or the Government Actuary's Department.

The factors we understand are currently used by the Fund are attached as Appendix 1 to this paper, and were introduced in 2019.

In essence the strain cost is calculated as:

{Unreduced pension} x {ERR factor} x {Annuity Factor at ERA}

where:

- ERR factor = the Early Retirement Reduction factor which would have applied to the member's pension had the retirement not been with employer consent. (NB These are calculated for funding purposes, and will therefore differ from the standard GAD early retirement reduction factors which would be applied if the member's pension was actually being reduced).
- Annuity Factor at ERA = the cost of paying a pension of £1 p.a. (plus future increases in payment) for the remainder of the member's expected lifetime from their Early Retirement Age.

These early retirement strain cost factors are typically derived using the actuarial assumptions adopted at the most recent triennial valuation of the Fund. Once a valuation has been completed, it is therefore common practice to revisit these factors to allow for the updated valuation assumptions. This can be done in two ways:

- The Fund can implement a full set of new, bespoke ERR and Annuity Factors.
- Alternatively, the Fund can apply a single loading to the existing factors in use. Whilst this approach is more approximate than adopting a full bespoke set of factors, it will provide a sensible estimation.

In accordance with the Fund's request, this paper advises on the second option, i.e. a single loading that should be applied to the existing factors in use.

Assumptions underlying proposed new Factors

Background

From the above, we would therefore propose that the Fund applies a loading to its existing factors where the underlying assumptions reflect those used at the most recent formal funding valuation as at 31 March 2022. The rationale for these assumptions is that the strain costs are a funding cost for the employer and should therefore use the same assumptions as those underpinning the most recent formal funding valuation.

We understand that the administration software only permits a single table of factors to be used for all Fund members, which in turn implies the use of a single set of assumptions. However, at the 31 March 2022 formal funding valuation we measured funding positions using different assumed investment returns (as at the valuation date) for different types of employer. In the interests of pragmatism, we have proposed an assumed investment return below which relates (at the valuation date) to the reported whole Fund funding position. This is taken to be appropriate for employers of the majority of Fund members, on the long term funding target (as opposed to contractor or cessation funding targets – see next page).

Principal assumptions adopted

We have therefore used the following principal long term average assumptions:

- Assumed investment return = 4.0% p.a.
- Pay growth rate = 3.7% p.a.
- CPI pension increase rate = 2.7% p.a.
- Pre-retirement increase rate = 3.2% p.a. (average of pay growth and pension increase rates – see next page)
- Life expectancy as per whole Fund averages.

The derivation of these assumptions was detailed in the advice provided for the formal valuation as at 31 March 2022, including the formal valuation report.

(The financial assumptions used for the existing factors were 3.7%, 3.1%, 2.3% and 3.1% respectively, i.e. in line with the most recent funding valuation at that time).

Simplifying assumptions adopted

In determining the proposed loading to the Fund's existing factors we have had to make the following simplified assumptions:

- Member's NPA = 67 for the age at which members can receive all accrued retirement benefits unreduced. This assumption of a single NPA is because the ERR factor will differ whether (for example) the member is retiring 5 years early at age 55 with an NPA of 60, or retiring at age 62 with an NPA of 67. The administration software does not allow this distinction, it uses the same factor for a given number of years early, regardless of NPA, so we have chosen 67 as a suitable average across LGPS active members: this is in line with the funding assumption adopted at the most recent valuation of the Fund.
- As the administration system only permits one ERR factor regardless of gender, we have taken the average of male and female factors.

Note that another simplification is due to the application of a single revaluation assumption which is equal to the average of the salary increase assumption and the CPI assumption for all pension, (rather than allowing for separate revaluation of the pre- and post-2014 element of the member's accrued pension). We have used this simplification because:

- The administration software does not permit different ERR factors to be applied to different tranches of benefit for early retirement strain cost purposes;
- With the passing of time since 2014, the pre-2014 and post-2014 elements of the average accrued pension will likely become more balanced for members retiring in the near future (in recent years we would have expected the majority of a retiring member's pension to be pre-2014);
- The higher strain costs will generally occur where the member has much longer service, in which case the salary-related pre-2014 element will be a larger element of the total anyway and therefore it is important to maintain a link to the salary increase assumption in our calculations;
- We consider this an acceptable approximation in the context of other simplifications applied in this calculation, as identified above;
- The calculated strain cost is only ever an interim payment requested from the employer, so any difference from the cost calculated at the next valuation (as per approach C above) will be picked up in employer contributions at that stage.

