

Background Quality Report for the Tri-Service Families Continuous Attitude Survey (FamCAS)

July 2022

1 Contact

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2 Introduction

The FamCAS is a set of Tri-Service questions within the single Service Families Surveys. FamCAS is one of the main ways the Department gathers information on the views and experiences of the spouses/civil partners of Regular trained Service personnel. FamCAS asks about views and experiences on several areas including childcare, deployment, education, employment, healthcare, family life, housing, and the Armed Forces Covenant. The target population for FamCAS is the spouses/civil partners of trained UK Regular Service personnel, including Gurkhas. For the 2022 survey, the fieldwork was conducted between January 2022 and May 2022.

For many years prior to the introduction of Tri-Service FamCAS questions in 2010, the single Services conducted individual Families Surveys. These surveys informed single Service personnel policy development. However, the individual nature of each made it difficult to obtain a picture of Tri-Service wide family issues and compare data across the Services.

The Armed Forces Act 2011 created a statutory requirement for an annual Armed Forces Covenant Report to Parliament each year. The report is required to set out how the Government is supporting the Armed Forces, their families, and veterans in key areas such as healthcare, housing, and education. The FamCAS questions help address these areas, providing us with the views and opinions of the families of Serving personnel. They provide statistics to strengthen the evidence-based decision making within the Ministry of Defence (MOD).

Although the single Service researchers run and administer the single Service Families surveys a set of harmonised FamCAS questions are included. The Analysis Directorate Surveys Team is tasked by the Deputy Chief of Defence staff (now known as Chief of Defence People or CDP) with collation of responses from each of these surveys, validating and analysing the data, and publishing the tri-Service FamCAS report.

3 Statistical Processing

There are eight stages in the FamCAS process. Each of these stages is briefly described below.

Stage 1: Questionnaire design

A working group comprised of staff from MOD Head Office and each of the single Services meet with Defence Statistics staff to agree the questionnaire. There are three separate questionnaires, one for each Service. Most questions are common to all Services; however, each Service has several questions applicable only to their Service.

Stage 2: Sample design, selection and cleaning

A disproportionate stratified random sample of approximately 23,000 trained UK Regular Service personnel was selected for FamCAS in 2022. The Surveys team designs and selects the sample.

The sample is stratified by:

- Service (Royal Navy, Royal Marines, Army and RAF)
- The Serving persons' Rank group (Officers, Senior Ranks [OR6-9] and Junior Ranks [OR1-4])
- The spouses/civil partner's location (England, Northern Ireland, Scotland, Wales, Cyprus*, Germany** and other non-UK).

**Army and RAF only **Army only.*

Many of these strata are small subsets, as such a census is selected from most. The only strata we selected a sample from were RN England (Officer and Senior Ranks), Army England (Officer, Senior and Junior Ranks), RAF England (Officer, Senior and Junior Ranks).

The personal status field on JPA (Joint Personnel Administration – the Armed Forces administration database) was used as a proxy for marital status. The personal status field is a self-reported field used for allowance purposes. Those Service personnel identified as married or in a civil partnership were included in the target population from which the sample was selected.

Stage 3: Survey distribution and communications

As the delivery of the questionnaires is the responsibility of the single Services, distribution methods differ slightly. Navy Command has run an online survey for several years, but Army and RAF introduced this option for the first time in 2016. In 2020 Navy Command moved to an online only Families survey. Each of the single Service Families surveys is anonymous.

Both paper questionnaires (for the Army and RAF only) and e-mail invites to an online questionnaire were sent to Serving personnel who were asked to pass these on to their spouse/civil partner for completion. The MOD does not have the consent to contact spouses/civil partners directly for research. Details about how to complete the online questionnaire were also included in the paper questionnaire. CDP and single Service Psychologists also publicise the survey and support on communications through Chains of Command.

Stage 4: Data input

Data input is the responsibility of the single Services and so methods differ slightly. All three Services ran their own online surveys but only Army and RAF used external contractors to input paper survey responses. Army and RAF therefore provide separate paper and online data to Defence Statistics. Online survey responses are held securely on MOD servers.

Stage 5: Data validation

The Surveys Team receives separate single Service Excel datasets from the external contractors for Army and RAF. Online datasets are available to download once the survey has closed. Each dataset is validated separately prior to combining the online and paper response data. Validation procedures at this stage include checking for expected response options and missing question items. The datasets are then combined to create a single dataset. Any invalid responses (e.g. completely blank responses) are removed and do not contribute to the response rate. The Families surveys, and hence FamCAS data, are anonymous, responses cannot be linked back to the Service person.

