Anthropometry of Offshore Personnel

Statistical Analysis of UK Offshore Workers - 2024 and 2025 Data

CityPort Oil & Gas Services

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EXECUTIVE SUMMARY

The weight and size of offshore energy workers in the UK sector have been slowly increasing over recent years, which impacts adversely on the design and operation of key equipment on offshore energy installations, including escape and evacuation systems.

In 2024, CPOGS completed a statistical analysis of the weight of UK offshore workers [Ref 03] which was commissioned and published by OEUK. Source data for the report was provided from the Vantage-POB database which detailed the weight of offshore workers who had flown offshore to a UK Installation by helicopter during the month of December 2022.

In 2025, OEUK provided CPOGS with access to additional anthropometric data to analyse relating to the average weight of active offshore workers during the year 2024, and shoulder width data for offshore workers up to July 2025. The objective of the additional analysis is to provide updated information to industry stakeholders regarding the current weight and size of UK offshore workers.

It is also possible to compare the latest results to the previous analysis of the December 2022 data, thereby offering further insights into recent weight and size trends. The additional Vantage-POB data from 2024 and 2025 has therefore been carefully analysed, compared to the previous findings, and the detailed results are published in this report.

Offshore Worker Weight Data

The 2024 weight dataset provided the average (mean) recorded weight during the year of each offshore worker registered within the Vantage-POB database, who worked offshore in the UK sector at least once within 2024. Nearly 50,000 data entries were provided, and the size of the dataset is therefore statistically significant.

The average weight of UK offshore workers calculated from the 2024 dataset is 95.85kg, with an associated standard deviation of 15.59kg. The average weight estimate for 2024 is nominally 0.71kg less than the average weight previously calculated using the December 2022 weight data which was 96.56kg [Ref 03]. However, it should be noted that the two data sets are **not** directly comparable. The earlier December 2022 dataset provided a single point estimate based on one month of data in winter, and the 2024 dataset is an average of worker weight across the entire year. Therefore, it is quite probable that the difference in average weight estimate is related to seasonal variation.

Based on the analysis work completed CPOGS has concluded that there has been no observable increasing or decreasing trend in offshore worker weight from December 2022 to the end of 2024.

CPOGS consider it appropriate for Duty Holders to use the revised average worker weight estimate of 95.85kg and standard deviation of 15.59kg described within this report, (referenced to the year 2024), to support future design weight calculations for evacuation and escape systems. However, all future calculations based on these assumptions should be presented to the UK HSE for validation as part of any updated PFEER 5 Risk Assessment, as noted within the UK HSE Document OIS 1/2025 [Ref 01].

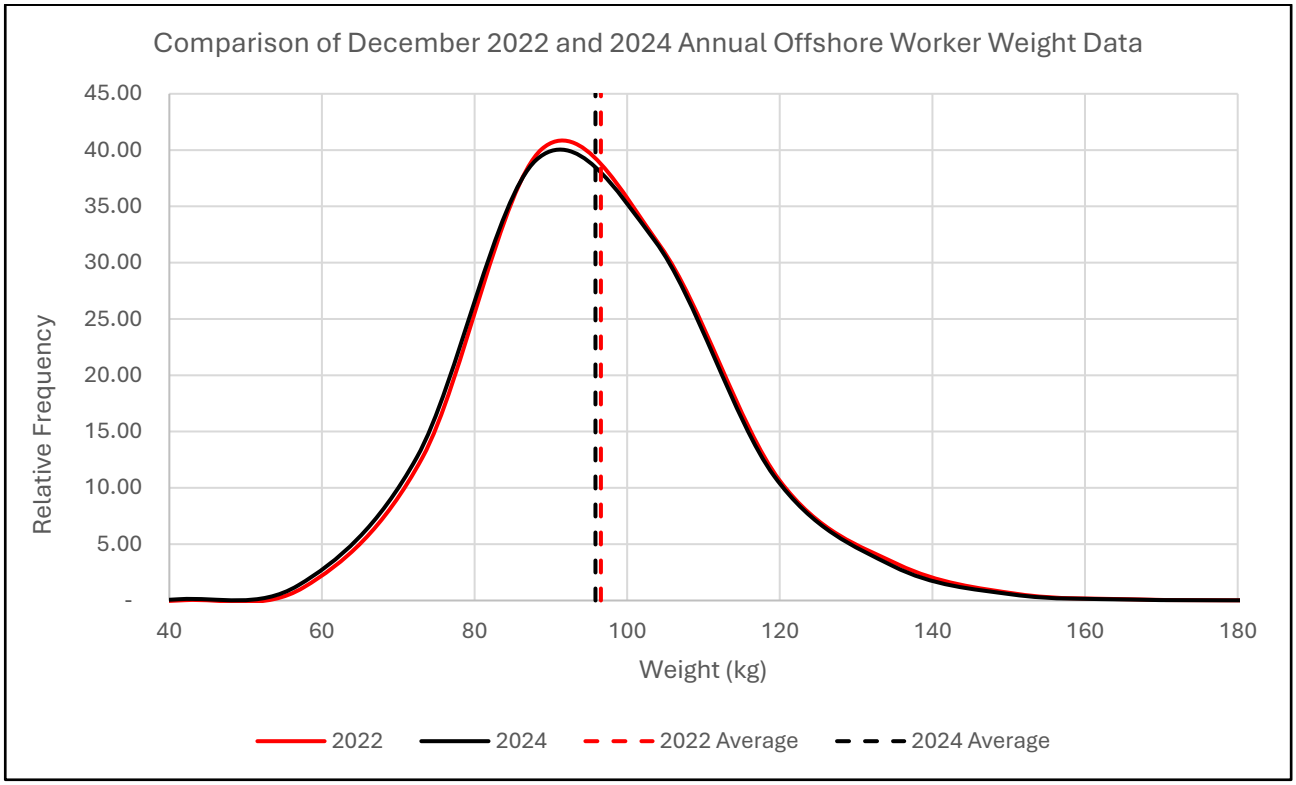

Figure 1.1 - Normalised Population Comparison for December 2022 and 2024 Annual Average Weight Distribution Datasets for UK Offshore Workers.

Offshore Worker Shoulder Width Data

The shoulder width data provided to CPOGS describes the recorded shoulder width of each offshore worker registered in the Vantage-POB database in July 2025. A total of 104,965 individual data entries were provided and therefore the dataset is statistically significant. However, the size of the dataset is also much bigger than the active offshore UK worker population in 2024/25, which is believed to approximately 50,000 personnel.

CPOGS analysis of the original database query used to extract the shoulder width information indicates that the provided dataset is representative of all UK offshore workers from 2014 (when shoulder width measurements were first introduced) to July 2025.

Detailed analysis of the July 2025 shoulder width dataset indicates an average shoulder width of 49.33cm with associated standard deviation of 3.44cm for UK Offshore workers in 2025.

A further analysis of the July 2025 shoulder width dataset by worker age group indicates that there is no significant difference in shoulder width by age group, suggesting that there is no observable trend in shoulder width anticipated (either increasing or decreasing) as the offshore population ages.

Comparison of the July 2025 shoulder width data to the December 2022 shoulder width data also indicates that the distribution of offshore shoulder width has not varied significantly with time.

CPOGS consider it appropriate for Duty Holders to use the average shoulder width estimate of 49.33cm (with a standard deviation of 3.44cm) for UK offshore workers in 2025, for future calculations in relation to evacuation and escape systems. However, all calculations based on these assumptions should be presented to the UK HSE for acceptance as part of any updated installation PFEER 5 Risk Assessment, as noted within the UK HSE Document, OIS 1/2025 [Ref 01].

