Government Actuary's Department

Police pension schemes (England & Wales)

Actuarial valuation as at 31 March 2012

Report on membership data

Date: 11 December 2014

Author: Matt Wood and Samantha Watts

Contents

1   Introduction

1.1   This report is addressed to the Home Office. It is also being made available to the Police Negotiating Board as part of the consultation process relating to the actuarial valuation which is being carried out as at 31 March 2012. 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   This report discusses and summarises the membership and accounting data provided to GAD for members of the Police Pension Scheme (PPS) and the New Police Pension Scheme (NPPS), referred to collectively in this report as the police pension schemes ('the Schemes'), and to be used by GAD for the purposes of the actuarial valuation as at 31 March 2012. It also sets out the checks that GAD has undertaken on this data.

1.3   The results of the valuation are critically dependent on the quality and correctness of the data used. The purpose of this document is to ensure 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.

1.4   Experience data used to inform the assumptions appropriate for the valuation is the subject of a separate report.

1.5   All member data and supplementary accounting information provided and discussed in this report were supplied to GAD either directly by the individual police forces or via their appointed administrators. In preparing this report, GAD has relied on data and other information supplied by the police forces 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 and do not by themselves confirm or guarantee the overall quality or correctness of the data. In particular, GAD has relied on the general completeness and accuracy of the information supplied without independent verification.

1.6   The contents of this report have been discussed and agreed with the Home Office who have confirmed that they are content that the resulting data is appropriate for use in the 2012 actuarial valuation of the police pension schemes.

1.7   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.

2   Description of data provided

Individual member data

2.1   Individual member data was supplied for all active members, deferred members and current beneficiaries of the Schemes.

2.2   The data items requested for each member in the data specification dated 20 November 2012 are set out in Appendix A.

2.3   Each of the 43 police forces in England and Wales, plus the organisations College of Policing (COP), Her Majesty's Inspectorate of Constabulary (HMIC) and Serious Organised Crime Agency (SOCA) have provided data for all individual members of the schemes as at 31 March 2012.

2.4   Most police forces were able to provide most of the data items requested.

2.5   Where data items were not available from members' electronic files (e.g. dependants' pension amounts for current pensioner members) we did not ask forces to undertake the extensive work of extracting the information from paper files.

2.6   Where a requested data item was missing but an alternative data item could be used to form a reasonable estimate of it (e.g. Average Pensionable Pay can be used to estimate Pensionable Salary) we repeated our request but did not strongly pursue the missing data item.

2.7   Details of all adjustments made to the data provided and the estimates used are set out in Sections 3 to 5 of this report.

2.8   We received late submissions of revised data from Dorset (pensioners and dependants), Northumbria (mainly active members) and Cumbria (pensioners). We have allowed for the revised actives data received from Northumbria in the valuation calculations but have excluded the other late submissions detailed above as they would not materially affect the valuation results.

Accounting information

2.9   Police forces were asked to provide audited accounts for the year 1 April 2011 to 31 March 2012. Most police forces were able to provide this information but annual accounting information specific to the organisation HMIC was not available. For police forces where the accounts were available, certain pieces of financial information from the accounts were used to perform independent checks on the valuation data as explained in Sections 3 to 5.

3   Active member data

Introduction

3.1   This section discusses the data provided for active members for the purposes of this valuation. It sets out the checks and adjustments we have made to the data provided and shows summary statistics about the data following implementation of the required data adjustments.

3.2   Each of the 43 police forces in England and Wales, plus the organisations COP, HMIC and SOCA, provided data separately. The total combined active member dataset contains 134,403 members (108,229 PPS and 26,174 NPPS members).

3.3   Under the terms of the reforms being made to public service pension schemes from 2015, members above a certain age, and PPS members who meet certain age and service criteria, will remain in their existing schemes until retirement. These members are called 'Protected Members'. Members failing to meet the protection criteria by a small margin will transfer to the 2015 scheme between 1 April 2015 and 1 April 2022. These members are called 'Tapered Members'. The details of those covered by protection and tapering are set out in Appendix B. All other members are called 'Unprotected Members'. Since the benefits to be provided for members after 1 April 2015 will depend on which group they fall into we have identified those members within each group.

3.4   The active member data used will help determine the past service liability and the contribution rates payable from 2015. It also influences the calculation of the cost cap.

Checks applied to individual active member data

3.5   Each police force was asked to enter their data into a standard template and to run a macro which GAD provided within the template spreadsheet. The macro contained some checks on the completeness and consistency of the data entered into the template against the data specification. Police forces were asked to consider the output of the macro checks and provide explanations or amend any data which did not fall within the boundaries permitted by the checks prior to submitting their data. Most police forces were able to run the macro checks.

3.6   Once the data was submitted to GAD, we re-ran the macro (or ran for those unable to use the macro checks) and performed additional checks on the critical[1] data items. We queried any critical data items which were not properly completed or which contained unexpected entries.

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[1] Critical data items are those required to determine a liability for an individual member. These data items are shown in bold in Appendix A

3.7 Common errors in the initial submissions are set out below:

> Pensionable salary showing as zero for some members;

> Pensionable salary information provided was not full-time equivalent;

> Pensionable salary information provided was not the annual rate of pay for members joining after 1 April 2011;

> Average Pensionable Pay entered into pensionable salary data field (where pensionable salary data was not available).

3.8 Forces generally responded to our queries with revised data which satisfied our checks. Where data was not available we have made adjustments and have estimated data as set out in paragraphs 3.19 to 3.25.

Checks against audited accounts

3.9 The revised datasets for each individual force were then subjected to some independent checks against the forces' audited accounting data. The total pensionable salary roll in the data was compared against contribution payments recorded in the annual accounts. The conclusions arising from this checking process are explained below.