In 2017 the question: "Are you married to/in a civil partnership with a member of the Regular [Service]?" was added to the questionnaire. This allows anyone outside of the target population to be removed. Those who do not provide information on their location or their partners' Service or Rank are also excluded – this information is required for weighting the data.

Stage 6: Data compilation and results production

Many questions are recoded to simplify the output. For example, all 5-point Likert scale responses are recoded into a 3-point positive, neutral, negative scale. Responses are weighted by Rank, Service, and broad location. This accounts for bias caused by disproportionate stratified sampling and differing levels of response. Full details of the weighting plan are available in the methodology section of the Main Report. Finally, the data is transferred into SPSS.

Tables of results are produced using SPSS Complex Samples to ensure estimates and their corresponding standard errors are correctly weighted. Where year on year comparisons are possible, Z-tests at the 99% confidence level are carried out. Each estimate carries a margin of error to enable users to observe the level of uncertainty in the estimate. In-year tests between Services and locations are also carried out. Non-significant changes are not described as changes in the narrative reporting.

Stage 7: Further Quality Assurance

There are several stages of both automated and manual validation built into the data cleaning process. A copy of the single Service SPSS data set and draft output tables are provided to each of the single Service psychologists for quality assurance purposes.

Each section of tables, along with the content of the narrative report, undergoes several layers of scrutiny. These include cross-checking by at least two members of the Surveys Team as well as checking carried out by CDP statisticians and single Service psychologists. Quality assurance checks at this stage include ensuring the reference tables match the outputs from SPSS, unweighted counts are sensible, historical figures match and that the report commentary aligns with the tables.

Stage 8: Publication

FamCAS is an Official Statistic and is published on the [MOD statistics external webpage on GOV.UK](#).

4 Quality Management

4.1 Quality Assurance

The MOD's quality management process for Official Statistics consists of three elements: (1) Regularly monitoring and assessing quality risk via an annual assessment; (2) Providing a mechanism for reporting and reviewing revisions/corrections to Official Statistics; (3) Ensuring BQRs are publishing alongside reports and are updated regularly.

4.2 Quality Assessment

The most recent internal quality assessment of FamCAS was carried out in November 2021. The quality risk of FamCAS was assessed as medium. Some risks to quality relate to accuracy and are discussed further in the accuracy section of this BQR. In addition, most of the communication methods rely on the Service person passing on email invites or paper surveys to their partner. As yet there is no way to contact the spouse/civil partner directly to invite them to participate in the survey.

5 Relevance

The main users of the Tri-Service FamCAS publication are CDP-Strategy division which includes the Armed Forces Families and Safeguarding team, Central MOD and single Service policy makers. Based on the overarching principles of the UK Armed Forces Families Strategy and the Government's Family Test, the statistics generated from the FamCAS questions are used to understand a wide spectrum of issues affecting families of Service personnel, aiding the development, and tracking of military personnel policies. Furthermore, FamCAS is a key statistic for the Armed Forces Covenant, helping to understand levels of awareness, keeping track of emerging issues and commitments, and helping to shape personnel welfare policies to ensure that spouses and partners of Service personnel are not at a disadvantage from being linked to the Armed Forces. The question set is reviewed on a regular basis to ensure that FamCAS reflects policy user requirements and the priorities of the department.

FamCAS is the largest regular survey of the spouses/civil partners of UK Armed Forces personnel. There were over 4,000 valid responses in 2022, a response rate of 18%. This is lower than previous years which have response rates ranging between around 20% to 25%. However, this year has seen

decreases in response rates for other MOD surveys, such as the Armed Forces Continuous Attitude Surveys (AFCAS), as well.

Standard FamCAS questions have been included in the single Service Families Surveys since 2011. During this time, many FamCAS questions have been adjusted to improve understanding and maintain relevance to users, particularly considering any recent developments within the MOD and the Armed Forces which may affect the responses. Such changes may impact on time series, where applicable these are removed from or noted in the report tables.

