

# Background Quality Report

## Census 2011: Working Age UK Armed Forces Veterans in England and Wales

The purpose of a background quality report is to inform users of the statistics about the quality of the data used to produce the publication, and any statistics derived from that data. It also discusses existing uses of the statistics and user requirements.

This assessment relates to the 'Census 2011: Working Age UK Armed Forces Veterans in England and Wales' statistics published by Defence Statistics on 27 September 2018.

### 1. Introduction

#### 1.1 Overview

This statistical bulletin is the first in a two-part series, providing estimates on the size and socio-demographic characteristics of the UK Armed Forces veteran population of working age (between 16 and 64 years) residing in England and Wales, using responses provided in the [2011 Census](#)<sup>1</sup>, administered across England and Wales by the [Office for National Statistics](#) (ONS)<sup>2</sup>.

Summary figures on veterans are presented on: people characteristics; location (county, region, local authority, district and NHS authority area); health; employment status; education and accommodation (housing).

These statistics are published as Official Statistics, adhering to the [UK Statistics Authority](#) (UKSA)<sup>3</sup> protocols on [pre-release access](#)<sup>4</sup>.

The sections below review this statistical release in line with the [Quality assurance Framework of the European Statistical System](#)<sup>5</sup>, alongside other considerations which are relevant to measuring and reporting on quality.

This work contains statistical data from ONS which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

#### 1.2 Background

The Armed Forces Covenant is an agreement by the nation and the Government that the Armed Forces community should not face disadvantage compared to other citizens in the provision of public and commercial services.

All Local Authorities, as well as Other Government Departments, and numerous private employers and charities have signed up to the Covenant and the Community Covenant agreeing to consider the specific needs of the Armed Forces Community in the delivery of their local services. To enable policy development and service provision, detailed evidence on veterans is required at low level geographies. These statistics have been compiled to meet this requirement.

The MOD has already published information on veterans' health, education, employment and housing status in the 'Annual Population Survey: UK Armed Forces Veterans Residing in Great Britain' [Official Statistic](#)<sup>6</sup>. However, due to the sample size, estimates are only presented down to county geographical level.

Therefore, the MOD has collaborated with the ONS and set up a data linkage study, to identify UK Armed Forces veterans in the 2011 England and Wales Census. Circa 2.1 million electronic Service leavers records were matched with the 2011 England and Wales Census data, resulting in 850,000 matched veteran records.

This statistical bulletin can be used to explore the following types of questions:

- How many working age veterans were there in England and Wales in 2011? What were their socio-demographic characteristics, and where did they reside?
- What proportion of working age veterans were estimated to be in good health, to be disabled, to be in employment, to own their own property? etc...

Whilst this statistical bulletin provide users with estimates of veterans at low geographical levels, it does not enable comparisons to be made between working age veterans and usual residents in England and Wales, which may indicate potential veteran disadvantage. This will be provided in the second report in the series to be published in 2019 once the ONS have published comparison usual resident data, and will enable users to explore whether the percentage of working age veterans in England and Wales in 2011 was higher or lower than usual residents with regards to good health, disability status, employment status, property ownership etc...

This second report and accompanying background report will be published on the Gov.uk website: <https://www.gov.uk/government/collections/census-2011-working-age-uk-armed-forces-veterans-residing-in-england-and-wales-index>

### 1.3 Methodology and production

#### *Data Sources*

The MOD Service Leavers Database (SLD), a single source of electronic information for Service personnel that have left the UK Armed Forces, irrespective of regular/reserve status and length of Service. This database, which is updated monthly, contains records for approximately 2.1 million Service leavers, sourced from a variety of legacy and current administrative systems held within the MOD.

The ONS 2011 England and Wales Census data. Full details of the 2011 Census data and how it was collected can be found on the ONS website: <https://www.ons.gov.uk/census/2011census>.

#### *Data Coverage*

SLD data includes electronic records for all Service leavers since 1973 for the Naval Service leavers; 1974 for Army Service leavers; and 1969 for RAF Service leavers. From the Annual Population Survey: UK Armed Forces Veterans Residing in Great Britain' [Official Statistic it is estimated over 50% of veterans are aged 65 and over; the majority of which would have left prior to 1969.](#) Therefore, the matched veteran cohort excludes a large number of veterans, including veterans of the Second World War and subsequent National Service which ended in 1960, with the last National Servicemen released from the Armed Forces in 1963. Due to lack of electronic data on older veterans, these statistics include only veterans of working age – those aged under 65.

