

EQUAL PAY AUDIT 2011

MOD Core Civilian Industrial Personnel



MINISTRY OF DEFENCE

As at 1 October 2011

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EXECUTIVE SUMMARY: Key Findings

1. Male and female average salaries and average length of service in grade are very similar in Skill Zones 1 and 2; with only Skill Zone 3 showing a small gender disparity in both average salary (2.9% higher for males than females) and length of service in grade (just under a year longer for males than females). There were insufficient numbers of females in Skill Zone 4 to make gender comparisons (see *Table EPA-1*).
2. When taking into account the small difference in length of service in grade at Skill Zone 3, the previously seen difference in average basic salary completely disappears – the difference in the adjusted average salaries being 0.0% (see *Table EPA-1a*). Therefore this difference is fully explained by differences in length of service in grade.
3. Promotion rates are very low overall; with no notable differences in the relative promotion rates of males and females or differences in length of time to promotion (see *Tables EPA-2 and EPA-3*).
4. When looking at part time personnel only, gender differences in average basic salary were below 1% even before taking into account differences in length of service in grade (see *Table EPA-4*). Once these differences were accounted for, all differences in average basic salary of males and females disappeared completely (see *Table EPA-4a*). No comparisons can be made at Skill Zones 3 and 4 due to insufficient numbers of part time personnel.

Methods:

5. The analyses conducted within this report require exclusions. The population pertaining to these analyses consists of MOD main industrial personnel with a current HRMS record, who are identified as being paid on the CHIPS pay extract as at 1 October 2011. The following exclusions were applied throughout:
 - Trading Funds personnel
 - Royal Fleet Auxiliary personnel
 - Locally engaged civilians
 - Non-Industrial Grades
 - Analogues (MDP, Fire Service, NHS linked Agenda for Change staff, Teachers, Civilian Medical Practitioners and Civilian Dental Practitioners).
 - Staff on Zero pay – i.e. not being paid by the MOD as at 1 October 2011.
 - Personnel for whom no basic salary data is recorded on the CHIPS pay extract as at 1 October 2011.
 - Personnel for whom required data are missing for other explanatory factors required within these analyses.

6. Use of ANCOVA methodology to obtain adjusted average salary figures in sections A and D:

Analysis of Covariance is a standard and robust statistical methodology used to observe differences in means between groups after accounting for and removing the effects of other variables (covariates). After the removal of the effects of covariates, adjusted means for each group being compared are obtained. These adjusted means allow observation of any differences between groups in the variable of interest on an equal and more comparable basis. The adjusted average salary figures presented in sections A and D in this analysis were derived from this approach to enable average basic salary to be compared between males and females in each grade without being confounded by the effects of the differing length of service in grade of males and females in each group. The resulting adjusted average salaries represent what the average salary for each gender within a specific grade would be if the average lengths of service in grade for each gender were equal for both genders. This enables a level comparison of the average salary of each gender without confound with different lengths of service.

7. Sections B and C concern the number of personnel who were promoted in the year from 1 October 2010 to 1 October 2011. Included in these analyses were those who were substantively promoted within this period (including a small number of personnel who were both recruited and promoted within the time period). Temporary promotions were not included, except where individuals had been on temporary promotion and were made substantive within the period. DBS provided DASA with a dataset of all those individuals receiving a promotion in the relevant period, the date of that promotion, the grade they were promoted from and the new grade they have been promoted into, the length of service in grade prior to promotion and basic salary upon promotion. DASA additionally validated this dataset by tracking substantive grade changes between monthly strength extracts. Length of service in grade (which automatically resets to 0 on promotion) was recorded as at the period prior to promotion in order to ascertain the length of time in the previous grade prior to being promoted. The LOS in grade field was reset to 0 for the majority of MOD staff in 2004 when the new HRMS data system was introduced. Despite this limitation there is no evidence that this would introduce any gender bias. Although caution should be used when viewing the actual values of length of service in grade, where they are used for statistical analysis they are still valid for making statistical adjustments.

8. The pay analysis of those personnel promoted is taken from the perspective of the grade promoted into, and concerns gender pay equality at the promoted grade. The analysis looks at the average basic salary at the time of promotion. As the analysis shows the grades moved into there is no data for Skill Zone 1 personnel. Personnel who move from an industrial grade (Skill Zone 1-4) into a non industrial grade are not regarded by the department as promotions but as sideways transfers.
9. Section B includes statistical tests on the relative differences between genders in promotion rates within each Skill Zone.
10. Section D concerns equality of pay of part-time personnel. In addition to all the exclusions listed initially, full-time personnel were also excluded. Average basic salary is presented as annualised in order to be comparable where individuals work widely varying numbers of hours, and is derived from the basic monthly salary as at 1 October 2011 which they would receive if they worked full-time, multiplied by 12 to obtain the current annual basic salary level assuming 1 FTE.