6 Accuracy & Reliability

6.1 Overall Accuracy

FamCAS collects data from a disproportionate stratified random sample of approximately 23,000 spouses/civil partners of trained Regular Armed Forces personnel. The sample size is designed to achieve a margin of error within plus or minus three percentage points for each Service estimate. Several questions are only asked of a subset of respondents, and they typically carry a larger margin of error. For example, questions on satisfaction with Service accommodation are only asked of those living in Service accommodation.

FamCAS is designed to give an up-to-date snapshot of the perceptions and attitudes of the spouses/civil partners of Armed Forces personnel. While the FamCAS is reported on an annual basis it should be remembered that these attitudes and perceptions are liable to change within the calendar year, for example, because of events or even due to the time of the year that the responses were collected (a seasonality effect).

The FamCAS data is passed through a range of automatic and manual validation and editing routines. Many aspects of the FamCAS data analysis have been automated, and where possible existing source code is used. This helps to minimise the risk of error and improves timeliness. Where year on year comparisons are possible, 99% confidence level Z-tests are carried out. This level is used to minimise the possibility of finding false positive differences that can be expected when performing a large number of significance tests.

Defence Statistics do not present any results where the responding group size is less than 30 as results for groups of this size are considered too unreliable, yielding margins of error far outside the target range of plus or minus 3 per cent.

6.2 Sampling/Non-sampling errors

The main sampling error associated with FamCAS is due to the disproportionate stratified sampling method. Some strata have very small populations and as such a census of these groups is selected for the sample. Other strata, such as Army Junior Ranks based in England, are much larger and hence a sample is sufficient. Response rates are known to differ between strata and as such the samples for some strata are greatly increased to account for lower response rates. As a result, the final sample selected is not representative of the population as a whole. Some groups are sampled proportionally more than others.

This sample design along with differences in levels of non-response mean that the distribution of characteristics of the respondents' does not reflect their population; some types of spouses are overrepresented whilst others are underrepresented. To correct for this, the survey data are weighted by Service, grouped Rank and broad location. The unadjusted weights were calculated simply by dividing the population size within weighting class (p) by the number of responses within weighting class (r)

Unadjusted weights are only suitable for significance testing within statistical programmes that can process complex samples. Full details of the weighting plan are available in the methodology section of the Main Report.

Weighting in this way assumes missing data are missing at random (MAR) only within weighting classes. This means we assume that within a single weighting class the views of non-respondents do not differ (on average) to the views of respondents. If, within a weighting class, those who did not respond have different attitudes to those who did respond then the observations in this report will be biased and will not represent the attitudes of all families; rather, our observations would only represent the views of the responding population. To account for this, Defence Statistics monitors response patterns over time. Results do not differ outside normal expectations over time, which is one indication that the results are reliable.

One area of concern is low response rates among certain groups, particularly for the more Junior Ranks (OR1-4). As a result, we have tried, where possible, to use smaller weighting classes. Full details are available in the methodology section of the report.

The decrease in the overall response rate from 25% in 2021 to 18% this year follows an increase between 2020 and 2021. However, response rates this year are lower than all previous levels. Despite this decrease, the number of responses continues to yield estimates with a good level of precision. When no subsets are applied, estimates for each single Service are within the +/-3% margin of error aimed for with the survey design. Margins of error are larger for Officer/Other Rank estimates by Service, but most have a margin of error within +/- 5%. Tables of the corresponding margin of error for each estimate are published within the reference tables.

It is important to note that there are some methodological limitations which may affect the accuracy of the results. For example, the surveys were distributed via Service personnel, so receipt of the survey is not guaranteed. The use of administrative proxy data for marital status will yield some over and under coverage within the sample. These discrepancies may reduce the accuracy of the statistics and may also affect how the data is weighted. Furthermore, there is no certainty that the person who completes the survey is the Service person's spouse or civil partner.

6.3 Data Revisions

Data revisions are handled in accordance with the [MOD's Official Statistics Revisions and Corrections Policy](#).

There are no scheduled revisions to FamCAS. Any required corrections in addition to the above will be released in updated reports and/or reference tables, along with the reasons for the corrections, on the GOV.UK website.

7 Timeliness and Punctuality

7.1 Timeline

The FamCAS timeline is driven by the timing of the annual Armed Forces Covenant Report to Parliament each year. Overall, the FamCAS takes approximately 8-9 months to complete, from agreeing the questionnaires to publishing the report. The survey fieldwork period is approximately 13 weeks, this is a relatively long period of time, due to the time taken to distribute and receive postal surveys especially from families living overseas. This, along with the large and complex nature of the survey, means that there is a large gap between the beginning of fieldwork and publication of the report, so findings are not current.