CPOGS conclude that the additional 2024 and 2025 datasets provided from Vantage-POB have provided further reliable and useful information regarding the weight and size of offshore workers in the UK sector. The new datasets are of a better quality than the first December 2022 dataset but are different in format, which therefore makes direct comparison of the results complex. However, the overall conclusion is that there was there no meaningful change in offshore worker weight or shoulder width from December 2022 to the end of 2024.

It is strongly recommended that the analysis of offshore worker data is repeated in future years as genuine changes in weight trends are foreseen, particularly linked to the introduction of the industry safe weight limit of 124kg for workers on UK Offshore Installations in 2026.

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ABBREVIATIONS

CPOGS	CityPort Oil & Gas Services
DNV	Det Norske Veritas
HSE	Health and Safety Executive
IMO	International Maritime Organisation
LSA	Life Saving Appliances
OEUK	Offshore Energies UK
OIS	Offshore Information Sheet
PFEER	Prevention of Fire and Explosion, and Emergency Response Regulations
POB	Personnel On Board
SAR	Search And Rescue
SD	Standard Deviation
SOLAS	'Safety of Life at Sea' Convention - International Maritime Organisation
UK	United Kingdom
XBR	Extra Broad

1 INTRODUCTION

The weight and size distribution of offshore energy workers in the UK sector has once more become a key topic of discussion within the offshore energy industry since 2023. The gradual increase in the weight and size of offshore personnel over the last two decades is an issue which adversely impacts on the design and operation of offshore equipment and systems, creating safety hazards within the industry which require immediate attention by relevant stakeholders.

In August 2024, CPOGS published a report 'Statistical Analysis of the Weight of UK Offshore Workers' [Ref 03] which was commissioned by OEUK. The report provided an analysis of offshore worker weight data recorded during offshore helicopter operations in December 2022. The high-level objectives of this first statistical analysis were to provide:

- A detailed statistical analysis of recent offshore worker weight values and trends in the UK sector.
- Guidance on how to manipulate the latest offshore population weight data to calculate new design weights for recalibrating offshore evacuation and escape equipment.

In September 2025, the UK Health and Safety Executive (HSE) issued a new Offshore Information Sheet OIS 1/2025 entitled 'Big People in Lifeboats and Lifesaving Appliances' [Ref 01]. The new Offshore Information Sheet requires Duty Holders to ensure that lifeboats and other lifesaving appliances deployed on UK offshore installations are 'suitable for use' by the current offshore worker population, taking account of the typical weight and shoulder width of the workers.

Then on the 1st of October 2025, the OEUK published Issue 1 of the 'Industry Safe Weight Limit for Workers on Offshore Installations' [Ref 02]. The primary purpose of the new OEUK policy document is to limit the maximum allowable weight of any individual offshore worker to less than 124kg by the 1st of November 2026. A key driver for this new policy is to ensure that all personnel who work offshore can be safely recovered by Search and Rescue (SAR) helicopters in the event of a major accident occurring.

In August 2025 OEUK commissioned CPOGS to analyse further anthropometric data relating to UK offshore workers, which is more recent. The additional data provides further information relating to UK offshore worker weights in 2024 and UK offshore worker shoulder widths in 2025. The results are published in this report.

1.1 Report Objectives and Scope of Work

The key objectives of this report are:

- To provide detailed statistical analysis of the weight and shoulder width of offshore working personnel using the latest available data from 2024 and 2025.
- To make observations regarding developing trends in offshore worker weights and shoulder widths.

The scope of work includes the following activities:

- Statistical analysis of the raw Vantage-POB weight data for the UK population of offshore workers for 2024.
- Statistical analysis of the raw Vantage-POB shoulder width data for the UK population of offshore workers as of July 2025.
- Estimating meaningful statistical data in respect of the mean and standard deviation of the weight and shoulder width for the male, female and total population of offshore workers in the UK sector for use by industry stakeholders.
- Compare and contrast the 2024/25 datasets with the December 2022 dataset to identify any meaningful trends.

The scope of work for this report in relation to offshore worker weight and shoulder width only applies directly to the UK offshore sector, although it is noted that data trends described within this report may also be applicable to other global operating locations. It is recommended that OEUK members give due consideration to all their offshore operations worldwide when assessing risks associated with the increasing size and weight of offshore personnel.

1.2 Data Sources

Vantage-POB has provided OEUK with an anonymised dataset of recorded weights of UK offshore personnel in 2024, which was recorded for helicopter transit purposes. Vantage-POB has also provided OEUK with shoulder width measurement data for all offshore personnel within the Vantage-POB database with a non-zero shoulder width measurement, as of July 2025.

Vantage-POB is a shared industry system which is run on a not-for-profit basis on behalf of the offshore industry by LOGIC who is the system custodian.

2 STATISTICAL ANALYSIS OF OFFSHORE WORKER DATA

This section of the report provides the detailed statistical analysis of the Vantage-POB datasets identified in Section 1.2. The independent statistical analysis of the Vantage-POB dataset has been completed on behalf of OEUK by CPOGS consultants.

2.1 Vantage-POB 2024 and 2025 Data

2.1.1 Dataset Overview

In the UK offshore oil and gas sector, offshore workers are registered in the 'Vantage-POB' personnel tracking system which is operated by LOGIC on behalf of the offshore industry [Ref 04]. The Vantage-POB system ('Vantage') provides offshore workers with a unique identity number which is used to record important details relating to each individual. Information gathered includes offshore worker survival training records, medical certificates, and details of nominated persons to contact in case of an emergency.

When UK oil and gas workers travel offshore by helicopter, their actual weight is also recorded within the Vantage-POB database for every flight. It is this data which has been analysed for the purposes of this study. The Vantage-POB database also records the measured shoulder width of each offshore worker, which is captured at the time the offshore worker completes their OEUK medical.

In 2025, LOGIC were able to provide OEUK with a further extract of anonymised population weight and shoulder width data from the Vantage-POB system, the details of which are described below. All of the data supplied by LOGIC was fully anonymised so that the data subjects were no longer identifiable, either directly or indirectly. Therefore, it is believed that the dataset falls outside the scope of the GDPR regulations as it is no longer considered to be personal data.

2.1.1.1 Offshore Worker Weight Data 2024

The weight data that has been supplied to OEUK provides the anonymised mean weight of each offshore worker for the year 2024. A total of 49,513 individual data entries were provided in the original dataset in excel format. For each data point, a weight in kilograms is provided along with the sex of the individual.

The weight data provided was recorded at the onshore Heliports, and by the helicopter administrators offshore who record the weight of personnel prior to helicopter transport back to shore. Standard practice is to weigh offshore personnel in their normal clothing, including their shoes, but not including their transit suit or lifejacket. Therefore, all reported offshore worker weights in the dataset assume the worker to be clothed as per this requirement.

There are strict requirements for weighing scales to be regularly tested and calibrated both onshore and offshore. Therefore, all reported offshore worker weights in the data set are assumed to be accurate, with any obvious errors most likely associated with data entry processes.

Of the 49,513 weight data entries provided, 1,873 are noted to be female and 47,595 are noted to be male. Therefore, the calculated percentage of females working offshore in the UK sector based on the weight data record for 2024 is approximately 3.9% of the overall population. There are also 45 offshore personnel for whom no biological sex data has been recorded, (whereby an 'X' has been entered in the record) which account for 0.09% of the overall offshore worker population.