3.10 We requested that forces supply the full-time equivalent annual rate of pay as at 31 March 2012 in the pensionable salary field. The accounts show the amount of member contributions into the police pension schemes (usually shown separately for PPS and NPPS) over the year 1 April 2011 to 31 March 2012. Member contributions can be converted to implied pay over the year by dividing through by the employee contribution rates payable over this period (11% for PPS members and 9.5% for NPPS members).

3.11 Using this approach we expected the pensionable salary total to exceed the implied pay from contributions because we requested that the pensionable salaries provided for members show the full-time equivalent, whereas the implied pay would take into account the actual pay on which members are paying contributions. So for part-time members, the pensionable salary would be expected to exceed the implied pay from their contributions. This does not significantly impact the comparison since the majority of members work full-time hours.

3.12 Changes in the size of the active membership over the year also affect the comparison of pensionable salary to implied pay from contributions.

3.13 Taking these factors into account, we were content that the total pensionable salary roll compared reasonably well with implied pay from contributions for all forces. Our tolerance for the comparison was that total pensionable salary roll had to be within 5% of implied pay.

3.14 Finally, after application of all of the adjustments detailed in paragraphs 3.19 to 3.25 below, we applied an overall check on the combined pensionable salary roll for all forces against the combined implied pay from contributions recorded in the audited accounts for all forces. The combined pensionable salary roll is within 1.5% of the combined implied pay from contributions from the audited accounts. We consider this to be reasonable.

Checks for systematic errors in data extracts

3.15 We randomly selected one male member and one female member from ten of the larger police forces and compared the data provided with that which was submitted for the uncompleted valuation of the schemes as at 31 March 2008. The forces selected represented each of the four main administrators (Heywood, Mouchel, Capita and Xafinity).

3.16 Our checks were trying to identify any systematic issues with the reports which were used to extract the data that we requested. For most members selected, the critical data items were consistent with the data provided in 2008 (i.e. same scheme/gender/date of birth/date joined scheme, a reasonable increase in pensionable salary and increase in active service of 4 years, except where part-time).

3.17 There were some fields which were not consistent for all members (e.g. date joined scheme changed or active service increase was not as expected). For these members we compared data provided for all members of the force and found that only small sections of the dataset were affected by the issues identified. We were content that no systematic issues were identified. Given the numbers of members involved we interpreted the changes to be due to different approaches for presenting inter-force transfers or transfers-in or similar and did not raise any queries with police forces.

Checks for consistency of data between police forces

3.18 The populations of most of the police forces would not be expected to differ significantly from each other. As a broad reasonableness check, averages of the key data items (age, service, salary, dependant service) were compared between all of the police forces. Data for most forces fell within 10% either side of the average (15% for NPPS females where the membership groups are smaller), and where it did not this could be explained.

Adjustments made to the active member data

3.19 Pensionable salary not provided: 11 police forces (covering 19.7% of the active membership) were only able to provide average pensionable pay (i.e. the pensionable salary over the year to the valuation date) rather than pensionable salary (i.e. the annual rate of pensionable salary payable at the valuation date). For these police forces we estimated pensionable salaries from average pensionable pay by matching the average pensionable pay to the next highest salary on the police pay scale in force at the valuation date (no adjustment was made where the average pensionable pay provided equalled the highest possible salary for a member's rank).

3.20 Pensionable salary too low: 192 members were recorded with a salary below the minimum payable to a constable on the valuation date. We have replaced the data provided for these members with averages from members in the same scheme and of the same gender, as per paragraph 3.24 below.

3.21 Dependants' service: Five police forces (covering 9.7% of the active membership) did not provide dependants' service. Where not provided, we estimated dependants' service by applying the average dependants' service as a proportion of members' service calculated for other members in the same scheme and of the same gender to the member's service.

3.22 Dependants' service: For some members (covering 1.7% of the active membership), dependant's service exceeded the corresponding member's service. In these cases, we have capped the dependant's service at the duration of the corresponding member's service (including transferred-in service).

3.23 Part-time details: 905 members (0.7% of the active membership) were recorded as being part-time but had no current part-time percentage. We have interpreted this as meaning that whilst the members have a period of part-time employment in the past, they are currently working full-time hours.

3.24 Members where date of birth, pensionable salary or active service is missing or zero after the checks and adjustments noted above: Where one of these data items was missing we have replaced all of the members' data items with averages calculated from members in the same scheme and of the same gender. There were 203 members for whom average details have been used to overwrite the incomplete data provided. This includes the 192 members detailed in paragraph 3.20 above.

3.25 Members where the date joined scheme is prior to their date of birth: There were 8 members (less than 0.1% of the active membership) where this occurred. For these members we have replaced the original date joined scheme with the average calculated from members in the same scheme and of the same age and gender.

Data summaries

3.26 The data provided by the police forces, following implementation of the adjustments made to improve the quality of the data and/or to estimate missing data is summarised below.