The resulting loading factor should be applied to the Fund's existing factors as shown in Appendix 1.

Employers with alternative funding targets

The use of the lower assumed investment return in alternative funding targets would, all other things being equal, give rise to lower strain cost calculations. We would therefore expect that strain costs calculated for employers on contractor or cessation funding targets are more likely to be higher than strictly necessary, thus giving rise to funding gains at the next funding valuation. However, we consider this to be acceptable, partly on the grounds of administrative simplicity (we only expect a small minority of early retirements to take place among such employers). Furthermore, as these employers are heading to a cessation event, this would either:

- reduce the amount of cessation debt which the employer has to pay at that time anyway, or
- increase any surplus which may be returned to them under the discretionary decision made by the Fund with regard to an exit credit at that time,

depending on their funding position at cessation.

Impact of proposed assumptions

We have proposed the above assumptions as they are in line with the assumptions underpinning the majority of employer funding strategies as at the last valuation.

If different assumptions were to be adopted for these factors, then there would be a disconnect between the measurement of the required strain payment, and the measurement of the existing funding reserve immediately prior to early retirement.

It is not possible to state whether a more or less prudent set of assumptions for these factors would give rise to higher or lower strain payments, since different assumptions affect different parts of the strain cost calculation in different ways. For instance, a lower real assumed investment return would give a lower ERR factor but a higher Annuity Factor, and the overall impact would vary by age and term to NPA.

However, we can state that:

- Higher calculated strain costs will, all other things being equal, mean a lower likelihood that a further deficit arises at the future valuations, and a higher likelihood that the strain payment will prove to be overly sufficient (and vice versa);
- Changes to market conditions and to future valuation assumptions will mean that the strain cost factors will become more or less likely to meet the true cost and future funding and accounting requirements. For the reasons stated above it is not possible to state simply that a given change will give rise to a greater or smaller likelihood of the strain payment proving to be sufficient.

Comparison between existing and proposed assumptions

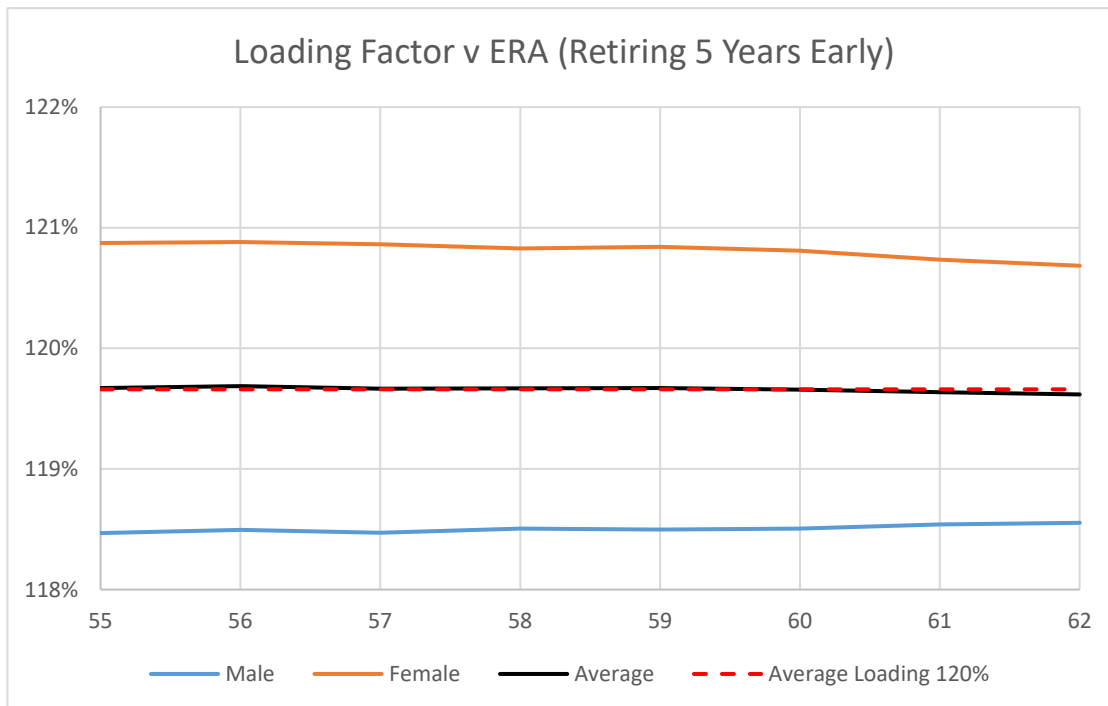
We have calculated the strain cost which would apply for a variety of notional members, of different ages, gender and term to retirement, using the following:

- The assumptions adopted at the formal funding valuation as at 31 March 2019 (i.e. the current factors being used by the Fund, which are shown in Appendix 1).
- The assumptions adopted at the most recent formal funding valuation as at 31 March 2022 (shown above).

By comparing the resulting strain costs under the two sets of assumptions, this allows us to determine the impact of moving from the current assumptions to the new assumptions being proposed.

The chart below shows our analysis for a particular cohort of hypothetical members – namely those that retire 5 years earlier than their Normal Pension Age. For these members, we have compared the strain costs that arise at each Early Retirement Age (ERA) under the current and new assumptions.

We have analysed this impact for both males and females but also looked at the average impact across these two groups.

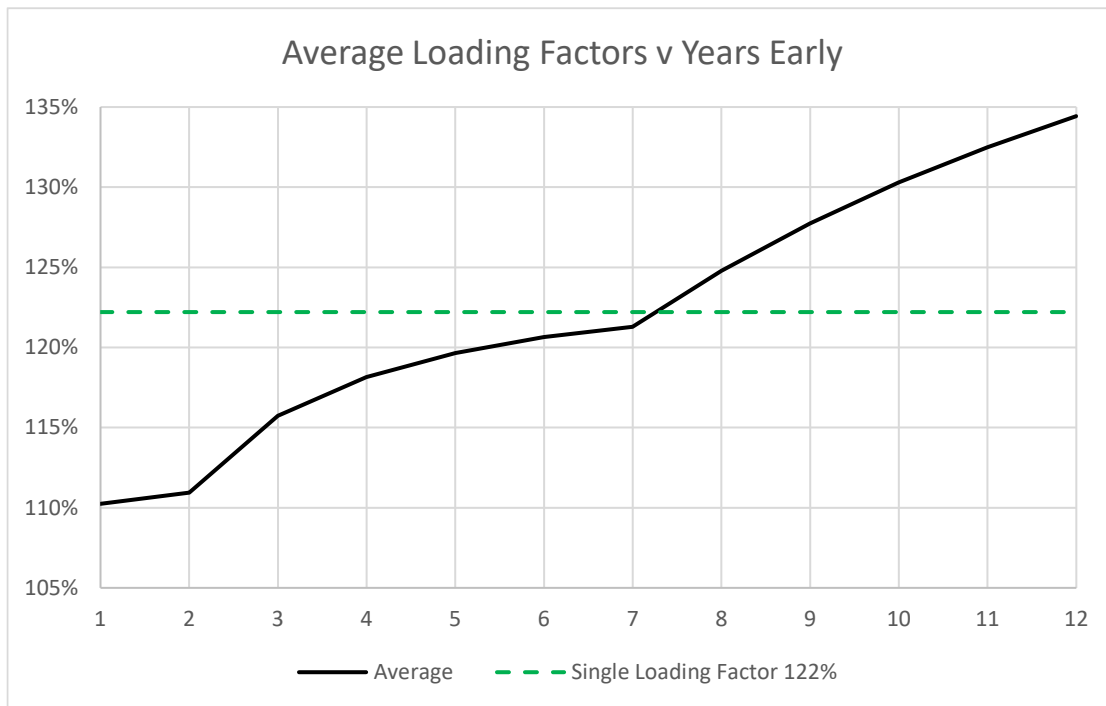


The chart above shows that (for example) the strain cost arising for a male retiring 5 years early at age 55 is around 18% greater under the new assumptions than under the current ones. For a corresponding female at age 55, the new strain cost is around 21% higher. The average of the two (shown by the black line) is an increase of around 20% at age 55.

Looking across all ages and genders in the chart above, we have determined that the average impact is around 20%. This is shown by the red dashed line.

In other words, **for members retiring 5 years early**, the Fund can update its strain cost calculations to reflect the latest formal valuation assumptions by simply applying a loading factor of 120% to the strain costs being generated by its current factors (shown in Appendix 1).