SECTION A: Average Annual basic salary by Grade

11. Table EPA-1 shows, for each Skill Zone, the FTE strength, average (arithmetic mean) length of service in grade and average (arithmetic mean) annualised basic salary split by Gender. In addition, the gender difference in length of service in grade is presented in years, and the percentage gender difference in average basic salary is given.
12. No gender comparisons can be made for Skill Zone 4 due to insufficient females at this grade. Although in Skill Zone 3 there is a difference in average basic salary between males and females, this gender pay difference is below 3% threshold, even without accounting for the previously observed differences in length of service in grade. The average Basic salaries of both Skill Zones 2 and 1 are virtually the same for males and females.
13. In order to take the differences in length of service in grade into account when making gender comparisons in pay, Table EPA-1a presents adjusted average basic salary figures by gender, and the percentage gender difference in average basic salary. These adjusted averages were derived using ANCOVA analysis to remove the effect which an individual's length of service in grade has on their basic salary. Length of service in grade was used as a covariate, partialling out its effects and thus generating adjusted means for basic salary for males and females enabling comparison on a level footing with no remaining influence of length of service in grade, the result being a more representative comparison between males and females.
14. The findings of this analysis show that after accounting for gender differences in length of service in grade, the previously observed gender difference for Skill Zone 3 in average basic salary disappears completely. At all grades, after taking length of service in grade into account, differences in average basic salary are negligible to zero - the largest difference being 0.2%.

SECTION B: Number of Promotions/Advancements

15. Table EPA-2 shows the number of males and females in each Skill Zone who were substantively promoted in the year from 1 October 2010 to 1 October 2011 (temporary promotions were not included here, except where temporary promotions were made substantive within the period, and in these cases the point of promotion was taken at the point where the promotion was made substantive). The grade referenced in this table is the grade which personnel were promoted into – i.e. where a Skill Zone 3 was promoted to Skill Zone 4 they are listed here under their new grade of Skill Zone 4. No sideways transfers from industrial to non-industrial grades or vice versa are included here, and no new recruits from external to MOD are included, therefore Skill Zone 1 is not presented in the table as it is not possible to be promoted into this grade.
16. Overall 110 Skill Zone personnel were promoted in the year 1 October 2010 to 1 October 2011, and two-thirds of these were male. Overall, 82% of Skill Zone personnel as at 1 October 2011 were male.
17. Gender promotion rates are derived by taking the number of promotions into each grade in consideration with the actual strength by gender of the grade below at the start of the period (the source population promoted from). Insufficient promotions occurred into Skill Zones 2 and 4 to be able to make gender comparisons of promotion rates, with only around 10 promotions occurring into each Skill Zone in the period.
18. There were just sufficient males and females promoted into Skill Zone 3 to make comparisons of promotion rates, although the number of females was still very low and so caution should be used when viewing any differences. The promotion rate of males into Skill Zone 3 was 2.6%, while for females it was slightly lower at 2.0%. This difference was however not significant, and should be considered due to chance variation alone.

SECTION C: Length of time for Promotion

19. Table EPA-3 considers the average (arithmetic mean) length of service in grade prior to promotion (i.e. in the previous grade) in order to observe the length of time it took for those who were promoted within the period 1 October 2010 to 1 October 2011 to be promoted. It must be noted that these figures do not represent the average length of time spent within a grade that it takes to achieve promotion, as there are inevitably other individuals remaining in the previous grade who will achieve promotion in the future. These figures are simply representative of the average length of time spent in the previous grade prior to promotion by those who were promoted within the stated period.
20. As previously stated, there were insufficient females to make any comparisons for Skill Zones 2 and 4, however for Skill Zone 3 the average length of service in grade prior to promotion for males is 1.2 years while for females it is 1.6 years. With this being only a small difference, caution should be applied in interpretation as only 10 females were promoted to Skill Zone 3 in the period.

SECTION D: Pay levels of Part-Time Personnel

21. Table EPA-4 looks at the gender differences in average (arithmetic mean) basic salary of part-time industrial civilian personnel in each grade, considering the average FTE and average length of service in grade of males and females in each Skill Zone. Average basic salary is derived from the annualised basic salary individuals would receive if they were employed on a full-time basis as at 1 October 2011. These figures therefore do not take into account differences relating to the number of hours actually worked by different individuals. The gender difference in length of service in grade is presented in years, and the gender difference in average basic salary is given as a percentage.
22. There were virtually no part time personnel at Skill Zone 4, and virtually no part time females at Skill Zone 3, so no comparisons can be made in these grades.
23. For Skill Zones 1 & 2 there are more females that are part-time than males. The salaries are broadly similar, and the differences in length of service in grade are also very small. When taking into account the small differences in length of service in grade, as shown in table EPA 4a, the differences between males and females in average annualised basic salary disappeared completely.