Table 1: Summary data for PPS active members

Protection	Gender	Number of members	Total pensionable salary(i) £m	Average age(ii)	Average service(iii)
Protected	Male	39,135	1,655.9	47.9	23.5
	Female	9,075	372.3	46.9	21.1
	Total	48,210	2,028.2	47.7	23.1
Taper	Male	12,091	480.3	41.8	15.7
	Female	4,618	179.8	41.6	14.9
	Total	16,709	660.1	41.7	15.5
Unprotected	Male	29,142	1,072.4	34.7	10.3
	Female	14,168	511.8	34.3	9.7
	Total	43,310	1,584.2	34.6	10.1
All PPS members	Male	80,368	3,208.5	42.6	17.6
	Female	27,861	1,063.9	39.9	14.3
	Total	108,229	4,272.5	41.9	16.7

i.   Pensionable salary is the full-time equivalent annual rate of pay at 31 March 2012

ii. Weighted by full-time equivalent pensionable salary

iii. Active service in the Schemes plus transferred-in service

Table 2: Summary data for NPPS active members

Protection	Gender	Number of members	Total pensionable salary(i) £m	Average age(ii)	Average service(iii)
Protected	Male	883	28.4	48.3	7.3
	Female	366	11.6	48.4	7.0
	Total	1,249	40.0	48.3	7.2
Taper	Male	895	27.8	42.9	6.8
	Female	499	15.2	42.8	6.2
	Total	1,394	43.0	42.9	6.6
Unprotected	Male	14,752	440.0	30.1	4.3
	Female	8,779	261.9	29.8	4.4
	Total	23,531	701.9	30.0	4.4
All NPPS members	Male	16,530	496.2	31.9	4.6
	Female	9,644	288.8	31.3	4.6
	Total	26,174	785.0	31.7	4.6

i.   Pensionable salary is the full-time equivalent annual rate of pay at 31 March 2012

ii. Weighted by full-time equivalent pensionable salary

iii. Active service in the Schemes plus transferred-in service

Table 3: Summary data for all active members

Gender	Number of members	Total pensionable salary[i] £m	Average age[ii]	Average service[iii]
Male	96,898	3,704.7	41.2	15.4
Female	37,505	1,352.7	38.1	11.8
Total	134,403	5,057.4	40.3	14.4

i.   Pensionable salary is the full-time equivalent annual rate of pay at 31 March 2012

ii. Weighted by full-time equivalent pensionable salary

iii. Active service in the Schemes plus transferred-in service

3.27   For comparison, the table below summarises the totals of the original (unadjusted) data provided to us by forces.

Table 4: Summary data for all active members prior to adjustments

	Number of members	Total pensionable salary[i] £m	Average age[ii]	Average service[iii]
Total	134,403	5,029.0	40.3	14.4

i.   Pensionable salary is the full-time equivalent annual rate of pay at 31 March 2012

ii. Weighted by full-time equivalent pensionable salary

iii. Active service in the Schemes plus transferred-in service

Added years data

3.28   In addition to the data discussed above, we were provided with information about added years which have been purchased by 672 active members (0.5% of the active membership).

3.29   Added years purchased at the valuation date (a proportion of those which will be purchased over the entire duration of the contract for members who elected to purchase the added years with periodic contributions) will be valued along with the active member benefits.

3.30   The number of added years purchased was not available for the 197 members of the Metropolitan police force who have added years contracts in force. Whilst this is a large proportion of the added years population, the impact of added years contracts on the overall liability of the schemes will be very small. As such, we have estimated the number of added years purchased at the calculation date for these members by using the averages calculated from members in the same scheme and of the same gender.

3.31   The date of birth and date joined scheme was not provided for added years purchased by 3 active members. We have excluded these in our valuation calculations and this will not materially affect the valuation results.

3.32   In total we will value 478 years of service (421 in the PPS and 57 in the NPPS) at 31 March 2012 in respect of added years contracts.

4   Deferred member data

Introduction

4.1   This section discusses the data provided for deferred members for the purposes of this valuation. Deferred members are predominantly former active members of the schemes, but they also include pension credit members (which arise following a divorce) where the pension credit is not yet payable. This section also sets out the checks and adjustments we have made to the data and shows summary statistics about the data following implementation of the required data adjustments.

4.2   Each of the 43 police forces in England and Wales, plus the organisation SOCA (COP and HMIC have no deferred or pension debit members), provided data separately. The total deferred member dataset contains 23,161 members (22,072 PPS and 1,089 NPPS members). Included within the figures above are 1,568 pension credit members (1,566 in the PPS and 2 in the NPPS).

4.3   All benefits that have been accrued in the existing schemes at the valuation date will be payable from the scheme in which they were accrued. There are no tapered or unprotected members, unlike the active membership.

4.4   The deferred member data used will help determine the past service liability result and the contribution rates payable from 2015 but will not affect the cost cap.

Checks applied to deferred member data

4.5   Each police force was asked to enter their data into a standard template and to run a macro which GAD provided within the template spreadsheet. The macro contained some checks on the completeness and consistency of the data entered into the template against the data specification. Police forces were asked to consider the output of the macro checks and provide explanations or amend any data which did not fall within the boundaries permitted by the checks prior to submitting their data. Most police forces were able to run the macro checks.

4.6   Once the data was submitted to GAD, we re-ran the macro (or ran for those unable to use the macro checks) and performed additional checks on the critical[2] data items. We queried any critical data items which were not properly completed or which contained unexpected entries.

4.7   Common errors in the initial submissions are set out below:

>   Deferred pension showing as zero for some members;

>   Date payable (this being the date from which the deferred pension is due to come into payment) showing date that the member became deferred.

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[2] Critical data items are those required to determine a liability for an individual member. These data items are shown in bold in Appendix A

4.8   Forces generally responded to our queries with revised data which satisfied our
        checks. Where data was not available we have made adjustments and have estimated
        data as set out in paragraphs 4.14 to 4.18.

Checks against audited accounts

4.9   It was not possible to undertake any independent checks (against accounting
        information, or otherwise) on the deferred member data.

Checks for systematic errors in data extracts

4.10   We randomly selected a couple of individual members from ten of the larger police
        forces and compared the data provided with that which was submitted for the
        uncompleted valuation of the schemes as at 31 March 2008. The forces selected
        represented each of the four main administrators (Heywood, Mouchel, Capita and
        Xafinity).

4.11   Our checks were trying to identify any systematic issues with the reports which were
        used to extract the data that we requested. For most members selected, the critical
        data items were consistent with the data provided in 2008 (i.e. same
        scheme/gender/date of birth/date became deferred and a reasonable increase in
        current deferred pension).