2.1.1.2 Offshore Worker Shoulder Width Data 2025

The shoulder width data supplied to OEUK provides the recorded shoulder width of each offshore worker registered on the Vantage Database on the 10th of July 2025. 104,965 individual data entries were provided in the original dataset in excel format. For each data point, a shoulder measurement in centimetres was provided along with the age and sex of the individual.

The shoulder width data was originally recorded by medical personnel who are previously approved to complete offshore medicals. Detailed guidance is provided to the medical professionals in respect of measuring and recording shoulder width in the OEUK medical guidance documentation. Therefore, it is reasonable to assume that the shoulder width data has been recorded in the same manner across the whole offshore worker population.

Of the 104,965 shoulder width data entries, 4,672 are noted to be female and 100,247 are noted to be male. Therefore, the calculated percentage of females working offshore in the UK sector based on the 2025 shoulder width data is approximately 4.4% of the overall population. There are also 46 offshore personnel for whom no biological sex data has been recorded, (whereby an 'X' has been entered in the record) which account for 0.04% of the overall offshore worker population.

2.1.2 Data Analysis Methodology

For large populations such as offshore workers, physical characteristics of personnel such as weight and shoulder width can be reasonably assumed to be normally distributed for engineering purposes. The Vantage-POB dataset for weight contains more than 49,500 data points and the dataset for shoulder width contains more than 104,000 data points. Both qualify as a suitably large population for further analysis.

From the processed dataset, the population mean weight, or mean shoulder width, μ can be calculated directly using the following equations:

$$\mu = the\ mean = \frac{sum\ of\ all\ data\ points}{number\ of\ all\ data\ points} = \frac{\sum x}{N} \quad (01)$$

The population standard deviation σ, is calculated as follows:

$$\sigma = standard\ deviation = \sqrt[2]{\frac{\sum(x-\mu)^2}{N}} \quad (02)$$

Where:

μ = The population mean.

σ = The population standard deviation.

x = The values in the data distribution.

N = The total number of data points.

NB: The use of the term 'population' in the definition of the above variables is important to note. When studying the UK offshore workforce, the term 'population' refers to the whole group of offshore workers. Any smaller group of workers, such as the workforce on a single installation, or the passengers assigned to a lifeboat is described as a 'sample'.

The **Probability Density Function f(x)** for the normal distribution can then be defined in terms of the mean μ and standard deviation σ, and is as follows:

$$f(x) = \frac{1}{\sigma^2\sqrt{2\pi}} . e^{\left[-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2\right]} \qquad \text{where } -\infty \leq x \leq \infty \qquad (03)$$

Similarly, the **Cumulative Density Function F(x)** for the normal distribution is as follows:

$$F(x) = \int_{-\infty}^{x} \frac{1}{\sigma^2\sqrt{2\pi}} . e^{\left[-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2\right]} dx' \qquad (04)$$

When working with normal distributions, it is usual to make a change of variables to express the Cumulative Density Function in a standardised form. To this end, the standardised random variable u can be defined in terms of the population mean μ, the standard deviation σ and the true random variable x, as follows:

$$u \equiv \frac{(x-\mu)}{\sigma} \qquad (05)$$

The **Probability Density Function** can then be expressed in the standardised form:

$$f_u(u) = \frac{1}{\sqrt[2]{2\pi}} . e^{\left(-\frac{1}{2}u^2\right)} \qquad (06)$$

The form of the standardised Probability Density Function is shown in Figure 2.1 below.

The standardised **Cumulative Density Function** can then also be rewritten as:

$$F(x) = \varphi(u) = \varphi\left[\frac{(x-\mu}{\sigma}\right] \qquad (07)$$

The cumulative value of φ (also known as the 'Z factor') can be looked up in standard statistical reference tables for the Normal Distribution. The form of the standardised Cumulative Density Function for normal populations is shown in Figure 2.2 below.

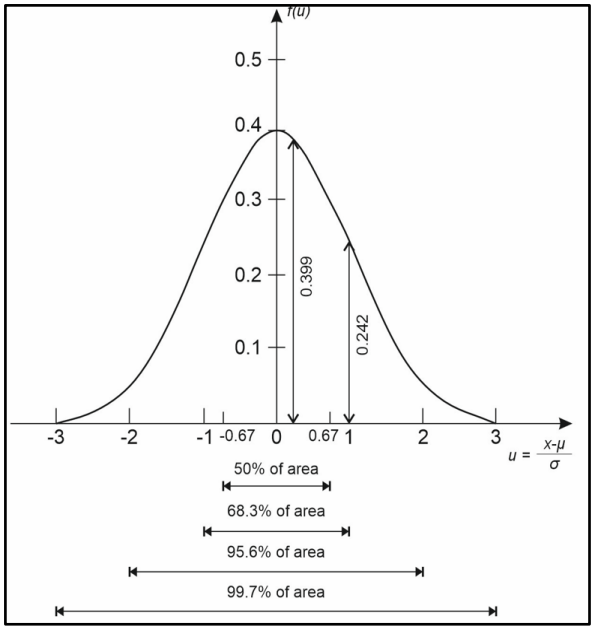

Figure 2.1 - Probability Density Function for a Standardised Normal Distribution.

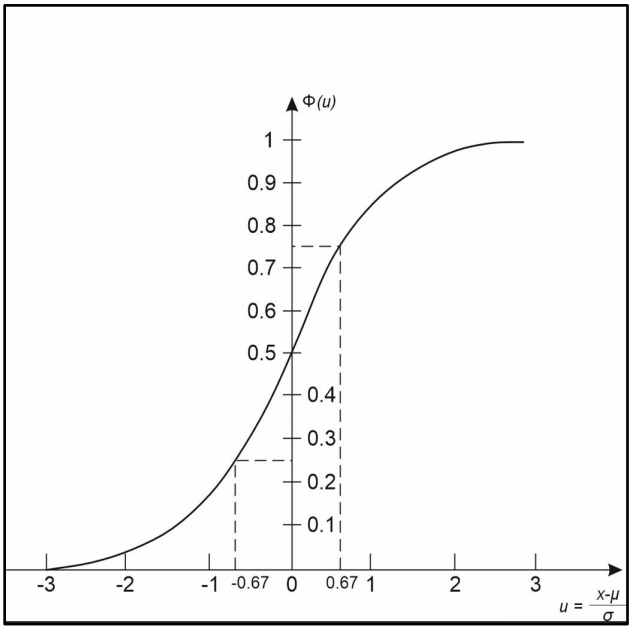

Figure 2.2 - Cumulative Distribution Function for a Standardised Normal Distribution.

2.1.3 Data Pre-Processing

2.1.3.1 Weight Data

The weight data that was forwarded by Vantage-POB to OEUK for the year 2024 has been carefully examined prior to commencing the main statistical analysis.

Within the 2024 weight dataset, there were no individuals with a recorded weight of less than 40kgs (lowest datapoint = 40.8kg) and no individual weights were recorded more than 198kg (highest datapoint of 197.7kg). It is also important to note that there were no blank entries presented within the data set.

The 2024 weight dataset is therefore markedly different to the December 2022, where it was necessary to pre-process blanks, single digit entries and other erroneous readings, which affected approximately 0.47% of the data entries.

As the 2024 dataset provides the average weight of individuals across the full year, the impact of data entry failures is likely to be masked by the averaging process, particularly for personnel flying a regular three and three rotation to an offshore installation who may complete eight offshore trips during the full year.

2.1.3.2 Shoulder Width Data

The shoulder width data that was forwarded by Vantage-POB to OEUK for July 2025 has also been carefully examined and pre-processed prior to commencing the main statistical analysis.

