



# Government Actuary's Department

## **Firefighters' Pension Schemes (England)**

Actuarial valuation as at 31 March 2012

Report on data used for experience analysis

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## 1 Introduction

- 1.1 This report has been prepared by the Government Actuary's Department (GAD) in its capacity as actuarial advisor to the Department for Communities and Local Government (DCLG).
- 1.2 The purposes of this report are:
- > to discuss and summarise the member experience data provided and to be used for the purposes of analysing the Schemes' experience over the five-year inter-valuation period from 1 April 2007 to 31 March 2012
  - > to ensure that users of the valuation report understand the issues relating to the data used and in particular those issues that may have a material impact on the valuation results.
- 1.3 Membership data used for the actuarial valuation calculations are the subject of a separate report.
- 1.4 All membership data provided and discussed in this report were supplied either directly by the individual Fire and Rescue Authorities (FRAs) or via their appointed administrators.
- 1.5 In preparing this report, GAD has relied on data and other information supplied by the FRAs as described in this report. Any checks that GAD has made on this information are limited to those described in this report, including any checks on the overall reasonableness and consistency of the data. These checks do not represent a full independent audit of the data supplied. In particular, GAD has relied on the general completeness and accuracy of the information supplied without independent verification.
- 1.6 This report is intended solely for the use of DCLG. We are content for DCLG to release this report to third parties, provided that:
- > it is released in full
  - > the advice is not quoted selectively or partially
  - > GAD is identified as the source of the report, and
  - > GAD is notified of such release.
- 1.7 Third parties whose interests may differ from those of DCLG should be encouraged to seek their own actuarial advice where appropriate. GAD has no liability to any person or third party for any act or omission taken, either in whole or in part, on the basis of this report.



## 2 Summary of data provided

### Movement data

- 2.1 All of the 46 FRAs in England provided data in the form of individual member records for those leaving each membership category of the Schemes over the inter-valuation period.
- 2.2 The table below summarises the information provided, before any adjustments were made. The data items provided for each member in the initial data are set out in Appendices A to D.

**Table 2.1: Summary of original movement data provided**

<b>Membership category</b>	<b>Movement</b>	<b>Number</b>
<b>Active</b>	Retirement due to age	5,792
	Withdrawal	3,962
	Inter-authority transfer	327
	Retirement due to ill-health	267
	Death	75
	Other <sup>1</sup>	105
	<b>Total</b>	<b>10,528</b>
<b>Deferred</b>	Retirement due to age	206
	Transfer out of scheme	165
	Retirement due to ill-health	47
	Death	14
	Pension credit came into payment	47
	Re-entered active membership	28
	Other <sup>1</sup>	299
<b>Total</b>	<b>806</b>	
<b>Pensioner</b>	Death	2,258
	Other <sup>1</sup>	260
	<b>Total</b>	<b>2,518</b>
<b>Dependant</b>	Death	1,097
	Remarriage	25
	Other <sup>1</sup>	175
	<b>Total</b>	<b>1,297</b>

<sup>1</sup> Includes movements that were not used in the analysis of experience, for example where members are no longer being eligible for benefits and unknown movements.



### **Year-end data**

- 2.3 We have also been provided with details of active members' individual pensionable salaries as at 31 March 2012. This data was used for the analysis of the promotional salary scale.
- 2.4 The promotional salary scale analysis is based on two components of the year-end data: the member's reckonable service and salary. Reckonable service is taken as the sum of the accrued service and any transferred-in service data fields. Salary is taken as the member's full-time equivalent annual rate of pay as at 31 March 2012.
- 2.5 Data from all authorities was used for the promotional salary scale analysis.



### 3 Adjustments to active movements data

- 3.1 The data items provided for each active member are set out in Appendix A.
- 3.2 The membership data used in our analysis excludes the data from three FRAs because their data did not contain credible movement coding. This data amounts about 7% of the total experience data.
- 3.3 Our analyses of retirement in normal health and withdrawal require information about the service of members at leaving. We also analysed the members' 'service at date of leaving' data field and adjustments were made as follows.
- > Members with less than two years' service (therefore ineligible to retire on grounds of age and service) were excluded from our withdrawal analysis. These members represented 27% of the total active movement data.
  - > For two FRAs, data did not contain a "Service at leaving" field. This data was excluded and amounted to about 7% of the total active movement data.
- 3.4 Withdrawal data for NFPS members was not deemed to be credible and was therefore excluded from the analysis. The removal of these members represented a reduction of 28% of the total active movement data.
- 3.5 For normal health age retirements there was insufficient data to perform an analysis of NFPS Regular or Retained members so these members were excluded from the data examined. This represented about 1% of the total active movement data.
- 3.6 Following the exclusions described above, approximately 44% of the total original active membership data provided has been omitted. The finalised movements data used for the analysis of experience of active members is set out in the table below:

**Table 3.1: Summary of movement data used in analysis of experience of active members**

<b>Movement</b>	<b>Number</b>
Retirement due to age	4,647
Withdrawal	913
Retirement due to ill-health	255
Death	72
<b>Total</b>	<b>5,887</b>

- 3.7 It is possible that the results of the analysis could be materially different if the movement data provided is inaccurate (eg incorrect movement description) or incomplete.