4.12   There were some fields which were not consistent for all members (e.g. increase in
        current deferred pension was not as expected). For these members we compared data
        provided for all members of the force and found that data for very few members
        change in an unexpected way. We were content that no systematic issues were
        identified. Given the numbers of members involved we interpreted the changes to be
        due to data cleaning or similar and did not raise any queries with police forces.

Checks for consistency of data between police forces

4.13   The populations of most of the police forces would not be expected to differ
        significantly from each other. As a broad reasonableness check, averages of the key
        data items (age, current pension, dependant pension) were compared between all of
        the police forces. Average data for most forces fell within a reasonably small range,
        and where it did not this could generally be explained. For one police force this check
        highlighted an error in the data, which was corrected after contacting the administrator.

Adjustments made to the deferred member data

4.14   Revaluation: We requested that police forces provide member and dependant current pensions including all pension increases up to that which was effective from 9 April 2012. We also asked police forces to complete a questionnaire to confirm the dates to which pensions had been revalued. Six police forces (12.1% of the deferred pension roll) stated that they had provided pensions which included increases up to 2011 only. Cambridgeshire (covering 0.9% of the deferred pension roll) stated that the pensions provided were amounts as at the date of leaving active service. For these forces we have adjusted the pensions provided so that they include all pension increases to 9 April 2012. This is an accurate adjustment. Please note that we have not independently verified the police forces' questionnaire responses.

4.15   Contingent dependants' pensions: Contingent dependants' pensions did not look credible for 13 forces (48.1 % of the deferred pension roll). We have set contingent dependant's pensions to 50% of members' current pensions for all forces. This is a slight overstatement for any deferred member with service in the periods which did not qualify for 50% dependants' pensions (i.e. before 1972 for male members and before 1990 for female members). Given the very small deferred membership of the schemes (and in particular, the small number of members not accruing 50% pension over their entire period of service) this will not have a material impact on the valuation results (and will not affect the cost cap).

4.16   149 members were recorded with a date payable that was later than the maximum expected (i.e. after the latest payment age under the regulations of the schemes). We will assume that benefits come into payment at date that the member meets the maximum payment age under the scheme regulations (i.e. age 60 for PPS members and age 65 for NPPS members).

4.17   749 members were recorded with a date payable which was before the minimum expected (i.e. either before the earliest payment age under the regulations of the schemes or before the valuation date). Many of these members became eligible for payments before the valuation but have not yet claimed that entitlement. We will assume that benefits come into payment on the valuation date for these members. A subset of these members had errors in the date payable entries (e.g. same date as leaving service) and we will assume that the pensions will become payable at the date that the member meets the minimum payment age under the scheme regulations. Whilst this may slightly overstate the past service liability the impact is not material overall and it will not affect the cost cap.

4.18   Members where date of birth or current pension was missing or zero after the checks and adjustments noted above: Where either of these data items is missing we have replaced all of the members' data items with averages calculated from members in the same scheme and of the same gender. There were 65 members for whom average details have been used to overwrite the incomplete data provided.

Data summary

4.19 The data provided by the police forces, following implementation of the adjustments made to improve the quality of the data and/or to estimate missing data is summarised below.

Table 5: Summary data for deferred members[(i)]

Scheme	Gender	Number of members	Total deferred pension[(ii)] £m	Average age[(iii)]
PPS	Male	13,420	103.9	47.9
	Female	8,652	52.6	47.7
	Total	22,072	156.5	47.8
NPPS	Male	690	1.2	35.8
	Female	399	0.6	35.4
	Total	1,089	1.8	35.7
Combined schemes				
	Male	14,110	105.1	47.7
	Female	9,051	53.3	47.6
	Total	23,161	158.4	47.7

i.   includes pension credit members in deferment

ii.   including pension increases awarded to 9 April 2012

iii. weighted by deferred pension

4.20 For comparison, the table below summarises the totals of the original (unadjusted) data provided to us by forces.

Table 6: Summary data for deferred members prior to adjustment

	Number of members	Total deferred pension[(i)] £m	Average age[(ii)]
Total	23,161	156.8	47.7

i.   including pension increases awarded to 9 April 2012

ii. weighted by deferred pension

Pension debits data

4.21   In addition to the data discussed above, we were provided with information about pension debits (following a pension sharing order) which apply to 1,120 active or deferred members.

4.22   Since pension debits are fixed pension amounts (increasing with pension increases, rather than salary), they are similar to deferred pensions. The debits will be valued as negative deferred liabilities.

4.23   Similarly to paragraph 4.14, where pension increases to 9 April 2012 were not included in the data provided we increased the pension amounts.

4.24   We added the date that the pension debit will start to be deducted from members' pensions. These were taken to be the same as the date that the members' deferred pensions are due to commence for deferred members and age 60 for active members. For active members the debits are payable from the members' deferred pension ages at the transfer date. This may be immediately, at age 50 or at age 60. The use of age 60 for all active members is a simplification, but one which is not expected to be material.

4.25   For the 2 members where the year of birth indicated an age of less than 18, we have replaced the member's year of birth with an average calculated from all other deferred members.

4.26   The data provided by the police forces, following implementation of the adjustments made to improve the quality of the data and/or to estimate missing data is summarised below.