Unlike the weight data described above, the shoulder width dataset from July 2025 contained 88 entries reported as less than 25cm (0.084%) and 97 entries (0.092%) that were less than 35cm. At the other extreme, there were 43 shoulder width entries that were greater than 70cm, but each of those unusually large data entries were above 393cm in width suggesting human error at the time of data entry.

As a result of the pre-processing analysis, the shoulder width entries of less than 35cm and greater than 70cm were removed from the dataset prior to completing the main statistical analysis. An argument could be made for selecting 25cm as the minimum shoulder width, but this decision only adds 9 data points to the overall population of more than 100,000 data points (less than 0.01% of the total population). The results of the subsequent statistical analysis were not sensitive to the selection of 25cm or 35cm as the lower cut off point and therefore all values below 35cm were removed from the processed population.

At the higher end, the removal of the 43 entries that are greater than 70cm is logical. The anomalous entries all range between 393cm and 566cm and appear to represent entries where the decimal point has not been entered. As a sensitivity analysis, the average of the 43 erroneous entries was calculated and shown to be 492cm, which is almost exactly 10x the average shoulder width described later in sub-section 2.1.5 below. This additional calculation seems to indicate there is no bias to deleting the anomalous data if the decimal point theory is accepted as the most probable cause of the anomalously large entries.

The shoulder width data also provides the age of each offshore worker, and the data set was examined a second time from the perspective of the recorded age. Only one entry of less than 18 years was identified, (recorded as minus 25).

At the other end of the scale, 124 workers had a recorded age of greater than 75 years, of which 17 workers were aged between 80 and 84. One offshore worker's age was also recorded as 123 years old.

The size of the worker dataset from July 2025 is also an important consideration requiring further discussion. The population size is greater than 100,000 people, which is more than twice the size of the offshore population who worked offshore in 2024, based on the weight data records. Closer examination of the original query used to retrieve the shoulder width data set leads to the conclusion that the population that was provided includes **all** data entries of personnel recorded within the present Vantage database whenever the shoulder width data point was not null, and not just the data exclusive to the month of July 2025.

The extra broad (XBR) shoulder width measurement requirement became mandatory in April 2015, following changes in OEUK medical guidelines to monitor and record worker shoulder width to ensure compatibility with helicopter emergency exit seating. A transition period during the autumn of 2014 required shoulder measurements to be routinely recorded at medicals and added to the Vantage POB records, in preparation for the April 2015 deadline.

Therefore, the Vantage-POB shoulder width dataset from July 2025 potentially contains all offshore workers who have completed an OEUK medical since October 2014 and may represent more

accurately the whole UK offshore workforce active between October 2014 and July 2025. Further examination of the database query confirms that the age quoted for each individual data point is referenced to July 2025.

Therefore, the dataset could quite feasibly contain shoulder measurements for personnel who were 65 in 2014 and were close to retirement but would be quoted in the dataset as being 76 or 77 now. This scenario would explain why there are so many offshore workers within the provided dataset today who are in their 70s and 80s. It is unlikely that all of these personnel are still working offshore given their age, but their data is still contained within the July 2025 Vantage-POB dataset describing shoulder width.

2.1.4 Weight Data – Results

Following pre-processing of the Vantage-POB weight data, the mean and standard deviation of the dataset was calculated for the overall population of all workers (male and female combined), and the male and female populations in isolation, using equations (01) and (02) above. Table 2.1 below provides a summary of the results.

Table 2.1 - Mean and Standard Deviation of UK Sector Offshore Worker Weight (2024 Annual Vantage-POB Data).

2024 UK Offshore Workers - Category	Average Weight (Kg)	Standard Deviation (Kg)
Male Population of Offshore Workers	96.54	15.22
Female Population of Offshore Workers	78.67	14.94
Overall Population of Offshore Workers	**95.85**	**15.59**

Figure 2.3 overleaf provides a plot of the overall weight distribution for all offshore workers.

The average value (the mean) is slightly greater than the most frequently occurring weight value (the median). This is because the weight distribution has an extended long tail of higher weight values which slightly distorts the actual distribution from the classic normal distribution ‘bell’ curve.

Figure 2.4 overleaf provides plots of the separate weight distributions for both the male and female populations in isolation and the skew which is evident in the distribution for the whole population also clearly occurs in both the male and female offshore worker population distributions.

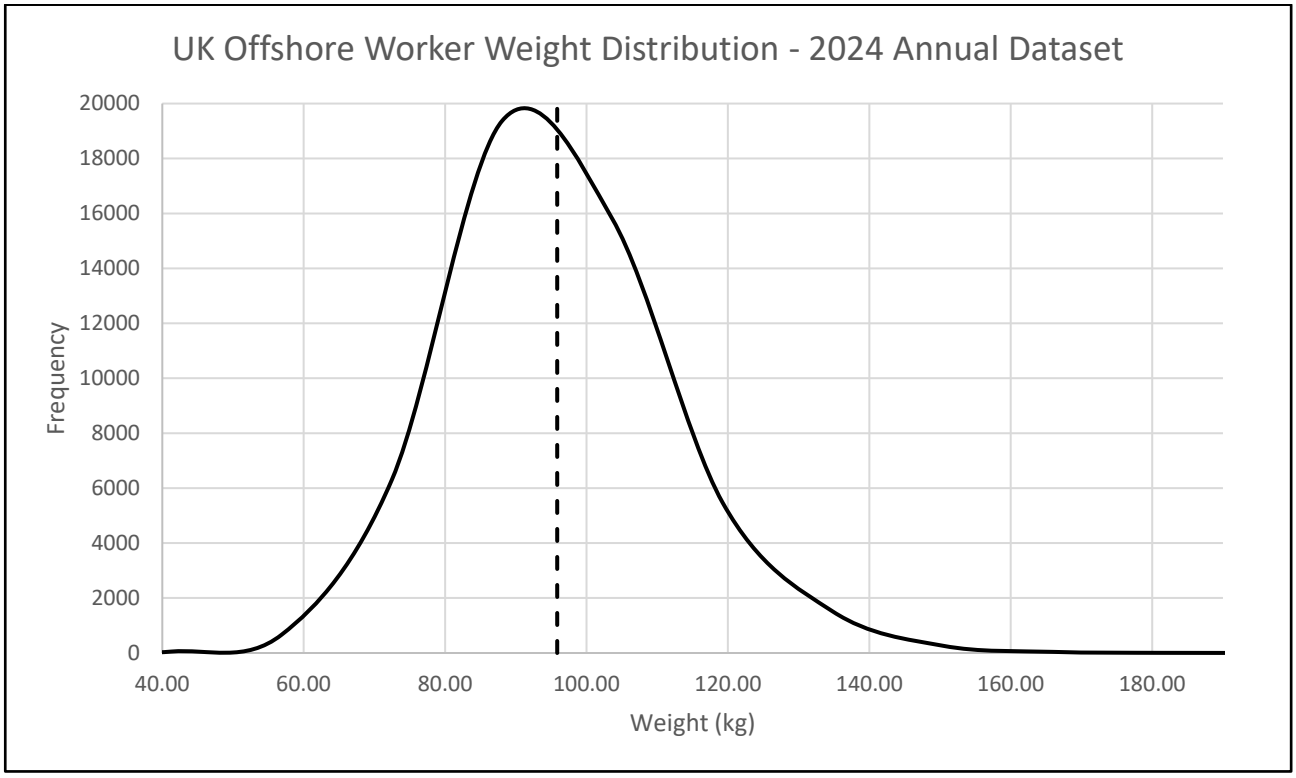

Figure 2.3 - Plot of the Distribution of UK Offshore Worker Work (2024 Annual Dataset) Smoothed using a Standard Deviation Data Bin.

