



# Government Actuary's Department

## **Armed Forces pension arrangements: Actuarial valuation as at 31 March 2012**

Report on data used for experience analysis

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## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Description of data provided</b>	<b>2</b>
<b>3</b>	<b>Checks carried out on experience data and residual concerns</b>	<b>4</b>
<b>4</b>	<b>Limitations of analysis based on data</b>	<b>8</b>
	<b>Appendix A: Retirements</b>	<b>9</b>
	<b>Appendix B: Early leavers</b>	<b>10</b>
	<b>Appendix C: Deaths</b>	<b>11</b>
	<b>Appendix D: Tier 1 ill-health</b>	<b>12</b>
	<b>Appendix E: Active reports</b>	<b>13</b>
	<b>Appendix F: Pensioner reports</b>	<b>14</b>
	<b>Appendix G: Death in service</b>	<b>15</b>



## 1 Introduction

- 1.1 This report is addressed to the Ministry of Defence (MoD). This report should not be reproduced or disseminated to other parties without prior consent. The Government Actuary's Department (GAD) does not accept any liability to third parties, whether or not it has agreed to the disclosure.
- 1.2 The purpose of this report is to discuss and summarise the member experience data provided and to be used for the purposes of analysing the experience of the Armed Forces pension arrangements (collectively referred to as the 'Schemes') over the period 1 April 2005 to 31 March 2012. The purpose of this document is 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 result.
- 1.3 Membership data used for the actuarial valuation calculations are the subject of a separate report.
- 1.4 All data, provided and discussed in this report were supplied by the administrators of the Schemes, Defence Business Services ('DBS'). Annual accounts for the relevant period are publicly available.
- 1.5 Throughout this report the totals given for summed data may not be exactly the same as the sum of the components shown due to rounding effects.
- 1.6 In preparing this report, GAD has relied on data and other information supplied by DBS as described in the report. Any checks that GAD has made on this information are limited to those described in the 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.



## 2 Description of data provided

2.1 Unless otherwise stated, the experience data described below only includes members of the following schemes:

- > Armed Forces Pension Scheme 1975 (AFPS 75)
- > Armed Forces Pension Scheme 2005 (AFPS 05)
- > Reserve Forces Pension Scheme
- > Full Time Reserve Service Pension Scheme.

### **Retirements**

2.2 DBS provided data in the form of individual member records for active members who left service with an immediate pension or early departure payment (EDP) over the inter-valuation period<sup>1</sup>. The data items provided for each member are set out in Appendix A.

### **Early leavers**

2.3 DBS provided data in the form of individual member records for active members who left service without an immediate pension or EDP in the inter-valuation period. The data items provided for each member are set out in Appendix B.

### **Deaths**

2.4 DBS provided data in the form of individual member records for members and dependants who died in the inter-valuation period. The data items provided for each member are set out in Appendix C.

### **'Tier 1' ill-health**

2.5 DBS provided data in the form of individual member records for members of AFPS 05 who received lump sums (but not enhanced ill-health pensions or early departure payments) on leaving service due to ill-health in the inter-valuation period. The data items provided for each member are set out in Appendix D.

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<sup>1</sup> The period 1 April 2005 to 31 March 2012 for the purposes of this report



### **Active reports**

- 2.6 DBS provided listings of numbers of active members split both by year of birth and length of service each year from 1 April 2005 to 1 April 2012 inclusive. These extracts enabled 'exposed to risk' populations to be identified in a manner enabling actual retirements and early leavers to be compared to the numbers of assumed movements expected based on assumptions developed for previous valuation purposes.

The key items of the year end data as used for experience analysis for retirements and early leavers are shown in Appendix E.

### **Pensioner reports**

- 2.7 DBS provided listings of numbers of pensioners and dependants split by year of birth each year from 1 April 2005 to 1 April 2012 inclusive. However, these extracts were not sufficiently reliable for use in our analysis. This is discussed further in section 3.
- 2.8 The key items of the year end data provided are shown in Appendix F.

### **Accounting information**

- 2.9 Published annual accounts were available for the full inter-valuation period. These include summaries of the Scheme's membership and membership movements for each accounting period as summarised in section 3.

### **Death in service**

- 2.10 Data on the total numbers of deaths of serving members of the Armed Forces for the inter-valuation period was available in a report<sup>2</sup> and accompanying spreadsheet published by Defence Statistics. The information used is set out in Appendix G.