Conclusions:

24. For industrial personnel, the analyses show that the only differences between males and females are at Skill Zone 3, where males have a slightly longer length of service in grade than females. This difference completely explains the 2.9% difference in basic salary, as after taking into account length of service in grade, there is no remaining difference in the adjusted average salaries of males and females at this grade. It is interesting that despite the shorter length of service in grade at Skill Zone 3, females have a slightly longer length of time to promotion prior to being promoted into this grade than males, although this should be viewed with caution given the low numbers involved. Although in some cases numbers were too small to conduct any analysis, no other substantial differences between males and females were found in the analyses conducted.

Recommendations and Action Plan:

1. As no gender related issues in average basic salary or promotion were uncovered in this report, no recommendations are required beyond continuing annual monitoring.
2. The action plan is to continue with annual monitoring average basic salary, promotion rates, length of time to promotion and average salary for part time personnel.

Average Annual Basic Pay by Grade

Table EPA-1 - Average Salary by Gender and Grade^{1,2}

Skill Zone 4	Gender	Headcount	Average FTE	Average LOS in Grade	Diff in LOS in Grade (Yrs)	Average Basic Salary	Av Basic Salary Diff %
	Male	370	0.99	4.1		£23,318	
Female	-	-	-	-	-	-	-
Total	370	-	-	-	-	-	-

Skill Zone 3	Gender	Headcount	Average FTE	Average LOS in Grade	Diff in LOS in Grade (Yrs)	Average Basic Salary	Av Basic Salary Diff %
	Male	2490	1.00	5.6		£19,319	
Female	100	0.99	4.9		£18,749		
Total	2590	1.00	5.6	0.8	£19,297	2.9%	

Skill Zone 2	Gender	Headcount	Average FTE	Average LOS in Grade	Diff in LOS in Grade (Yrs)	Average Basic Salary	Av Basic Salary Diff %
	Male	2610	0.99	5.6		£16,917	
Female	640	0.95	5.2		£16,922		
Total	3250	0.98	5.5	0.3	£16,918	0.0%	

Skill Zone 1	Gender	Headcount	Average FTE	Average LOS in Grade	Diff in LOS in Grade (Yrs)	Average Basic Salary	Av Basic Salary Diff %
	Male	1160	0.98	6.1		£15,211	
Female	700	0.91	6.6		£15,132		
Total	1860	0.95	6.2	0.5	£15,181	0.5%	

Source: DASA(Quad-Service)

Table EPA-1a ADJUSTED - Average Total Remuneration by Gender and Grade adjusted for LOS in Grade²

Skill Zone 4	Gender	Average FTE	Adjusted Average Total Remuneration accounting for LOS in Grade	Adj Av Total Remuneration Diff %
			Grade	
	Male	0.99	£23,317	
	Female	-	-	
	Total	-	-	-

Skill Zone 3	Gender	Average FTE	Adjusted Average Total Remuneration accounting for LOS in Grade	Adj Av Total Remuneration Diff %
			Grade	
	Male	1.00	£19,300	
	Female	0.99	£19,306	
	Total	1.00	£19,300	0.0%

Skill Zone 2	Gender	Average FTE	Adjusted Average Total Remuneration accounting for LOS in Grade	Adj Av Total Remuneration Diff %
			Grade	
	Male	0.99	£16,927	
	Female	0.95	£16,887	
	Total	0.98	£16,919	0.2%

Skill Zone 1	Gender	Average FTE	Adjusted Average Total Remuneration accounting for LOS in Grade	Adj Av Total Remuneration Diff %
			Grade	
	Male	0.98	£15,182	
	Female	0.91	£15,181	
	Total	0.95	£15,181	0.0%

Source: DASA(Quad-Service)

Notes accompanying tables EPA-1 and EPA-1a

Personnel FTE numbers are rounded to the nearest 10. Numbers ending in "5" have been rounded to the nearest multiple of 20 to prevent systematic bias.

Average Length of Service in Grade is presented in years to one decimal place. Gender differences in average Length of Service in grade are calculated from the difference between the exact averages and are also presented in years to one decimal place.