ONS 2011 England and Wales Census data is comprehensive: There was a legal requirement to complete the 2011 census questionnaire, under the terms of the [Census Act 1920](#)<sup>7</sup>. As at 27 March 2011 everyone who had lived or intended to live in the country for three months or more was required to complete a questionnaire. Failure to return a completed questionnaire could lead to a fine and criminal record. Data were collected from around 25 million households and special arrangements were made to count people living in communal establishments such as; boarding schools, prisons, military bases, hospitals, care homes, student halls of residence, hotels, royal apartments and embassies, as well as for particular communities; rough sleepers, travelers and

those living on waterways. In these cases, field staff delivered and collected questionnaires and, where needed, provided advice or assistance in completing the questionnaire.

### *Data Linkage*

The data linkage involved matching circa 2.1 million records in the MOD Service Leavers Database with the ONS 2011 England and Wales Census data. The data linkage was undertaken by the ONS and resulted in approximately 850,000 matched records. Due to the SLD having a low coverage for older veterans, only records for those aged under 65 were retained, resulting in a final matched cohort of 745,765 SLD records with the Census dataset.

Linkage was carried out using 24 combinations of first name, surname, previous surname, date of birth and gender. Each of these combinations are known as a match key. Using varying combinations of the information enabled records to be matched when there were spelling inaccuracies or missing information in one of the datasets.

Each of the match keys were used to link the data in a stepwise process. Any matched records were marked as 'matched' and any unmatched records (residuals) were then matched using the next match key.

To reduce the risk of false positive matches, records were only linked on a match key if it was unique on both datasets (i.e. one-to-one match). If multiple records matched on a particular match key, then the link was not made.

This is known as a hierarchical deterministic approach which is prevalent in linkage studies across epidemiology; the match-key approach has been seen to perform well in an Australian community health care study.

All successfully matched data were held anonymously in a secure environment and MOD Accredited Researchers extracted summary tables from within the ONS Secure Research Service (SRS) based in Newport. All tables were scrutinized by the SRS to ensure there was no risk of disclosing sensitive or personal information.

### *Compilation of Numbers and calculation of Percentages*

Percentages were calculated as the ratio of each number, relative to the total number of veterans within the specific location or demographic group. The exception to this were the calculation of economic activity outcomes, presented in Section H of Annex A. These percentages were calculated in line with the [Office for National Statistic's definition](#)<sup>8</sup>.

- a. The percentages of veterans reported as **employed and economically inactive** were calculated as the ratio of those veterans with the respective employment outcomes, relative to the total number of veterans employed, unemployed and economically inactive.
- b. The percentages of veterans reported as **unemployed** were calculated as the ratio of unemployed personnel, relative to the total number of personnel employed and unemployed.

Since the unemployment rate was calculated using a different population to the employment rate and the economically inactive rate, the employment, unemployment and economically inactive rates will not sum to 100%.

## **2. Relevance**

The key users of these statistics are Government departments, Devolved Administrations, Local Authorities, the third party and the private sector. The information will aid policy development and service delivery in support of the Armed Forces Covenant.

The Armed Forces Covenant recognises that the Government's commitment to ensure the Armed Forces Community (currently serving, veterans and dependants) are not disadvantaged compared to other citizens.

This statistical bulletin provides a key statistic: The estimated number of working-age UK Armed Forces veterans residing in England and Wales by low level geographical breakdowns, as a proportion of the working age population. In addition, it provides information on the socio-demographic breakdown of working-age. This will aid policy makers identify where efforts should be focused in relation to the Armed Forces Covenant.

This bulletin is the primary means in which this information is made available in the public domain.

### **3. Accuracy**

The precision of each match key was checked by manually reviewing a sample of the matched records. If 90% or more of the sampled matches were accepted as correct that match key was accepted. The final dataset was made up of all matches from the accepted match keys.

Analysis was carried out to ensure the matched dataset was not biased. The age, sex and year of exit profiles for: the 'accepted matches' & the 'discarded matches' and; the accepted matched and the non-matches were compared. This was to ensure a population was not being lost from the data by the matching process.