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<sup>2</sup> See

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/295835/20140327\\_UKAF\\_deaths\\_National\\_Statistic\\_2013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295835/20140327_UKAF_deaths_National_Statistic_2013.pdf)



### 3 Checks carried out on experience data and residual concerns

- 3.1 The main checks carried out consisted of comparing the total membership movements from information provided by DBS with the corresponding figures based on information published in the AFPS Annual Accounts.
- 3.2 This comparison is shown in the tables below. The following notes apply to these tables:
- > The 'valuation data' numbers as at 1 April 2005 and 31 March 2012 are taken from the stock membership data supplied for each of these valuations. This is because of issues around the active and pensioner reports described later in this section.
  - > No movement experience data was collected for deferred members as part of the 2012 valuation.
  - > The annual accounts numbers in some cases reflect numbers of benefit records rather than number of members.
  - > Totals may not sum due to rounding.

**Table 1: Active member movements**

	Valuation data (000s)	Annual accounts (000s)
<b>Number at 1 April 2005</b>	199	196
Total start of year adjustments	-	17
<b>Additions</b>		
New entrants	136*	136
Re-entrants	-	-
<b>Deductions</b>		
Deaths	(1)	(1)
Retirements	(43)	(43)
Withdrawals	(115)**	(108)
Transfers out	-	(4)
<b>Number expected at 31 March 2012</b>	177	192
<b>Number recorded at 31 March 2012</b>	191	192
<b>Difference</b>	14	-

\*Not available – assumed as per accounts

\*\*Assumed to include transfers out



**Table 2: Deferred member movements**

	Valuation data (000s)	Annual accounts (000s)
<b>Number at 1 April 2005</b>	288	290
Total start of year adjustments	-	91
<b>Additions</b>		
New deferreds	n/a	95
<b>Deductions</b>		
Deaths	n/a	-
Retirements	n/a	(37)
Lapsed	n/a	(3)
Other exits	n/a	(2)
<b>Number expected at 31 March 2012</b>	n/a	435
<b>Number recorded at 31 March 2012</b>	399	435
<b>Difference</b>	-	-

**Table 3: Pensioner member movements**

	Valuation data (000s)	Annual accounts (000s)
<b>Number at 1 April 2005</b>	347	345
Total start of year adjustments	-	25
<b>Additions</b>		
New pensioners	91*	91
New dependants	16*	16
<b>Deductions</b>		
Pensioner deaths and other cessations	(66)**	(54)
Dependant deaths and other cessations	-	(17)
<b>Number expected at 31 March 2012</b>	388	406
<b>Number recorded at 31 March 2012</b>	380	406
<b>Difference</b>	(8)	-

\*Not available – assumed as per accounts

\*\*Represents total deaths for pensioners and dependants



- 3.3 There are some discrepancies between the figures in the Annual Accounts compared to the valuation data. We understand that the main reasons for this are as follows:
- > The databases used to record member information are dynamic systems that allow records to be updated retrospectively. It is therefore accepted that opening balances for annual accounts purposes will not necessarily reconcile to the previous years' closing balances.
  - > The experience data provided by DBS only covers AFPS 75, AFPS 05, RFPS and FTRSPS, whereas the numbers in the annual accounts in some cases also cover the Gurkha Pension Scheme.
  - > The approach used to record deferred member numbers in the accounts has changed over this period from number of members to number of benefit records. For example:
    - o members of AFPS 75 can draw deferred benefits from age 60 for service before 2006 and from age 65 for later service, and thus may be categorised as both a deferred and pensioner member while aged between 60 and 65
    - o members can have benefits in more than one scheme and can have more than one benefit in the same scheme.
  - > There have been significant data cleansing exercises during this period in relation to deferred members, reflected by accounting adjustments. The net effect of these adjustments was an increase of around 70,000 deferred member records over the period.
  - > The classification of members leaving with an Early Departure Payment from AFPS 05 (as deferred or pensioner members) is different in the two data sources.
- 3.4 As part of our analysis of experience data we identified a number of residual concerns which are discussed in the following paragraphs.

### **Pensioner mortality**

- 3.5 The information provided as to whether deaths were of normal or ill-health pensioners was incomplete. We therefore did not use this information. Instead we analysed all deaths together and derived mortality rates based on the combined experience of normal and ill-health pensioners.
- 3.6 The pensioner reports provided (showing the number of pensioners between 2005-12) were not sufficiently reliable for use in our analysis. For example, they excluded a significant number of records not held on the administration system. Instead we approximated the number of pensioners in the population during this period using the 2012 pensioner membership data rated up to allow for the change in pensioner numbers over the period. This approach is reasonable provided that the age profile of the pensioner population has not changed significantly over that period, which is broadly supported by pensioner data received for the 2005 actuarial assessment.
- 3.7 The death data supplied did not have a reliable member/dependant indicator. We were therefore unable to carry out separate analysis for members and dependants.