Table 7: Summary data for pension debit members

Scheme	Gender	Number of members	Total pension debit[i] £m	Average age[ii]
PPS	Male	1,098	7.2	48.6
	Female	20	0.1	50.4
	Total	1,118	7.3	48.7
NPPS	Male	2	0.0	52.9
	Female	0	0.0	-
	Total	2	0.0	52.9
Combined Schemes				
	Male	1,100	7.2	48.6
	Female	20	0.1	50.4
	Total	1,120	7.3	48.7

i.   including pension increases awarded to 9 April 2012

ii.   weighted by pension debit

4.27 For comparison, the table below summarises the totals of the original (unadjusted) data provided to us by forces.

Table 8: Summary data for pension debit members prior to adjustment

	Number of members	Total pension debit[i] £m	Average age[ii]
Total	1,120	7.2	48.7

i. including pension increases awarded to 9 April 2012

ii. weighted by pension debit

5   Pensioner and dependant member data

Introduction

5.1   This section discusses the data provided for pensioner members and dependants for the purposes of this valuation. It sets out the checks and adjustments we have made to the data provided and shows summary statistics about the data following implementation of the required adjustments.

5.2   Each of the 43 police forces in England and Wales, plus the organisations COP, HMIC and SOCA, provided data separately. The total pensioner member dataset contains 115,309 members (115,292 PPS and 17 NPPS members). The total dependant member dataset contains 23,197 members (23,155 PPS and 42 NPPS members).

5.3   All benefits that have been accrued in the existing schemes at the valuation date will be payable from the scheme in which they were accrued. There are no tapered or unprotected members, unlike the active membership.

5.4   The pensioner member and dependant data will affect the past service liability result and the contribution rates payable from 2015 but will not affect the cost cap.

Checks applied to pensioner member and dependant data

5.5   Each police force was asked to enter their data into a standard template and to run a macro which GAD provided within the template spreadsheet. The macro contained some checks on the completeness and consistency of the data entered into the template against the data specification. Police forces were asked to consider the output of the macro checks and provide explanations or amend any data which did not fall within the boundaries permitted by the checks prior to submitting their data. Most police forces were able to run the macro checks.

5.6   Once the data was submitted to GAD, we re-ran the macro (or ran for those unable to use the macro checks) and performed additional checks on the critical[3] data items. We queried any critical data items which were not properly completed or which contained unexpected entries.

5.7   Common errors in the initial submissions are set out below:

>   Type of pension not recorded for some pensioner members;

>   Date pension began for pensioner members was showing a date after 31 March 2012;

>   Zero or blank current pension.

5.8   Forces generally responded to our queries with revised data which satisfied our checks. Where data was not available we have made adjustments and have estimated data as set out in paragraphs 5.18 to 5.22.

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[3] Critical data items are those required to determine a liability for an individual member. These data items are shown in bold in Appendix A

Checks against audited accounts

5.9   The revised datasets for each individual force were then subjected to some independent checks against their audited accounting data. The total pension payroll recorded in the pensioner member and dependant datasets were compared to pension payments recorded in the annual accounts. The conclusions arising from this checking process are explained below.

5.10   We requested that forces supply current pensions including the pension increase effective from 9 April 2012. The accounts show the total pension payments from the Schemes over the year 1 April 2011 to 31 March 2012 (i.e. amounts which would not include this 2012 increase). Where police forces stated that the 2012 pension increase was included in the current pensions provided we stripped this out approximately to obtain an estimate of non-increased pensions in payment at 31 March 2012. We then compared the combined (adjusted) pensions in the pensioner member and dependant datasets to the figure showing in the accounts (this is not usually split between payments to pensioners and dependants).

5.11   Changes in the size of the pensioner and dependant populations over the year also impact on the comparison of the pension payroll at 31 March 2012 to the pension payments recorded in the accounts.

5.12   Taking these factors into account, we were content that the total pensions in payment compared reasonably well with the accounts for all forces except Dorset and Kent. Our tolerance for the comparison was that total pensions payments in the datasets had to be within 5% of pensions payments recorded in the accounts. Dorset have since submitted revised data which fits within our tolerance range (but due to the timing of receipt and considerations of materiality this has been excluded, see comments in paragraph 2.8). We were unable to resolve the inconsistency with the Kent data. It is unclear whether the accounts data provides a more accurate representation of the actual amount of pensions in payment. Home Office have instructed us to use the individual membership data (after the application of the adjustments set out below).

5.13   Finally, after application of all of the adjustments detailed in paragraph 5.18 to 5.22 below, we applied an overall check on the combined pensions in payment for all forces against the combined pension payments recorded in the audited accounts for all forces. The combined pensions in payment are within 1.6% of the combined pension payments from the audited accounts. We consider this to be reasonable.

Checks for systematic errors in data extracts

5.14   We randomly selected a couple of individual members from ten of the larger police forces and compared the data provided with that which was submitted for the suspended valuation of the schemes as at 31 March 2008. The forces selected represented each of the four main administrators (Heywood, Mouchel, Capita and Xafinity).

5.15   Our checks were trying to identify any systematic issues with the reports which were used to extract the data that we requested. For most members selected, the critical data items were consistent with the data provided in 2008 (i.e. same scheme / gender / date of birth / pension type and a reasonable increase in current pension).

5.16   There were some fields which were not consistent for all members (e.g. increase in current pension was not as expected). For these members we compared data provided for all members of the force and found that data for very few members change in an unexpected way. We only raised one query with a police force, and the changes were the results of a system improvement. Otherwise we were content that no systematic issues were identified and given the small numbers of members involved we interpreted most of the changes to be the result of data cleaning or similar, so raised no further queries with police forces.

Checks for consistency of data between police forces

5.17   The populations of most of the police forces would not be expected to differ significantly from each other. As a broad reasonableness check, averages of the key data items (age, current pension, dependant pension) were compared between all of the police forces. Average data for most forces fell within a reasonably small range, and where it did not this could be explained.