Average basic salary figures for each individual are derived from the basic monthly salary rate they were on as at 1 October 2011, annualised to assume a whole year at the same salary rate. These salary rates are not adjusted to take account of the actual number of hours worked by part time staff in order to assure comparability independent of full-time/part-time status, and so for each individual represent what they would earn in a full year at the same salary rate with an FTE of 1.

Average basic salary differential percentages represent the ratio of the difference between the gender averages to the higher of the gender averages.

Because of rounding, totals may not always equal the sum of the parts.

- denotes number withheld. Headcount and FTE strength of personnel figures below 5 are withheld, averages are withheld when based on less than 10 individuals, and comparisons of averages are withheld when either of the averages are based on less than 30 individuals as such comparisons are invalid.

1. Figures exclude staff on zero pay, those whose pay falls outside the payscales and those where no valid grade or pay data are recorded as at 1 October 2010.

2. Figures exclude Trading Funds, Royal Fleet Auxiliaries and locally engaged civilians.

Number of Promotions/Advancements

Table EPA-2 - Number of Promotions/Advancements¹ during the year 1 Oct 10 to 1 Oct 11

Skill Zone 4	Gender	Number of Promotions into grade	Promotion rate into grade	Promotion rate % point difference	Significance test of promotion rate by gender
	Male	-	-	-	-
Female	-	-	-	-	
Total		10	0.3%	-	Not Significant

Skill Zone 3	Gender	Number of Promotions into grade	Promotion rate into grade	Promotion rate % point difference	Significance test of promotion rate by gender
	Male	70	2.6%		
Female	10	2.0%			
Total		90	2.5%	0.6%	Not Significant

Skill Zone 2	Gender	Number of Promotions into grade	Promotion rate into grade	Promotion rate % point difference	Significance test of promotion rate by gender
	Male	-	-	-	-
Female	-	-	-	-	
Total		10	0.4%	-	Not Significant

Source: DASA(Quad-Service)

Numbers are rounded to the nearest 10. Numbers ending in "5" have been rounded to the nearest multiple of 20 to prevent systematic bias.

Because of rounding, totals may not always equal the sum of the parts.

- denotes number withheld. Headcount and FTE strength of personnel figures below 5 are withheld due to their potentially disclosive nature, averages are withheld when based on less than 10 individuals due to the highly volatile nature of percentages based on small numbers, and comparisons of averages are withheld when either of the averages are based on less than 30 individuals as such comparisons are unreliable.

1. Promotion figures are based on headcount and are rounded to the nearest 5.

Figures exclude staff on zero pay, those whose pay falls outside the paycales, and those where no valid grade or pay data are recorded as at 1 October 2011.

Figures exclude Trading Funds, Royal Fleet Auxiliaries and locally engaged civilians.

Length of time for Promotion

Table EPA-3 - Average basic salary upon Promotion/Advancement¹ by Gender and Grade², and length of time until Promotion/Advancement³ for those Promoted/Advanced during the year 1 Oct 10 to 1 Oct 11

Skill Zone 4	Gender	Number of Promotions	Average	Av Basic	Number with	% with	Average	Av LOS to
			Basic Salary on Promotion	Salary Diff %	starting pay above min	starting pay above min	LOS to promotion (yrs)	promotion Diff (yrs)
	Male	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-
	Total	10	£22,150	-	-	-	1.7	-

Skill Zone 3	Gender	Number of Promotions	Average	Av Basic	Number with	% with	Average	Av LOS to
			Basic Salary on Promotion	Salary Diff %	starting pay above min	starting pay above min	LOS to promotion (yrs)	promotion Diff (yrs)
	Male	70	£19,107	-	-	-	1.2	-
	Female	10	£19,107	-	-	-	1.6	-
	Total	90	£19,107	-	-	-	1.3	0.3

Skill Zone 2	Gender	Number of Promotions	Average	Av Basic	Number with	% with	Average	Av LOS to
			Basic Salary on Promotion	Salary Diff %	starting pay above min	starting pay above min	LOS to promotion (yrs)	promotion Diff (yrs)
	Male	-	£16,002	-	-	-	-	-
	Female	-	£16,002	-	-	-	-	-
	Total	10	£16,002	-	-	-	4.5	-

Source: DASA(Quad-Service)

Numbers are rounded to the nearest 10. Numbers ending in "5" have been rounded to the nearest multiple of 20 to prevent systematic bias.

Because of rounding, totals may not always equal the sum of the parts.

- denotes number withheld. Headcount and FTE strength of personnel figures below 5 are withheld due to their potentially disclosive nature, averages are withheld when based on less than 10 individuals due to the highly volatile nature of percentages based on small numbers, and comparisons of averages are withheld when either of the averages are based on less than 30 individuals as such comparisons are unreliable.