There are some data limitations which may have impacted on success of data linkage:

- a. Historically individuals could use a nickname rather than a first name.
- b. Dates of birth for commonwealth citizens can be incorrect, especially for Gurkhas since date of birth is not culturally significant in Nepal.
- c. Spellings for Commonwealth citizens names may be incorrect.
- d. Women who changed their name following marriage.

Comparisons have been made to check for consistency of results between this Census 2011 report and figures presented in the Annual Population Survey Statistics, which provide estimates on the size and socio-demographic characteristics of the UK Armed Forces veteran population residing in Great Britain (GB) using responses provided in the 2016 Annual Population Survey (APS) administered by the Office for National Statistics (ONS). Comparisons were made on the percentages of veterans by age-group, gender and region.

Although the populations reported on differ between these reports (the Census 2011 report covers working age veterans residing in England and Wales, whereas the APS covers veterans aged 16+ residing in Great Britain), the proportions of veterans by age-group, gender and region were similar between the reports.

### **4. Timeliness and Punctuality**

These statistics have been compiled and published by the MOD in response to the Minister of State for Health's paper on the Health and Wellbeing of the Armed Forces Community, presented to the Ministerial Covenant and Veterans Board (MCVB) in April 2018. MOD was tasked with releasing lower level geographical information on veterans in time for NHS England and Local Authorities planning rounds which commence in October.

This Statistical Bulletin was published on time to meet the pre-announced release date, in line with the Official Statistics' code of Practice.

## 5. Accessibility and Clarity

The statistics can be accessed through the Gov.UK website at the following link:

<https://www.gov.uk/government/statistics/census-2011-working-age-uk-armed-forces-veterans-residing-in-england-and-wales>

The Statistical Bulletin is published in a PDF file with the data available in table format in both Excel and Open Data Spreadsheet. Defence Statistics are currently ensuring all published information is equally accessible by everyone. Key findings have been presented on the first page of the Statistical Bulletin so that users can quickly focus on the important results, with more detailed commentary and glossary of key terms presented within the Statistical Bulletin

24 hour pre-release access to the report is available to a limited distribution list within MOD. The full list can be found in the pre-release access list available on the Gov.UK website:

<https://www.gov.uk/government/statistics/defence-statistics-pre-release-access-list>.

## 6. Coherence and Comparability

Information relating to veterans has previously either been from data sources where a veteran would self-declare their previous service, such as the Annual Population Survey or from administrative data based on a service delivered to veterans, such as the "Career Transition Partnership ex-Service personnel employment outcomes [Official Statistic](#)<sup>9</sup>. This is the first release of information where veterans have been identified by linking two datasets.

Where possible data is presented using standard categorisations to aid comparison across statistical releases related to veterans i.e. data has been presented using standard age and qualification level groupings; employment rate calculations are in line with the ONS definitions.

Definitions within this Statistical Bulletin, where possible, are consistent with ONS definitions. It should be noted the tenure figures are not comparable to the tenure figures published by the ONS. The ONS use a combination of Tenure, Landlord, and size of [household](#)<sup>10</sup>; the data accompanying this statistical bulletin present Tenure and Landlord responses independently. However, the ONS are currently creating equivalent data tables, from the 2011 Census, on the England and Wales working age general population to enable comparisons. These tables will be published before the end of 2018 both on the ONS website and as an Annex C to this statistical bulletin.

## 7. Trade-offs between output quality components

The quality components of accuracy and completeness were balanced in deciding whether to release information on veterans aged 65 years and older from the SLD who were matched to the 2011 Census. There is a high demand for information relating to all veterans however analysis showed the matched cohort was low in coverage and did not representative of veterans aged 65 and over. The decision was therefore taken to only publish information relating to veterans aged under 65.

## 8. Assessment of User Needs and Perceptions

Local Authorities and charities identified a need for lower level geographical veteran information in ONS's evidence gathering for the 2021 Census. There is a requirement for this information to aid policy making and service delivery to enable the commitment under the Armed Forces Covenant to be met.

The linked data in this publication provides a useful research resource for informing policy and service delivery, but it misses a large part of the service leavers' population. Data users need information on the whole population and therefore it has been concluded that the linked data only partially meet the user needs. Due to these limitations, ONS recommended the inclusion of an armed forces veterans question in the 2021 Census<sup>12</sup>.

By sitting on a variety boards alongside Other Government departments and charities Defence Statistics are well placed to understand the policy and delivery needs and where appropriate, reassess what is released in routine publications.