## **4 Adjustments to deferred movements data**

- 4.1 The data items provided for each deferred member are set out in Appendix B.
- 4.2 No amendments were made to the deferred movements data as no experience analysis is carried out for this category of member.



## 5 Adjustments to pensioner movements data

- 5.1 The data items provided for each pensioner are set out in Appendix C.
- 5.2 Details of pension type (eg age retirement, ill-health retirement) was not provided for a significant number of pensioners. The analysis of experience therefore grouped both age retirements and ill-health retirements together in a combined analysis of all male pensioners. This is the same approach as was taken in 2007.
- 5.3 The data provided for current female pensioners was insufficient to carry out a credible analysis, so we analysed male pensioners only. Again, this is the same as the approach taken in 2007.
- 5.4 GAD has carried out validation checks on the pensioner movement data supplied, including a reconciliation with the 2007 valuation data for pensioners. We have worked with the individual FRAs to reconcile the data at 2007, the data at 2012, and the deaths reported during 2007 and 2012. This process uncovered a significant number of extra deaths in 2007 to 2012, included in the total of 2,223 below, which materially affects the results of this analysis. We are grateful to the individual FRAs for their assistance with this exercise.
- 5.5 The final number of male pensioner movements analysed is detailed in table 5.1 below:

**Table 5.1: Summary of movement data used in experience analysis of member pensioner mortality**

<b>Movement</b>	<b>Number</b>
Total deaths provided by authorities	2,258
Total male deaths used	2,223

- 5.6 It is possible that the results of the analysis could be materially different if the movement data provided is inaccurate (eg incorrect movement description) or incomplete.



## **6 Adjustments to dependant movements data**

- 6.1 The data items provided for each dependant are set out in Appendix D.
- 6.2 We have compared the number of dependants as at 31 March 2012 to that implied at this date by the number of dependants at 31 March 2007 and the movements data over the five-year period (ie the number of pensioners who died leaving a dependant, and the number of dependants who died). We were not able to reconcile this comparison to within an acceptable level and as a result, have concluded that a mortality analysis cannot be based on the dependants' movements data.



## **7 Limitations of analysis based on data**

- 7.1 The data described in this report is to be used to inform the process of setting assumptions for the valuation to be undertaken as at 31 March 2012. Past experience over a particular period does not necessarily correlate to an exact expectation for a particular future period. Therefore the weight that is attached to the precise outcome of the inter-valuation experience analysis depends on the analysis itself and an assessment of the extent to which recent experience can be considered to be a guide to the future.
- 7.2 Where other information is considered as part of the process of agreeing assumptions for the valuation such information will be discussed within the report providing our advice on those assumptions.



## Appendix A: Actives movement data

The following data was requested for the inter-valuation period. These are the items where a valid and reasonable data item is required to enable experience analysis to be carried out:

- a. Unique identifier
- b. Scheme
- c. Gender
- d. Date of birth
- e. Marital status
- f. Role
- g. Date joined scheme
- h. Date left
- i. Reason ceased
- j. Part-time status
- k. Service at leaving



## Appendix B: Deferreds movement data

The following data was requested for the inter-valuation period. These are the items where a valid and reasonable data item is required to enable experience analysis to be carried out:

- a. Unique identifier
- b. Scheme
- c. Gender
- d. Date of birth
- e. Marital status
- f. Role
- g. Date joined scheme
- h. Date left
- i. Date ceased
- j. Reason ceased
- k. Part-time status



## Appendix C: Pensioners movement data

The following data was requested for the inter-valuation period. These are the items where a valid and reasonable data item is required to enable experience analysis to be carried out:

- a. Unique identifier
- b. Scheme
- c. Gender
- d. Date of birth
- e. Marital status
- f. Role
- g. Date joined scheme
- h. Date left
- i. Date ceased
- j. Type of pension
- k. Reason ceased
- l. Part-time status
- m. Dependant date of birth
- n. Dependant unique identifier



## **Appendix D: Dependants movement data**

The following data was requested for the inter-valuation period. These are the items where a valid and reasonable data item is required to enable experience analysis to be carried out:

- a. Unique identifier
- b. Scheme
- c. Gender
- d. Date of birth
- e. Dependant type
- f. Dependant date
- g. Date ceased
- h. Reason ceased