- 3.8 The indicators in the data supplied for males/females and officers/other ranks did not appear to be sufficiently reliable to support analysis split by these indicators. Instead our analysis was carried out at a global level.
- 3.9 While we believe that the analysis we have carried out is sufficient to recommend mortality assumptions which broadly reflect recent experience at a global level, it is likely that different assumptions would have been recommended if more detailed and/or reliable data had been available.

### Active reports

- 3.10 We understand that a 'JPA alignment' exercise was carried out in April 2009, which resulted in the removal of spurious active member records from the pensions administration database by reference to the Joint Personnel Administration (JPA) system.
- 3.11 The final active reports received from DBS included only those members who remained on the pensions administration system following the JPA alignment. This understated the numbers in periods prior to the JPA alignment, because any members who had been in service but left before then would not be reflected in the reports.
- 3.12 We therefore uprated the numbers of members in service prior to 2009 in the second set of reports by reference to numbers reported in annual accounts. We assumed that the membership profile would not be altered by this uprating. This was broadly supported by reference to the active membership profiles in 2005 (including only those who remained on the system following JPA alignment) and 2012.
- 3.13 We believe that this approach is reasonable and will lead to exit assumptions (age retirement, ill-health retirement, withdrawal) which broadly reflect recent experience. However, it is possible that different assumptions would have been recommended if active reports which fully reflected the JPA alignment had been available.



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

- 4.1 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 is a guide to the future.
- 4.2 Where other information is considered as part of the process of agreeing assumptions for the valuation such information is discussed within the report providing our advice on those assumptions.



## Appendix A: Retirements

The following data was provided in respect of active members who left service with an immediate pension or EDP during the inter-valuation period:

- a. Unique identifier
- b. Scheme identifier
- c. Service identifier
- d. Date of birth
- e. Gender
- f. Marital status
- g. Pension rank
- h. Discharge date
- i. Reckonable service
- j. Pension type (eg normal retirement, EDP, ill-health pension)



## Appendix B: Early leavers

The following data was provided in respect of active members who left service without an immediate pension or EDP during the inter-valuation period:

- a. Unique identifier
- b. Scheme identifier
- c. Service identifier
- d. Date of birth
- e. Gender
- f. Marital status
- g. Rank
- h. Discharge date
- i. Reckonable service



## Appendix C: Deaths

The following data was provided in respect of members or dependants who died in the inter-valuation period:

- a. Unique identifier
- b. Scheme identifier
- c. Service identifier
- d. Date of birth
- e. Gender
- f. Marital status<sup>3</sup>
- g. Date of death
- h. Type of member<sup>3</sup>
- i. Reason for retirement<sup>3</sup>
- j. Date pension commenced

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<sup>3</sup> These items were only provided for a limited subset of records



## Appendix D: Tier 1 ill-health

The following data was provided in respect of members of AFPS 05 who were awarded Tier 1 ill-health lump sums in the inter-valuation period:

- a. Unique identifier
- b. Scheme identifier
- c. Service identifier
- d. Date of birth
- e. Gender
- f. Marital status
- g. Rank
- h. Discharge date
- i. Reckonable service
- j. Tier 1 lump sum amount



## Appendix E: Active reports

Data provided each year (ie 1 April 2005, 2006, ... , 2012):

- > Number of active members in each scheme (AFPS 75, AFPS 05, RFPS, FTRS)
- > Separate reports provided, split by year of birth and length of service respectively
- > Split by Officers/Other Ranks and by gender
- > Summary totals by scheme.



## Appendix F: Pensioner reports

Data provided each year (ie 1 April 2005, 2006, ... , 2012):

- > Number of pensioners and dependants in each scheme (AFPS 75, AFPS 05, RFPS, FTRS) split by year of birth
- > Split by Officers/Other Ranks and by gender
- > Split by type of pension (eg ill-health, normal retirement, surviving dependant).





## Appendix G: Death in service

Data available from report published by Defence Statistics<sup>4</sup>:

- > Total number of deaths of service personnel for each calendar year from 2004 to 2013 inclusive
- > Split by service
- > Split by cause of death (eg disease, Land Transport accidents, hostile action)
- > Standardised mortality ratios (comparing death rates to overall UK population).

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<sup>4</sup> See

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/295835/20140327\\_UKAF\\_deaths\\_National\\_Statistic\\_2013.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295835/20140327_UKAF_deaths_National_Statistic_2013.pdf)