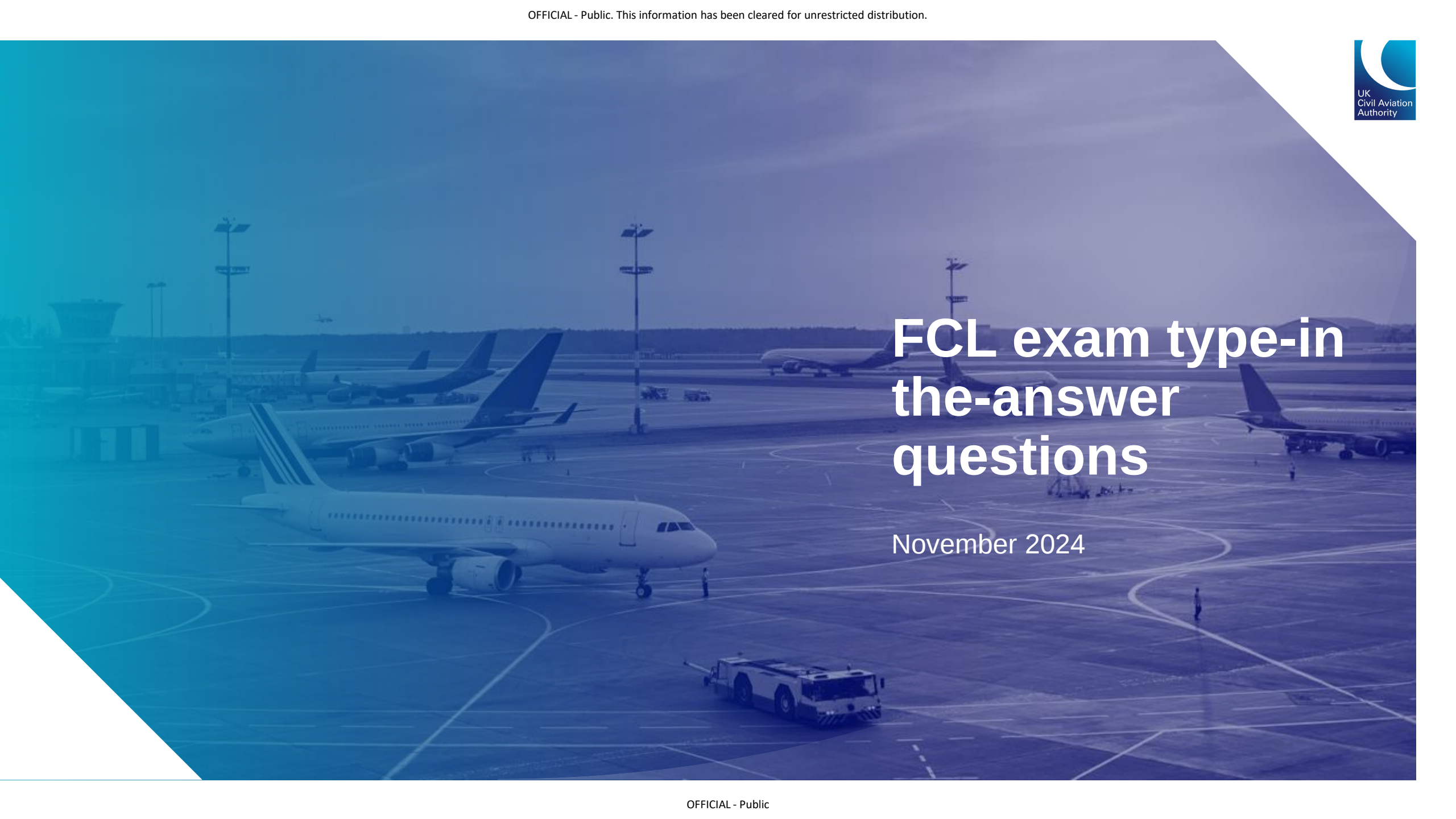




FCL exam type-in the-answer questions

November 2024

FCL exam Type-in-the-answer questions

1. Type-in-the-answer questions.
2. Why are type-in-the-answer questions sometimes used in FCL exams?
3. Different kinds of type-in-the-answer questions.
4. The required accuracy for type-in-the-answer questions and how this is determined?
5. When is an acceptable range applied?