We have expanded and repeated this analysis for a wide range of scenarios, where members retire between 1 and 12 years early. The results are presented in the chart below.



The black line in the chart again shows the average impact of moving to the new assumptions for each early retirement scenario. For example, as already established, for members retiring 5 years early the strain costs are around 20% higher under the new assumptions. For those retiring 10 years early, the increase is around 30%.

Looking across the range of scenarios, we have determined that the average impact of adopting the new assumptions is an increase in strain cost of around 22%. This is shown by the green dashed line above.

Therefore, for all members taking early retirement on unreduced benefits where the Fund calculates the strain cost using the current factors shown in Appendix 1, we advise that the Fund should update this calculation by simply applying a single loading factor of 122%.

For example, if the Fund's current factors are generating a strain cost of £10,000 for a particular member then this should be increased to £12,200 (i.e. £10,000 x 1.22).

Note that whilst this approach will not be as accurate as adopting a full bespoke set of new early retirement factors, it will provide a sensible estimation.

Note that a different chosen loading factor would give a different result for all early retirements:

- A lower factor would give more accurate results for members retiring closer to their Normal Pension Age, and less accurate results (likely an understated strain cost) for those retiring further from their NPA;
- A higher factor would give more accurate results for members retiring further from their Normal Pension Age, and less accurate results (likely an overstated strain cost) for those retiring closer to their NPA.

The recommended loading factor has been calculated as the average across all early retirement terms, which we believe is an appropriate approach.

Implementation

- A. **Factors:** The existing factors in use by the Fund are shown in Appendix 1, for the principal ages and numbers of year early which will tend to arise in practice.
- B. **Use of factors:** The existing factors should be used in the manner outlined in the Instruction Manual previously issued to the Fund. This paper should therefore be read in conjunction with that Manual, for the purpose of applying the new factors in practice.
- C. **Existing Loading:** For the avoidance of doubt, for the purposes of this paper we have assumed that no added loading factor is currently being applied when using the existing factors i.e. the loading is currently 100% (we are aware that many funds may in the past have used loadings of 125% or 140% applicable to factors in place at that time). If this is not the case then please contact your Fund Actuary, as this would invalidate the recommendations in this paper.
- D. **Proposed Loading.** As detailed above, to allow for the impact of the latest formal funding valuation assumptions we recommend that a loading is applied to the strain costs being generated by the existing factors. If the Fund or any employers use these existing factors in any spreadsheets or ready reckoners, please ensure these are updated accordingly. If you have any queries regarding their application, please contact your Fund Actuary in the first place.
- E. **Testing:** We recommend the Fund carries out some testing of the new loading factor, to ensure this approach is giving reasonable results across a variety of members' ages and both genders. If you have any queries regarding these tests, please contact your Fund Actuary in the first place.
- F. **Timing:** The Fund should carefully consider the date at which this new loading starts to be applied. We recommend it is applied with immediate effect, subject to issues such as:
- time to embed the new loading on to the Fund's administration system and carry out any necessary testing;
 - strain cost quotes already issued (i.e. whether these should be honoured as they stand or replaced with the new loading);
 - use of strain cost quotes in a manner affecting members' benefits (see (f) below);
 - strain cost quotes requested but not yet issued to the employer;
 - any governance processes required, such as formal approval by Section 151 Officer or Pensions Committee;
 - any employer communication requirements, for instance if employers expect any changes to be notified to them before coming into effect.

There is no single correct approach, but the Fund should record (and where necessary communicate) its approach taking account of the above. If you have any queries regarding timing and process issues, please contact your Fund Actuary in the first place.

- G. **Impact on members:** Allowing for the new assumptions by applying a loading to existing factors does not explicitly affect members' benefit levels in most circumstances, as they are intended to calculate the funding strain cost payable by the employer on the assumption that the member is retiring with unreduced benefits. However, we are aware that the factors may occasionally be used in a manner which potentially impacts members' benefits, for instance where the employer is considering possible early retirements but its decision will be partly cost-based, or where the member is asked to contribute to their early retirement cost. In such circumstances, applying a loading to existing factors will have an impact on whether the member is granted early retirement, or the cost to the member of that retirement. The impact will depend on the specific circumstances, and if there are any queries please contact your Fund Actuary in the first place.