Adjustments made to the pensioner member and dependant data

5.18   Pension increases for all pensioner members with entitlement and dependants: We requested that police forces provide member and dependant current pensions including all pension increases up to that which was effective on 9 April 2012. We also asked police forces to complete a questionnaire to confirm the dates to which pensions had been increased. Six police forces (12.9% of the total pension roll) stated that they had provided pensions which included increases up to 2011 only. For these forces we have applied the increase effective from 9 April 2012. This is an accurate adjustment except for the most recent pensions. Please note that we have not independently verified the police forces' questionnaire responses.

5.19   Pensioner members below age 55 not entitled to pension increases: We requested that police forces provide members' pensions currently in payment (i.e. excluding pension increases accrued to date). We also asked police forces to complete a questionnaire to confirm the increases applied to these pensions. 30 police forces stated that they had provided pensions which included accrued pension increases since retirement date, but out of these 6 failed to pass our validation checks and a further 2 police forces appeared to have included increases despite having stated that they were excluded. For the affected members of these 26 police forces (5.7% of the total pension roll) where the pension figures provided appeared to include pension increases since retirement date we have approximately stripped them out from the amounts provided. Our calculations will incorporate allowance for the accrued pension increases since the date of retirement that become payable from age 55.

5.20   Contingent dependants' pensions for current pensioner members: 18 police forces (29.6% of the total pension roll) either stated that they had estimated contingent dependants' pensions or stated that they had provided accurate contingent dependants' pensions which failed to pass our validation checks. We have estimated contingent dependants' pension for all pensioner members by estimating the proportion of service that would count for dependants' pensions (based on the assumption that members serve for 30 years on average between ages 20 and 50) and assuming that all members commuted 25% of their pension for lump sum. The pensions derived in this way are not exact (for example, not all members will have served 30 years at retirement and not all will have commuted 25%) but we believe that these estimates will give a more accurate measure of the contingent dependants' liability than the data provided.

5.21   Type of pensions: Where this data item was unknown (328 members in total) we have set the pension type to be normal health pensioner for all members. This is consistent with the age at retirement being above age 48 for the majority of these members. This assumption will not have a material effect on the valuation results.

5.22   Members where date of birth or current pension is missing or zero after the checks and adjustments noted above: Where either of these data items was missing we have replaced all of the members' data items with averages calculated from members in the same scheme, with the same pension type and gender. There were 70 pensioner members and 151 dependants for whom average details have been used to overwrite the incomplete data provided.

Data summary

5.23 The data provided by the police forces, following implementation of the adjustments made to improve the quality of the data and/or to estimate missing data is summarised below.

Table 9: Summary data for pensioner and dependant members

Type of pensioner	Gender	Number of members	Total pension[i] £m	Average age[ii]
Age retirement	Male	78,817	1,557.6	63.9
	Female	4,122	73.2	57.9
	Total	82,939	1,630.8	63.6
Ill-health retirement	Male	26,019	382.4	64.0
	Female	6,034	58.2	53.6
	Total	32,053	440.6	62.6
Dependants[iii]	Male	202	1.2	59.2
	Female	21,882	177.7	74.1
	Children	1,430	4.8	18.4
	Total	23,514	183.8	72.5
All	Male	105,708	1,943.5	63.8
	Female	32,798	311.7	66.0
	Total	138,506	2,255.2	64.1

i. including pension increases awarded to 9 April 2012

ii. weighted by current pension

iii. including pension credit members

5.24 For comparison, the table below summarises the totals of the original (unadjusted) data provided to us by forces.

Table 10: Summary data for pensioner and dependant members prior to adjustment

	Number of members	Total pension[i] £m	Average age[ii]
Total	138,506	2,252.4	64.1

i. including pension increases awarded to 9 April 2012

ii. weighted by current pension

Appendix A: Data items

Key data items are shown in bold. These are the items where a valid and reasonable data item is required to determine a liability.

A1. Actives

NI number
Scheme
Gender
Date of birth
Marital Status
Rank
Date Joined Scheme
Pensionable Salary (Annual rate of full-time equivalent pensionable pay at valuation date)
Average Pensionable Pay (Average full-time equivalent pensionable pay received in period from 1 April 2011 to 31 March 2012. Annualised equivalent for those not in service the full year)
Active service (Pensionable service to valuation date excluding doubling, transferred-in service and added years. This is used to determine accrued benefits by applying this service field plus transferred-in service to pensionable salary)
Active service on full-time basis (As Active service, but part-time service reckoned as full-time)
Transferred-in Service
Part-time (indicator)
Part-time proportion
Date of GMP
Pre 88 GMP
Post 88 GMP
Dependant Service
Career Break

Notes

Pensionable Salary: Where an individual is in receipt of a lower level of remuneration for any reason (eg maternity leave, sick leave etc) forces were asked to provide a notional "normal" pensionable salary.

Part time working: For future service calculations we assume part-time staff will continue to work the same proportion of full time hours as they are working at 31 March 2012 (part-time proportion data item).

A2. Deferreds

NI number
Scheme
Gender
Date of birth
Marital Status
Rank
Date Joined Scheme
Date Deferred
Average pensionable pay
Initial Deferred Pension
Initial Partner's Pension
Current deferred pension (Includes transferred-in service and added years)
Current Partner's Pension
Date payable (the date upon deferred benefits become payable)
Date of GMP
Pre-88 GMP
Post-88 GMP
Part-time

A3. Pensioners

NI number
Scheme
Gender
Date of birth
Marital Status
Rank
Date Joined Scheme
Date Pension Began
Type of Pension
Average Pensionable Pay
Member's Initial Pension
Member's Current Pension (Basic pension at valuation date)
Initial Partner's Pension
Current Partner's Pension
Date of GMP
Pre-88 GMP
Post-88 GMP
Part-time
Commuted Lump Sum
Abated Pension
Pension Increases
Injury Award

A4. Dependants

NI Number
Scheme
Gender
Date of birth
Dependant Type
Dependant Date
Dependant's Pension
Dependant's Pre-88 GMP
Dependant's Post-88 GMP
Dependant's Current Injury Award

A5. Added years

NI Number
Scheme
Gender
Date of birth
Marital status
Rank
Date Joined Scheme
Purchase type
Purchase start date
Cessation date
Contract in force
Added years (Number of added 60ths (PPS) or added years (NPPS) purchased if contributions have finished or total being purchased if contributions are still being made.)
Part-time

A6. Pension Debits

NI Number
Scheme
Gender
Date of birth
Rank
Order Date
Initial Pension Debit
Current Pension Debit
Initial Partner's Debit
Current Partner's Debit

Notes

Pension increases: For all categories, current pension figures should be shown after the pension increase due in the April immediately after the valuation date has been applied.