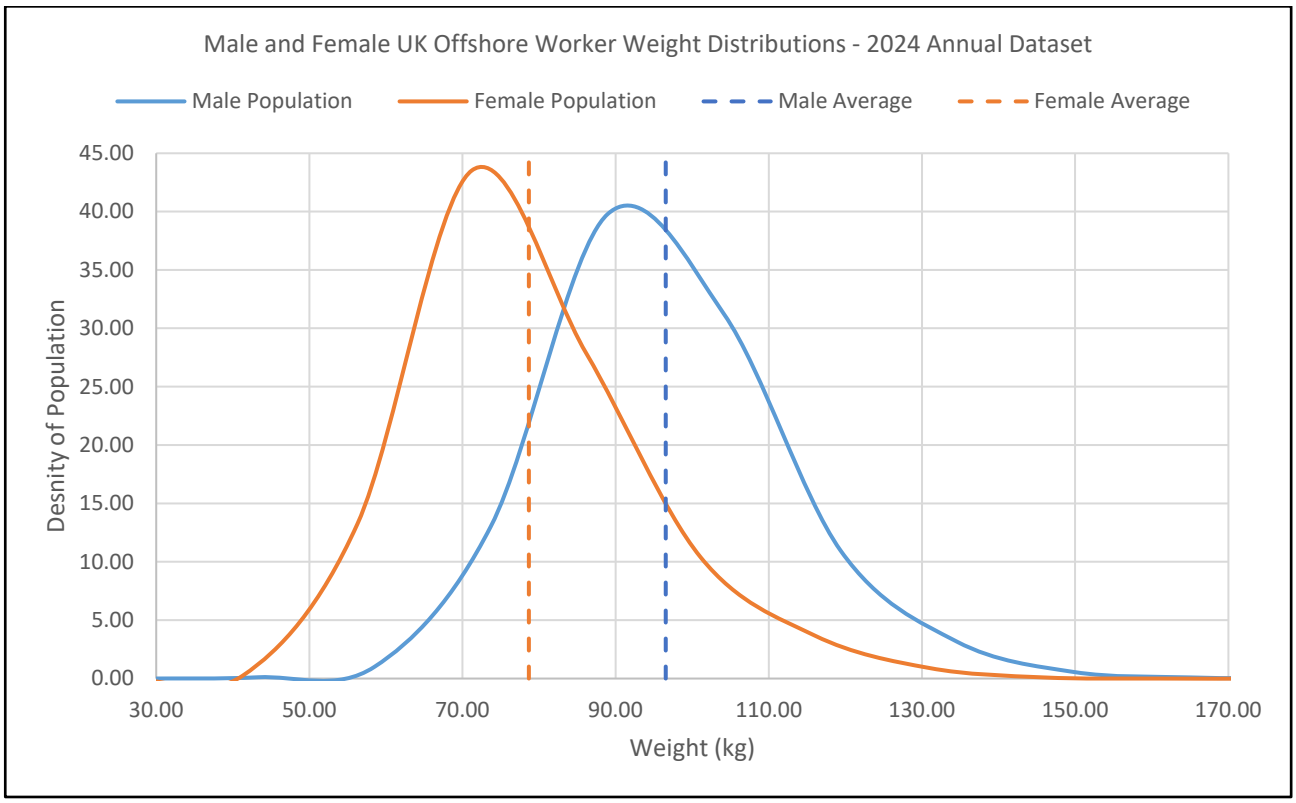

Figure 2.4 – Male and Female UK Offshore Worker Weight Distributions (2024 Annual Dataset) Smoothed using a Standard Deviation Data Bin.

Within the UK offshore energy industry, there are several key milestone values that are currently relevant in 2026 in relation to offshore weight considerations. These values are listed as follows:

- 100kg - The standard SOLAS seatbelt design-load capacity for lifeboats.
- 124kg - The new safe-weight limit for offshore workers.
- 150kg - The maximum weight limit for passengers assigned to lifeboats that comply with Norwegian freefall lifeboat design standard E406 published by DNV [Ref 07].

The percentage of the UK worker population that exceed these values are presented in Table 2.2 below.

Table 2.2 – Number & Percentage of the 2024 Offshore Population Weighing Over 100kg, 124kg & 150kg.

Weight Over	Population Count	Percentage Over
100kg	17,383	35.11%
124kg	2,392	4.83%
150kg	129	0.26%

2.1.5 Shoulder Width Data – Results

Following pre-processing of the Vantage-POB shoulder width data, the mean and standard deviation of the dataset was calculated for the overall population of all workers (male and female combined), and the male and female populations in isolation, using equations (01) and (02) above. Table 2.3 below provides a summary of the results.

Table 2.3 - Mean and Standard Deviation of Offshore Personnel Shoulder Width (2025 Vantage-POB Data).

2025 UK Offshore Workers - Category	Average Shoulder Width (cm)	Standard Deviation (cm)
Male Population of Offshore Workers	49.58	3.24
Female Population of Offshore Workers	43.97	3.35
Total Population of Offshore Workers	**49.33**	**3.44**

Figure 2.5 overleaf plots the overall shoulder width distribution for all offshore workers.

The average value (the mean) is slightly greater than the most frequent occurring weight value (the median). However, the degree of skew of the normal distribution is significantly less than that observed for the offshore weight distribution.

Figure 2.6 overleaf provides plots of the separate weight distributions for both the male and female populations in isolation.