- H. **Ill-health strain costs:** For the avoidance of doubt, applying the proposed loading to the existing factors may be used to calculate the strain cost applicable for Tier 1 & Tier 2 ill-health early retirement cases. However, the cost of added service under Tier 1 is not explicitly matched by this approach: applying the loading to the existing Annuity Factor is likely to be appropriate albeit this does not include the cost of a dependant's pension and so will slightly understate (typically by 10-20%) the cost of that added service.

Please note that any external ill-health insurance will be affected by applying a loading to the early retirement strain cost factors, as these affect the amount of strain cost being insured and the claim payments made by the insurer. Therefore, applying the recommended loading to the factors will cause the premium rate to rise. In the interests of full disclosure, as Hymans receives commission on these premiums, then a rise in strain costs arising from applying this loading to the factors will lead to a commensurate rise in the amount of commission we receive. By instructing us to review the strain cost factors for the Fund in this report, we assume that the Fund is comfortable with this situation. We have not carried out an analysis to identify the impact for individual insured employers as part of this factors review exercise.

- I. **Exit payment cap:** At the time of writing, the Government has proposed but not yet implemented legislation which would limit the award of unreduced early retirement benefits in some circumstances, due to the application of a cap (proposed at £95,000) on the combined value of an employee's severance package. We have not taken account of this legislation in the proposed loading to the existing factors, due to the lack of clarity on whether and how such regulations would apply. If and when such regulations are brought into effect, please contact your Fund Actuary to verify whether and how the use of these factors is affected.
- J. **Post valuation events.** Since the most recent formal valuation date of 31 March 2022, there has been significant volatility in financial markets, short-term inflation expectations and rises in interest rates by central banks. These events affect the valuation of the Fund's liabilities and therefore also the cost of members retiring early on unreduced benefits (although the precise impact is unclear because different assumptions affect the strain cost calculation in different ways). As stated above, the proposed loading to the existing strain cost factors in this report has been calculated using the assumptions adopted for whole fund reporting at the most recent formal valuation of the Fund as at 31 March 2022. We have adopted this approach, as the assumptions are in line with those underpinning the disclosure reports for the majority of employer funding strategies as at the most recent valuation. If you wish to discuss the impact of any post valuation events on your early retirement strain cost factors or loading - either now or in future – please contact your Fund Actuary.

Professional notes

The paper is not intended for any party other than the Fund, nor for any other purpose than determining early retirement strain cost payments, and Hymans Robertson does not accept any liability relating to any other party or purpose.

This paper is subject to and complies with the following Technical Actuarial Standards set for the actuarial profession:

- TAS 100 (Principles for Technical Actuarial Work), and
- TAS 300 (Pensions).

If there are any queries, please direct these to me or your usual Fund Actuary contact in the first place.



Douglas Green FFA

19 April 2023

For and on behalf of Hymans Robertson LLP

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Appendix

Appendix 1 – Existing factors for early retirement strain costs

The tables below show the existing factors that the Fund is using for the purposes of calculating the strain arising on early retirement.

Table 1: Early Retirement Reduction (ERR) factors

Early Retirement Reduction	
Years to Funded Retirement Date	Existing Factors
0 (or past FRD already)	0.00%
1	3.76%
2	7.26%
3	10.51%
4	13.52%
5	16.31%
6	18.90%
7	21.31%
8	22.98%
9	24.50%
10	25.89%
11	27.17%
12	28.35%
13	29.46%
14	30.51%
15	31.51%
16	32.48%
17	33.41%

As per our Instruction Manual:

- Different Early Retirement Reductions may apply for a member's different tranches of benefits, based on the Funded Retirement Date (FRD) as defined in the Manual. The FRD is technically slightly different from our 2022 valuation compared to the Manual, but the principles remain the same.
- ERR should be interpolated based on the number of years and complete months before FRD.

Table 2: Annuity factors

Age Next Birthday	Existing Factors	
	Male Factors	Female Factors
50	25.71	27.65
51	25.46	27.42
52	25.19	27.17
53	24.88	26.89
54	24.55	26.59
55	24.19	26.25
56	23.65	25.69
57	23.08	25.11
58	22.51	24.52
59	21.92	23.92
60	21.33	23.30
61	20.73	22.68
62	20.12	22.06
63	19.51	21.43
64	18.91	20.80
65	18.31	20.17
66	17.72	19.54
67	17.15	18.92

The Annuity Factor to be used is that applicable to the member's age at the **next** birthday.