Pension credit members: Included as deferred members if the credit is not yet in payment and as pensioner members where the credit is in payment.

Appendix B: Protection and member categories

B1. Protected and tapered Members

Statutory based transitional protections exist for certain members as follows:

1. All active NPPS members who, as of 1 April 2012, have 10 years or less to their current Normal Pension Age (i.e. age 55) will see no change in when they can retire, nor any decrease in the amount of pension they receive at their current Normal Pension Age. This protection will be achieved by the member remaining in their current scheme until they retire.

2. All active PPS members who, as of 1 April 2012, have 10 years or less to age 55 or have 10 years or less to age 48 and are 10 years or less from a maximum unreduced pension, will see no change in when they can retire, nor any decrease in the amount of pension they receive at their current Normal Pension Age. This protection will be achieved by the member remaining in their current scheme until they retire.

3. There will be a further period of tapered protection for up to 4 years for scheme members. Members who are within 4 years of qualifying for transitional protection, as of 1 April 2012, will have limited protection so that on average for every month closer to qualifying for transitional protection they gain about 53 days of protection. The period of protected service for any member under these tapering arrangements will have finished by 31 March 2022. At the end of the protected period, they will be transferred into the 2015 scheme. These members fall into four categories:

    (a) PPS or NPPS members who on 1 April 2012 are aged 41 – 45 years with less than 20 years service;

    (b) PPS members who on 1 April 2012 are aged 34 – 38 years with more than 20 years service;

    (c) PPS members who on 1 April 2012 are aged over 38 years with 16 – 20 years service; and

    (d) PPS members who on 1 April 2012 are aged 34 – 38 years with 16 – 20 years service whose age plus service is at least 54 years.

    Where a member falls into both categories (a) and (c), the greater number of days of protection will be given.

For further details, see

https://www.gov.uk/government/publications/police-pension-reform-design-framework

Appendix C: Summary of benefits

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
1.	**Type of Scheme**	Final Salary	Final Salary	Career Average Revalued Earnings
2.	**Contracted out/in prior to 2016**	Contracted out	Contracted out	Contracted out
3.	**Employees Covered**			
	Before 1 April 2015	Members who joined before 6 April 2006.	New entrants joining between 6 April 2006 and 31 March 2015	N/A
	On or after 1 April 2015	Protected PPS members[4]	Protected NPPS members[4]	New entrants joining on or after 1 April 2015 and unprotected members[4]
4.	**Normal Pension Age (NPA)**	After 30 years' service at any age, or after 25 years' service at age 50 and above, or otherwise at age 55 (some senior officers have higher retirement ages)	55	60

Flexible retirement from age 55 subject to benefits being actuarially reduced |
| | | NB: Deferred pension age 60 | NB: Deferred pension age 65 | NB: Deferred pension age equal to State Pension Age |

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[4] Details of criteria for protection are set out in Appendix B.

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
5.	**Pensionable Pay (PP)**	Basic Salary plus competency related threshold payment and London weighting (but not including any other allowances)	Basic Salary plus competency related threshold payment and London weighting (but not including any other allowances)	Basic Salary plus competency related threshold payment and London weighting (but not including any other allowances)
6.	**Final Pensionable Pay (FPP)**	Highest of 1 year average of PP in last 3 years	Highest of: > 1 year average of PP in last 3 years > 3 year average of PP in last 10 years	Not required
7.	**Member's Contributions**	Contribution scale tiered by PP	Contribution scale tiered by PP	Contribution scale tiered by PP

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
8.	**Normal Retirement**			
	Pension to Member	1/60th for first 20 years of actual service plus 2/60 per year of service in excess of 20 years, subject to a maximum of 30 years of actual service.	1/70th per year of actual service subject to a maximum of 35 years.	1/55.3th of earnings in each year, revalued in line with the Consumer Prices Index (CPI) + 1.25% No cap on service
	Lump Sum	By commutation at actuarially neutral rates Generally option to commute up to 25% of pension	4/70th per year of actual service subject to a maximum of 35 years Option to exchange lump sum for additional pension	By commutation at £12:£1. In accordance with HMRC limits and regulations
	Spouse's Pension	50% of member's pre-commutation pension The pension paid to female officer's surviving spouses may be reduced in respect of periods of service before 1990 and for male officers in respect of service before 1972	50% of member's pension (excluding amounts awarded in place of lump sum)	50% of member's post-commutation pension
9.	**Pension Increases**	Governed by Pensions (Increase) Act	Governed by Pensions (Increase) Act	Governed by Pensions (Increase) Act