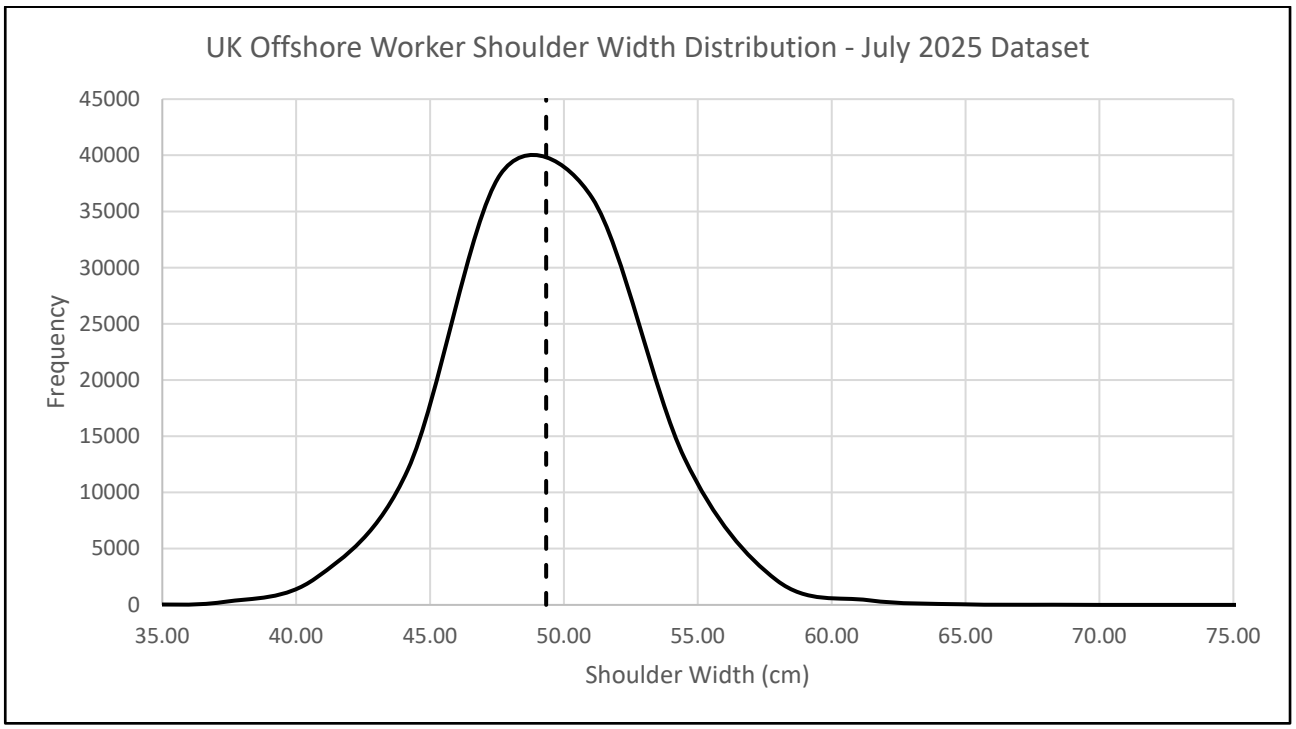

Figure 2.5 - Plot of the Overall Population for Vantage-POB (July 2025 Dataset) Offshore Shoulder Width Data Smoothed Using a Standard Deviation Data Bin.

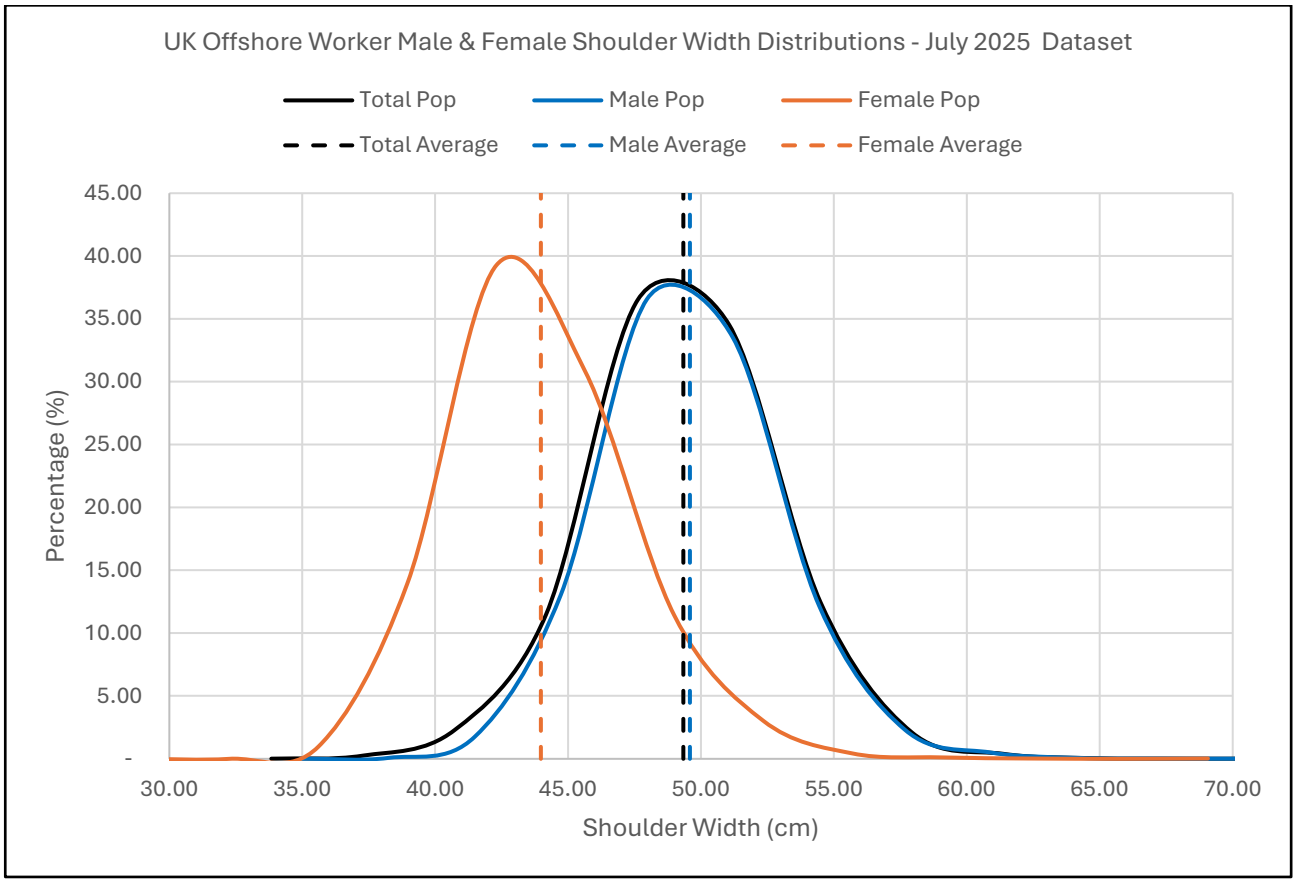

Figure 2.6 - Plot of the Male & Female Vantage-POB July 2025 Offshore Shoulder Width Data Smoothed Using a Standard Deviation Data Bin.

The dataset for shoulder width entries also provides the age of the offshore worker as well as biological sex. Therefore, CPOGS completed an analysis to determine if there is a correlation between shoulder width and worker age group. No correlation was found.

Table 2.4 below provides the detailed analysis of the average shoulder width of UK offshore workers broken down by age group. Figure 2.7 provides the same information in graphical format.

Table 2.4 – Average Shoulder Width of UK Offshore Workers Broken Down by Age Group.

Category	18-29	30-39	40-49	50-59	60-69	70-79	80-89
Average Shoulder Width(cm)	48.23	49.02	49.49	49.73	49.44	48.79	49.13
Population Count	6,867	25,888	30,998	25,015	14,316	1,723	17

The uniformity in average shoulder width across the different age group tends to suggest that average shoulder width is unlikely to change significantly over time in the near future.