- Promotion figures are based on headcount and are rounded to the nearest 5.
- Figures exclude staff on zero pay, those whose pay falls outside the payscales, and those where no valid grade or pay data are recorded as at 1 October 2011.
- Average Length of Service to promotion figures represent the time spent in the previous grade prior to promotion, and are measured in years, to two decimal places.

Pay levels of Part-Time Personnel

Table EPA-4 - Pay levels of part-time personnel

Skill Zone 4	Gender	Headcount		Average	Diff in LOS in Grade (years)	Average Annualised Basic Salary	Av Basic Salary Diff %
		of p/t staff	Average FTE	LOS in Grade (years)			
	Male	-	-	-	-	-	-
	Female	-	-	-	-	-	-
	Total	-	-	-	-	-	-

Skill Zone 3	Gender	Headcount		Average	Diff in LOS in Grade (years)	Average Annualised Basic Salary	Av Basic Salary Diff %
		of p/t staff	Average FTE	LOS in Grade (years)			
	Male	30	0.62	5.6	-	£19,762	-
	Female	-	-	-	-	-	-
	Total	30	-	-	-	-	-

Skill Zone 2	Gender	Headcount		Average	Diff in LOS in Grade (years)	Average Annualised Basic Salary	Av Basic Salary Diff %
		of p/t staff	Average FTE	LOS in Grade (years)			
	Male	70	0.62	5.6	-	£16,763	-
	Female	90	0.68	5.2	-	£16,864	-
	Total	160	0.66	5.5	0.3	£16,822	0.6%

Skill Zone 1	Gender	Headcount		Average	Diff in LOS in Grade (years)	Average Annualised Basic Salary	Av Basic Salary Diff %
		of p/t staff	Average FTE	LOS in Grade (years)			
	Male	60	0.58	6.1	-	£15,213	-
	Female	170	0.61	6.6	-	£15,114	-
	Total	230	0.60	6.2	0.5	£15,140	0.7%

Source: DASA(Quad-Service)

EPA-4a Adjusted Average Basic Salary of Part-Time personnel adjusted for LOS in Grade

Skill Zone 4	Gender	Headcount of p/t staff	Average FTE	Adjusted Average Basic Salary accounting for LOS in Grade	Adj Av Basic Salary Diff %
	Male	-	-	-	
	Female	-	-	-	
	Total	-	-	-	-

Skill Zone 3	Gender	Headcount of p/t staff	Average FTE	Adjusted Average Basic Salary accounting for LOS in Grade	Adj Av Basic Salary Diff %
	Male	30	0.62	£19,826	
	Female	-	-	-	
	Total	30	-	-	-

Skill Zone 2	Gender	Headcount of p/t staff	Average FTE	Adjusted Average Basic Salary accounting for LOS in Grade	Adj Av Basic Salary Diff %
	Male	70	0.62	£16,830	
	Female	90	0.68	£16,830	
	Total	160	0.66	£16,830	0.0%

Skill Zone 1	Gender	Headcount of p/t staff	Average FTE	Adjusted Average Basic Salary accounting for LOS in Grade	Adj Av Basic Salary Diff %
	Male	60	0.58	£15,140	
	Female	170	0.61	£15,140	
	Total	230	0.60	£15,140	0.0%

Source: DASA(Quad-Service)

Notes accompanying tables EPA-4 and EPA-4a

This table includes only those staff classed as working on a part-time basis, defined by their working hours averaged across the year being less than 36 hours per week for those on the London pay scale, and less than 37 hours per week for those on the National pay scale.

Average annualised basic salary figures represent the pro-rata basic salary personnel would receive if they worked for full-time hours.

Length of service in grade figures are in years and are rounded to one decimal place.

Average basic salary differential percentages represent the ratio of the difference between the gender averages to the higher of the gender averages.

Payrise differential percentages represent the ratio of the gender payrise difference to the overall average basic salary (of both genders together).

Numbers are rounded to the nearest 10. Numbers ending in "5" have been rounded to the nearest multiple of 20 to prevent systematic bias.

Because of rounding, totals may not always equal the sum of the parts.

- denotes number withheld. Headcount and FTE strength of personnel figures below 5 are withheld due to their potentially disclosive nature, averages are withheld when based on less than 10 individuals due to the highly volatile nature of percentages based on small numbers, and comparisons of averages are withheld when either of the averages are based on less than 30 individuals as such comparisons are unreliable.

1. Figures exclude Trading Funds, Royal Fleet Auxiliaries and locally engaged civilians.

2. Figures exclude staff on zero pay, those whose pay falls outside the payscales, and those where no valid grade or pay data are recorded as at 1 October 2011.