7.2 Punctuality

The publication date is pre-announced on the [GOV.UK Official Statistics Release Calendar](#). All pre-announced publication deadlines have been met.

8 Coherence and Comparability

8.1 Coherence

FamCAS is the definitive source of attitudinal data about the perceptions and opinions of spouses/partners of Tri-Service personnel. There are no other Tri-Service data sources that collect the same attitudinal information with which to ensure coherence.

There is coherence with other MOD surveys. Several questions are aligned with those in the Armed Forces Continuous Attitude Survey (AFCAS).

8.2 Comparability over Time

FamCAS surveys are broadly comparable over time. However, a major review in 2014 impacted on the comparability of results over time for many items. Where changes to question wording, methodology or other events impact upon the comparability of responses over time, footnotes are included beneath the relevant table and in some cases a break in the time series has been applied.

The introductory material and footnotes explain the impact on the statistics of any factors that affect comparability over time. Relevant footnotes are also shown below the tables to indicate any filters that have been applied to the data or any other issues, such as changes to the wording of questions that may affect time series comparison.

8.3 Comparability to other sources

Where relevant, comparisons to the Armed Forces Continuous Attitude Survey have been included within the commentary sections.

The question used to measure loneliness in FamCAS is the [Government Statistical Service \(GSS\) harmonised principle of loneliness](#). Although not directly comparable due to differences in age and gender profiles of respondents, broad comparisons with other surveys that use this principle may be helpful. Please refer to the [additional harmonisation guidance related to loneliness](#) for more information.

9 Accessibility and Clarity

9.1 Accessibility

The FamCAS report was published on the [Tri-Service FamCAS page](#) on GOV.UK as an accessible PDF, accompanied by Technical Annex tables in Excel and ODS format for each report section.

From 2021 we will no longer be publishing a five-year printable pdf version of the data tables. All information previously published in these tables will still be available in the accompanying ODS and Excel Technical Annex. If users require a printable version of the tables (which is limited to the previous five-years), please contact Defence Statistics (Surveys) at: Analysis-Surveys-Enquiries@mod.gov.uk.

9.2 Clarity

In addition to this Background Quality Report, the FamCAS report contains extended commentary for each section which aids users' interpretation of the data, as well as a methodology section including target population, information on the sample, respondents, weighting, statistical tests used, and notations and definitions used. The format of the report is regularly reviewed to improve presentation and aids users' interpretation of results.

Detailed results are presented in background tables in Excel and ODS formats and include tables showing margins of error for each estimate in Annex B (Service) and C (Location). Relevant footnotes are shown below tables to indicate any filters that have been applied to the data or any issues with the data or time series comparisons.

10 Trade-offs between Output Quality Components

The main trade-off of FamCAS is between timeliness and quality. Although the published report consists mainly of statistical tables and charts, additional question breakdowns e.g. by Rank or age group are not provided. This is to ensure that the basic statistical information can be made available to the public as soon as the publication is in a clear, accessible format.

Additional analysis for internal users is available on request and external requests would be considered under the Freedom of Information Act.

11 Cost and Respondent Burden

The sample size is calculated to be the most efficient in order to meet the levels of precision outlined in Section 6.

Response to FamCAS is voluntary. Participant information is provided within the questionnaire to encourage informed consent. Most respondents complete the survey within 30 minutes.

12 Confidentiality and Security

12.1 Confidentiality – Policy

FamCAS is an anonymous survey, results cannot be linked back to the Serving partner. Only a small number of individuals involved in the processing and analysis of responses have access to the person-level data. No person from any respondent's Chain of Command can access individual level data. Data Protection Impact Assessments and Data Access Agreements are in place to minimise risk to confidentiality, in accordance with the Data Protection Act.

12.2 Confidentiality - Policy

Results where the responding group size is less than 30 are not presented as results for groups of this size considered too unreliable and may be disclosive.

12.3 Security

All staff involved in the FamCAS production process adhere to the MOD and Civil Service data protection regulations. In addition, all members of the working group must follow the relevant codes of practice for their professional groups; the Government Statistical Service (GSS) and the Government Social Research (GSR) Service. All data is stored, accessed, and analysed using the MOD's secure IT system.

Last updated: 21 July 2022