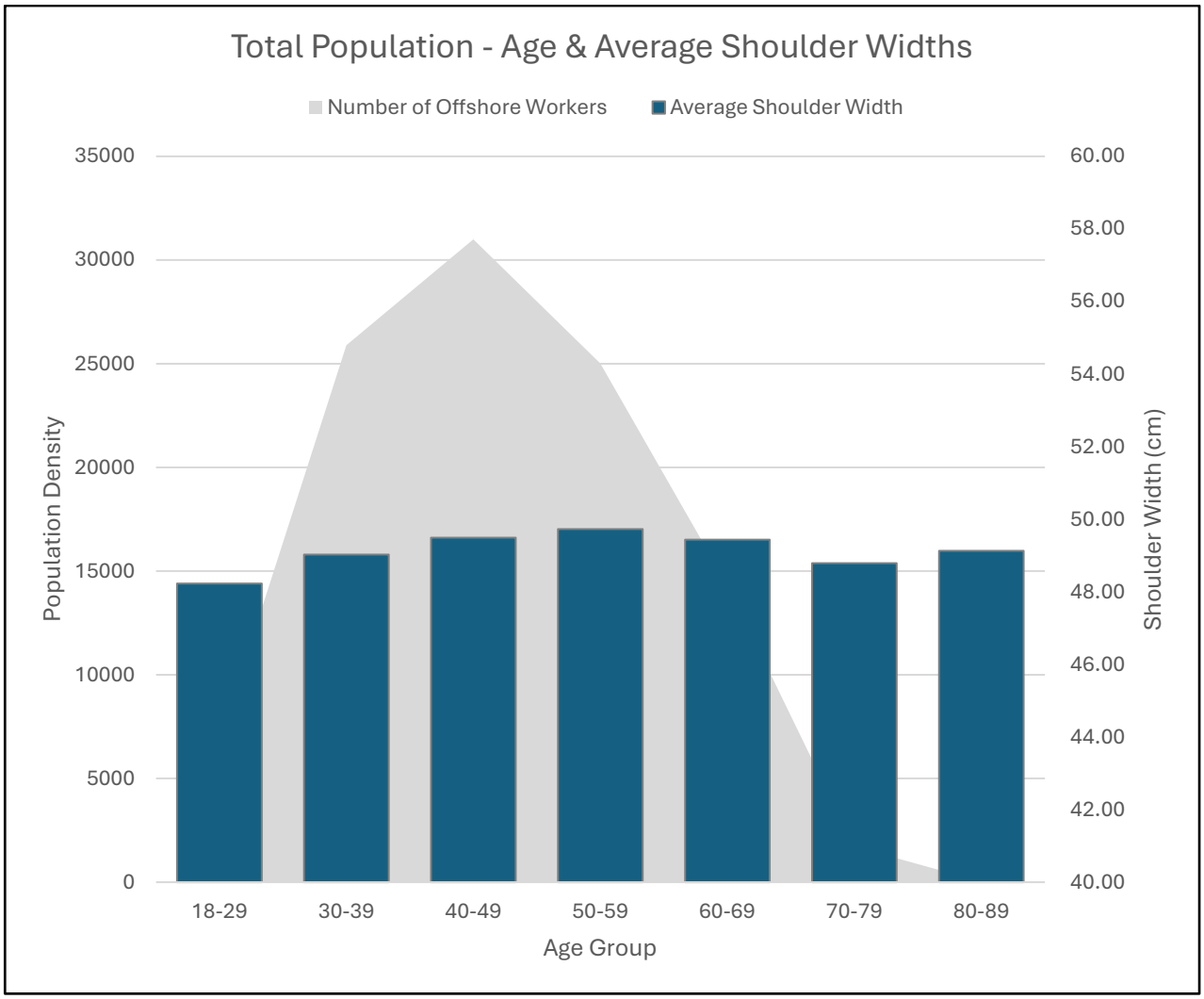

Figure 2.7 - Average Shoulder Width of UK Offshore Workers broken down by Age (July 2025 Data).

Within the UK offshore energy industry, there are several key milestone values that are currently relevant in 2026 in relation to offshore shoulder width considerations. These values are listed as follows:

- 43cm – The standard SOLAS seat width definition for lifeboats built prior to 2008 and not upgraded.
- 48cm - The enhanced seat width for new lifeboats imposed by the International Marine Organisation (IMO) as part of the Life Saving Appliances (LSA) Code Chapter IV (Survival Craft) update in December 2008.
- 53cm - The enhanced lifeboat seat width offered by some lifeboat manufacturers after the issue of OIS 12/2008.
- 54cm – The width of the orange XBR check zone defined within the OEUK shoulder width measurement poster.
- 56cm - The threshold value defined by the UK industry for classification as 'XBR shoulder width' in April 2015.

The percentage of the UK worker population that exceeds these values are presented in Table 2.5 below.

Table 2.5 – Number & Percentage of the Offshore Population Whose Shoulder-Width Exceeds 43cm, 48cm, 53cm & 56cm.

Shoulder Width Over	Population Count	Percentage Over
43cm	101,081	96.43%
48cm	67,663	64.55%
53cm	13,531	12.91%
54cm	8,257	7.88%
56cm	2,894	2.76%

3 DISCUSSION AND CONCLUSIONS

3.1 UK Offshore Workers - Weight Distribution Considerations

It should firstly be noted that the 2024 annual dataset is quite different in nature to the December 2022 dataset that was considered in the first Statistical Analysis Report [Ref 03] published by OEUK in August 2024. Therefore, care must be taken when drawing conclusions regarding current trends in offshore weight from a direct comparison.

The 2024 annual dataset supplied to OEUK and CPOGS provides the average recorded weight of each offshore worker registered within the Vantage-POB dataset who worked offshore at least once within the year 2024. Therefore, this dataset may contain average weight values calculated from eight or more trips for many offshore workers routinely working a regular three- week- on / three- week- off rotation.

A total of 49,513 individual data entries were provided and therefore the dataset is statistically significant. Based on recent OEUK reports regarding offshore activity, the dataset is considered an accurate representation of the active offshore workforce in 2024.

As the dataset provides weights for all workers who travelled at least once during the year 2024, the latest dataset is naturally larger than the December 2022 dataset, which only listed passengers travelling offshore during that single month.

As the individual datapoints within the annual 2024 dataset are individual worker averages, it is natural to assume that offshore workers will have been both lighter and heavier during the year. The effect of data averaging is to reduce the impact of seasonal variation throughout the year, and therefore, CPOGS consultants consider the 2024 annual dataset to be a more reliable point of reference for stakeholders than the previous December 2022 dataset.

The average weight of offshore workers calculated from the 2024 annual dataset is 95.85kg, with an associated standard deviation of 15.59kg. The average weight is nominally 0.71kg less than the average weight previously calculated using the December 2022 weight data. However, as stated above, the two data sets are **not** equivalent and therefore care must be taken when comparing the results to determine trends. Figure 3.1 provides a visual comparison of the annual 2024 and December 2022 datasets, once the data sets have been normalised.

Work previously completed by CPOGS for offshore Duty Holders with large transient populations of offshore workers indicates that there is routinely a level of seasonal variation when studying average offshore worker weights. The analyses indicate that offshore personnel are often slightly heavier during the winter season and lighter in the summer season. This observed seasonal variation in weight can be as much as a kilo (increase or decrease) from the yearly average.

The same seasonal variation in human weight is also noted in multiple medical studies and papers such as the European Journal of Clinical Nutrition (EJCN) [Ref 05], and PLOS (The Public Library of Science Peer Reviewed Journal) [Ref 06].

The EJCN research paper [Ref 05] describes studies into seasonal bodyweight variation, which note that human body weight varies by 0.5kg throughout the year with a peak in weight occurring in the winter months.