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
10.	Ill Health Retirement	Single tier – unable to perform ordinary duties	Two tier	Two tier[5]
		No reduction for early payment	Lower tier – unable to perform ordinary duties	Lower tier – unable to perform normal duties
		Service enhanced:		
		< 5 years – no uplift	No reduction for early payment	No reduction
		5-10 years – pensionable service doubled	No enhancement to service	No enhancement to service
		10-13 years – pensionable service increased to 20 years	Higher tier – unable to engage in any regular employment	
		> 13 years – pensionable service increased by 7 years (at 1/60th accrual)	No reduction for early payment	Higher tier – unable to engage in any regular employment
			Service enhanced: < 5 years – pensionable service plus the lower of:	No reduction
			> total accrued pension multiplied by 3 > half of prospective service from date of retirement to earliest of NRA or 35 years' service	Lower tier benefit plus half of prospective service to 60 multiplied by 1/55.3 of the members' annual full-time equivalent rate of PP
			> 5 years – pensionable service increased by half prospective service from date of retirement to NPA or 35 years' service, whichever is the earlier	

[5] In addition to the 2015 scheme benefits, former members of the PPS will receive ill health benefits under the 1987 scheme (based on service to 31 March 2015). Former members of the NPPS will also receive a lower tier ill health pension under the 2006 scheme.

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
11.	Dependant's Pension on Death in Service	50% x Ill-health Pension Maximum 33% x FPP Pension paid to female officer's surviving spouses may be reduced in respect of periods of service before 1990 and for male officers in respect of service before 1972	50% of Higher tier Ill-health Pension Maximum 25% x FPP	50% of Higher tier Ill-health Pension[6] Maximum 25% x FPP
12.	Dependant's Short Term Pension			
	Death in Service	13 weeks' full pay	None in excess of the long-term level of pension	None in excess of the long-term level of pension
	Death after Retirement	13 weeks' at member's rate	None in excess of the long-term level of pension	None in excess of the long-term level of pension

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[6] In addition to the 2015 scheme benefits, surviving eligible dependants of former members of the PPS will receive a pension based on ill health benefits under the 1987 scheme (based on service to 31 March 2015). Surviving eligible dependants of former members of the NPPS will also receive a pension based on the lower tier ill health pension under the 2006 scheme.

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
13.	**Lump Sum Death Benefits**			
	Death in Service	2 x PP	3 x PP	3 x PP
		In addition, there is an employee contributions underpin	In addition, there is an employee contributions underpin	In addition, there is an employee contributions underpin
	Death after Retirement	There is an employee contributions underpin	There is an employee contributions underpin	There is an employee contributions underpin
14.	**Children's Pensions**	Child must be under 16 years of age or under 23 and in full-time education or full-time training	Child must be under 19 years of age or under 23 and in full-time education	Child must be under 19 years of age or under 23 and in full-time education
		18.75% x member's current/deferred pension or ill-health pension, in the case of death in service, for up to 2 children*	25% x member's current/deferred pension or higher tier ill-health pension, in the case of death in service, for up to 2 children*	25% x member's current/deferred pension or higher tier ill-health pension, in the case of death in service, for up to 2 children*
		*If there are more than 2 children then 37.5% will be shared equally	* If there are more than 2 children then 50% will be shared equally	* If there are more than 2 children then 50% will be shared equally
15.	**'Dependant' provision**	Widow(er)	Widow(er)	Widow(er)
		Civil partners	Civil partners	Civil partners
		Children – including stepchildren/adopted children/other children dependant at time of death	Unmarried partners (subject to certain conditions)	Unmarried partners (subject to certain conditions)
			Children – including stepchildren/adopted children/other children dependant at time of death	Children – including stepchildren/adopted children/other children dependant at time of death

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
16.	**Withdrawal Benefits on Leaving**			
	At least 2 Years' Total Reckonable Service	Deferred pension is payable from 60	Deferred pension is payable from age 65	Deferred pension is payable from State Pension Age
	Preserved Benefits	Generally proportionate to the pension based on service to age 55 – accrual between 1/60 and 1/45 If >25 years' service, accrued pension from age 50	1/70 + 4/70 lump sum	1/55.3 of earnings in each year, revalued in line with CPI + 1.25% in service
	Increases before retirement	Governed by Pensions (Increase) Act	Governed by Pensions (Increase) Act	Governed by Pensions (Increase) Act
	Death before retirement	50% of member's deferred pension	50% of member's deferred pension	50% of member's deferred pension
	Transfer Value	Yes	Yes	Yes
	Less than 2 Years' Total Reckonable Service	If the member has at least three months' service they may opt for a cash equivalent transfer value to be paid into another pension scheme. Otherwise, an immediate refund of their contributions (less the cost of reinstatement into S2P) is paid.	If the member has at least three months' service they may opt for a cash equivalent transfer value to be paid into another pension scheme. Otherwise, an immediate refund of their contributions (less the cost of reinstatement into S2P) is paid.	If the member has at least three months' service they may opt for a cash equivalent transfer value to be paid into another pension scheme. Otherwise, an immediate refund of their contributions (less the cost of reinstatement into S2P) is paid.

		PPS (1987 Scheme)	NPPS (2006 Scheme)	2015 Scheme
17.	**Cessation on remarriage or cohabitation**	Yes	No	No

Appendix D: Record of changes since 1 July 2013 draft

D.1   This advice was issued in draft on 1 July 2013. The table below records the changes
       made since that draft.

Reference	Change
Paragraph 2.5	Changed to reflect updated position on late data submissions.
Section 3	Figures and wording amended to reflect introduction of Northumbrian membership data.
Paragraph 3.25	Explains additional amendment to the data.
Paragraph 3.31	Explains additional amendment to the data.
Paragraph 4.25	Explains additional amendment to the data.
Paragraph 5.12	Amended commentary on Kent pensioner data to set out Home Office decision.
Appendix C	Added summary of benefits.
Title	Changed to be in line with other valuation reports.
Various	Minor drafting changes to correct spelling, grammatical and other errors or to clarify previous wording. Format amended to be in line with updated GAD standards.