Defence Statistics (Health) review all internal and external veteran information requests (i.e. all PQs, internal ad hocs and FOI requests) to identify possible changes to:

- a. the format of publications
- b. the level of detail included that would help meet user needs.

Defence Statistics invite feedback on all external releases, with contact details provided on the first page of each publication.

## **9. Performance cost and respondent burden**

### **Operational Cost**

The production of these statistics was collaborative with the ONS. These statistics were compiled from existing datasets. However, the data linkage required ONS resource, followed by both ONS and MOD resource to validate the linked data and determine matched records to be used in the study. The ONS Secure Research Service also provided support to check and approve extracted data for public release.

It is estimated that the production of these statistics required 30 working days of MOD resource (equivalent to 0.15 FTE). This was broken down into the following:

- a. Five days, working with the ONS, to validate the linked data and determine matched records to be used in the study.
- b. Ten days to extract the matched dataset, and fulfill data disclosure requirements.
- c. 15 days to compile figures (in Excel and in open data format), the summary bulletin and accompanying documentation.

## **10. Confidentiality, Transparency and Security**

Defence Statistics analysts involved in the study all have ONS Researcher Accreditation, and have all signed a declaration that they understand their responsibilities under the Data Protection Act and the Official Statistics Code of Practice.

Matched data were extracted and compiled in line with the legal framework of the ONS Secure Research Service (SRS).

The ONS Secure Research Service's disclosure policy for these statistics was to ensure that figures fewer than ten were suppressed, and presented as '~', to prevent disclosure of sensitive or identifiable personal information.

The top-level summary statistics on estimated numbers of veteran by location have been presented in Tables A1 and A2 in Annex A in unrounded format.

In all other tables in Annex A, numbers of ten or more have been rounded to the nearest five. In line with the directives of the JSP 200, Defence Statistics took the additional step of rounding all numbers that present responses to specific questions, and all numbers in tables which present population characteristics of the veteran cohort. This was to prevent users from inadvertently deriving small numbers from across the tables.

The information presented has been structured in such a way to release information to the public domain that contributes to the MOD accountability to the British public but which doesn't compromise data protection.

Defence Statistics adhere to the principles and protocols laid out in the Code of Practice for Official Statistics and comply with the pre-release access arrangements. The Defence Statistics Pre-Release Access lists are available on the Gov.uk website.

## 11. References

1. 2011 England and Wales Census: <https://www.ons.gov.uk/census/2011census>
2. Office for National Statistics: <https://www.ons.gov.uk/>
3. UK Statistics Authority: <https://www.statisticsauthority.gov.uk/>
4. UKSA Protocol on Pre-Release Access: <http://www.statisticsauthority.gov.uk/about-the-authority/uk-statistical-system/legislation/pre-release-access/index.html>
5. Quality Assurance Framework of the European Statistical System: [http://ec.europa.eu/eurostat/documents/64157/4392716/qaf\\_2012-en.pdf/8bcff303-68da-43d9-aa7d-325a5bf7fb42](http://ec.europa.eu/eurostat/documents/64157/4392716/qaf_2012-en.pdf/8bcff303-68da-43d9-aa7d-325a5bf7fb42)
6. 'Annual Population Survey: UK Armed Forces Residing in Great Britain' Statistics: <https://www.gov.uk/government/collections/annual-population-survey-uk-armed-forces-veterans-residing-in-great-britain>
7. Census Act 1920: <https://www.legislation.gov.uk/ukpga/Geo5/10-11/41/contents>
8. ONS methodology to calculate employment rates: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/december2017>
9. Career Transition Partnership ex-Service personnel employment outcomes <https://www.gov.uk/government/collections/career-transition-partnership-ex-service-personnel-employment-outcomes-statistics-index>
10. 2011 Census variables and classifications: <https://www.ons.gov.uk/census/2011census/2011censusdata/2011censususerguide/variablesandclassifications>
11. The use made of Official Statistics: <https://www.statisticsauthority.gov.uk/archive/assessment/monitoring/monitoring-reviews/monitoring-brief-6-2010---the-use-made-of-official-statistics.pdf>
12. Information on the inclusion of an armed forces veterans question in the 2021 Census: <https://www.ons.gov.uk/census/censustransformationprogramme/questiondevelopment/armedforcescommunity/updateonmeetinginformationneedsonthearmedforcescommunityveterans>

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