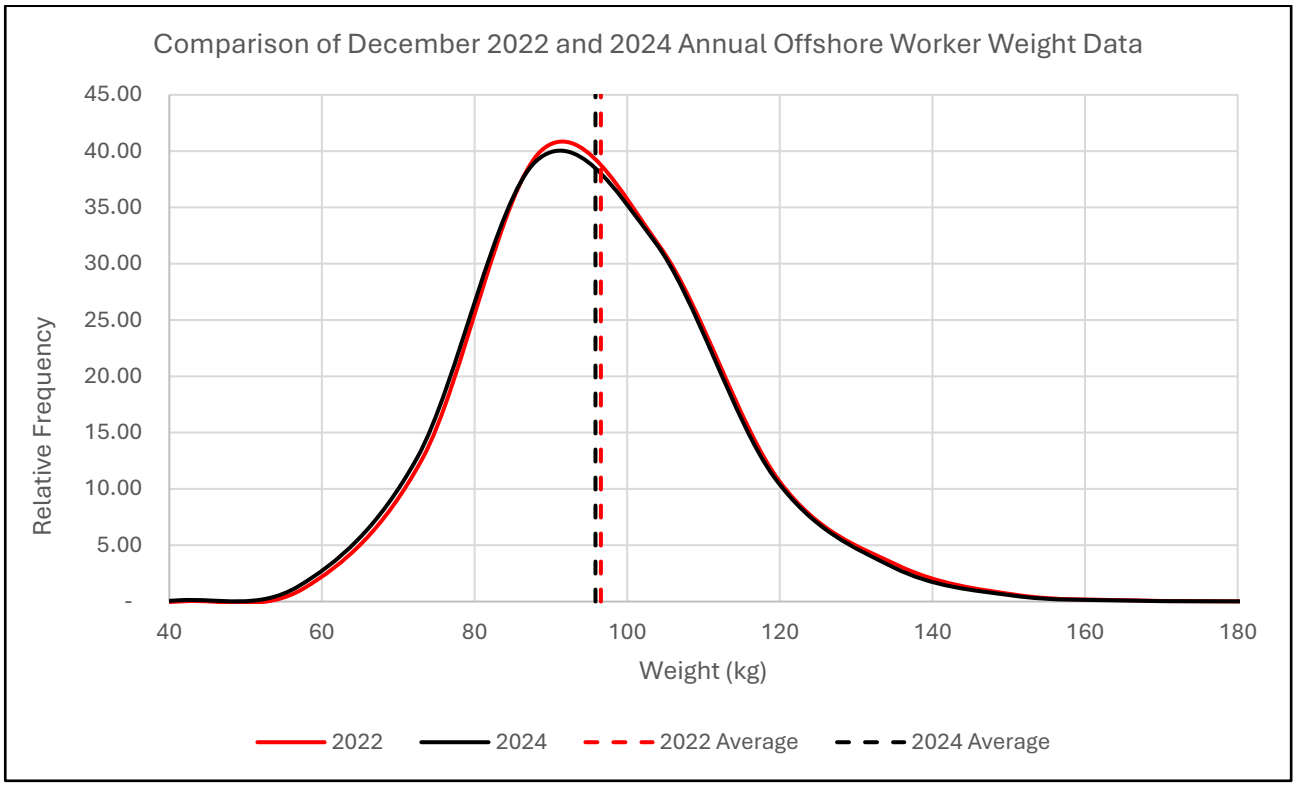

Figure 3.1 - Normalised Population Superposition for December 2022 and 2024 Annual Average Weight Distribution Datasets for UK Offshore Workers.

The PLOS Research Paper from 2020 [Ref 06] also notes that the average weight in studied populations increases by 1.35% over the Christmas period, with the weight gain taking several months to be lost.

Both the above references support the assumption that the point estimate of average weight for the offshore population from December 2022 may be between 0.5kg and 1.0kg higher than the average weight estimate would be when assessed as a complete year for 2022.

With respect to offshore operations, it is also important to note the impact of the two-layer and three-layer clothing policy for helicopter operations on mean weight estimates. The extra layer of clothing worn by offshore personnel at the Heliport in December will add 'winter weight' to the December estimate. Even a light thermal layer (added to meet the three-layer policy) can add 300 grams.

Therefore, when the effects of seasonality are considered, there appears to be little discernible change in the average weight of offshore workers in the reference period. CPOGS therefore concludes that there has been no observable increasing or decreasing trend in offshore worker weight between December 2022 and the end of 2024.

The standard deviation of weight for the offshore population in the year 2024 was 15.593kg, which is almost identical to the value of 15.588kg calculated from the December 2022 dataset. The strong agreement with respect to the calculated population standard deviation indicates that it is reasonable to use a lower value of standard definition for design weight calculations than was conservatively suggested in August 2024, which was 17kg.

From a high-level perspective, comparison of the December 2022 and 2024 annual weight data indicates offshore worker weight is presently neither increasing nor decreasing. This change in observed trend from the earlier December 2022 analysis would fit well with the industry narrative during 2023 and 2024 that offshore weight was unacceptably high (focussing offshore personnel on personal weight control) and increased use of weight loss drugs by overweight personnel generally during the period 2023 and 2024.

3.2 UK Offshore Workers – Weight Distribution Conclusions

CPOGS consider it appropriate for Duty Holders to use the revised average weight estimate of 95.85kg and standard deviation of 15.59kg described within this report (cross-referenced to the year 2024), for future design weight calculations for evacuation and escape systems. However, all future calculations based on these assumptions should be presented to the UK HSE for validation as part of any updated PFEER 5 Risk Assessment, as noted within the new UK HSE guidance document OIS 1/2025 [Ref 01].

3.3 UK Offshore Workers - Shoulder Width Distribution Considerations

The shoulder width data that has been provided to OEUK and CPOGS provides the recorded shoulder width of each offshore worker recorded in the Vantage-POB database in July 2025. A total of 104,965 individual data entries were provided and therefore the dataset is statistically significant, but it is also substantially larger than the active offshore worker population in 2025, which is estimated to be approximately 50,000 personnel.

CPOGS analysis of the original database query used to sample the data indicates that the provided dataset is representative of all UK offshore workers who have had their shoulder width measured during their offshore medical occurring between 2014 and July 2025. The July 2025 dataset is not therefore specific to 2025. Instead, it is considered representative of the last eleven years, from 2014 to 2025.

Detailed analysis of the July 2025 shoulder width dataset indicates an average shoulder width of 49.33cm with a standard deviation of 3.44cm for the whole population of UK offshore workers.

The original scope of work commissioned by OEUK to formally analyse the December 2022 dataset only addressed offshore weight and did not include analysis of the shoulder width data that was sampled at the time. However, that work has now been completed retrospectively. The December 2022 dataset indicates an average shoulder width for December 2022 passengers of 49.56cm with a standard deviation of 3.26cm.

Therefore, the difference in average shoulder width when comparing the two datasets is less than 3mm. Whilst this figure can be viewed as a small decrease, if the July 2025 dataset is taken to be representative of the period 2014 to 2025, with a mid-point of around 2020, it can also be viewed as a small increase. It is a matter of perspective.

The subsequent analysis of the 2025 shoulder width data by age group indicates that there is no significant difference in shoulder width by age group, which tends to indicate that there is no observable trend in shoulder width (either increasing or decreasing) to be anticipated in the near future.

3.4 UK Offshore Workers – Shoulder Width Conclusions

CPOGS would consider it appropriate for Duty Holders to use the revised average shoulder width estimate of 49.33cm with a standard deviation of 3.44cm for UK offshore workers (referenced to the year 2025) for future shoulder width calculations for evacuation and escape systems. There is presently no observable trend in increasing shoulder width. However, all future calculations based on these assumptions should be presented to the UK HSE for validation as part of any updated PFEER 5 Risk assessment, as noted within the UK HSE Document OIS 1/2025 [Ref 01].

3.5 Final Conclusions and Recommendations for Further Work

CPOGS conclude that the additional 2024 and 2025 datasets provided from Vantage-POB have provided reliable and useful further information regarding the weight and size of offshore workers in the UK sector. The new datasets are of a better quality than the first December 2022 dataset but are different in format, which therefore makes direct comparison of the results complex. However, the overall conclusion is that there was there no meaningful change in offshore worker weight or shoulder width from December 2022 to the end of 2024.

It is strongly recommended that the analysis of offshore worker data is repeated in future years as genuine changes in weight trends are foreseen, particularly linked to the introduction of the industry safe weight limit of 124kg for workers on UK Offshore Installations in 2026.

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