Type-in-the-answer questions

This brief is to re-inform industry and all candidates about these questions. This presentation is for CTKIs, ATOs, TKIs, and students.

- Type-in-the-answer questions, sometimes referred to as **numeric (text) questions**, are used alongside multiple-choice questions (MCQs) in the CAA's FCL professional licence exams.
- Type-in-the-answer questions require the candidate to enter the answer using their computer keyboard. To give direction to this requirement, above the question stem, an italicised pre-amble states *'Use your keyboard to enter the answer to obtain the mark(s) for this question'*.
- If relevant, the question pre-amble also includes the required accuracy, e.g. *'answer in whole numbers'* or *'answer to one decimal place'* and directs the candidate *'Do not use spaces or punctuation. Example: 597 or 1155'*.
- Occasionally the format may be specified, such as for a specific alpha-numeric or text answer, e.g., *'in the format LLLLLX, where 'L' is a letter and 'X' an integer'*.

Why are type-in-the-answer questions sometimes used in FCL exams?

Research has shown that exams using type-in-the-answer questions alongside multiple choice questions (MCQs), address and mitigate some of the disadvantages and threats associated with exams comprising of exclusively MCQs.

The disadvantages and threats of using only MCQs include:

- **Unsafe attitude of guessing**, created by the candidate guessing when they doesn't know or are unsure.
- **Surface learning**. Research has shown that students tested through solely MCQs, are more likely to use shallow learning methods, such as rote learning, which restricts their understanding and retention, and later their abilities and application.
- **Cueing**. MCQs enable cueing, where the candidate answers the question based on cues, such as key words, or differences between numerical answers, to either choose or discount answers, rather than answering from knowledge.
- **Greater threat of compromise and increased exam production costs.**

Different kinds of type-in-the-answer questions used in FCL exams

Most FCL exam type-in-the-answer questions are numerical, where the candidate is required to enter the answer number. Where appropriate, the unit of measurement is shown to the right-hand side of the type-in box.

There are two kinds of type-in-the-answer questions:

Definitive

There is only one number that correctly answers the question.

For example, when the value is a definitive number from a regulation, or from a calculation where there is no possibility of introducing a rounding error.

Occasionally a definitive type-in-the-answer question may be in a text or alpha-numeric form, e.g. 'VORBIG' or 'ASTRO2N'.

Acceptable Range

Where the answer is obtained from a graph and/or from a calculation which could introduce rounding variation, the number answer can fall within an acceptance range.

The required accuracy for type-in-the-answer questions and how this is determined?

Definitive answers

As the answer is absolute, the definitive answer must be entered to gain the mark(s).

Acceptable range

(i) Rounding. Where a question requires the candidate to make calculations where rounding could take place, the question writer will specify a suitable correct answer range. To ensure consistency this will be subsequently checked by **two independent** SMEs during the question review cycle. Once the range has been agreed and set, if the candidate's answer falls within this acceptable range, the mark(s) are awarded.

The acceptable range covers an answer achieved when:

- the initial answer(s) is(are) retained in the calculator and used in further steps,
- an initial answer is rounded to one decimal place greater than that required by the question, and then subsequently re-entered into the calculator.

Type-in-the-answer question accuracy

Acceptable range

(ii) Graph reading. The acceptable answer range ensures that the candidate is awarded the mark(s) when they demonstrate competence in using the graph and do not make errors, such as incorrectly reading the scale(s).

The normal magnitude of the answer range from graphs is one grid box either side of the correct answer on the graph, or where the grid boxes are unusually large or small, +/- 1.5mm, to give a correct answer range of 3mm on the scale, e.g. CAP698, Figure 2.1, the minimum range set would be 200ft, one grid box or 100ft either side of the correct answer.

The range set is greater for graphical questions which involve interpolation between guidelines in different carpets on a graph, when the input values do not sit precisely on the gridlines or guidelines.

The final acceptable range is always determined and agreed by the two reviewing SMEs.

Type-in-the-answer question accuracy

Acceptable range

(iii) Chart reading. The answers for distances and bearings obtained from a chart or plate may be definitive or have an acceptable range.

Definitive answers are those obtained by chart inspection.

When a distance or bearing needs to be measured by the candidate, an acceptable range is applied. Note: distance should always be obtained from the latitude scale and bearings measured close to mid-track. The final acceptable range is determined and agreed by the two reviewing SMEs.

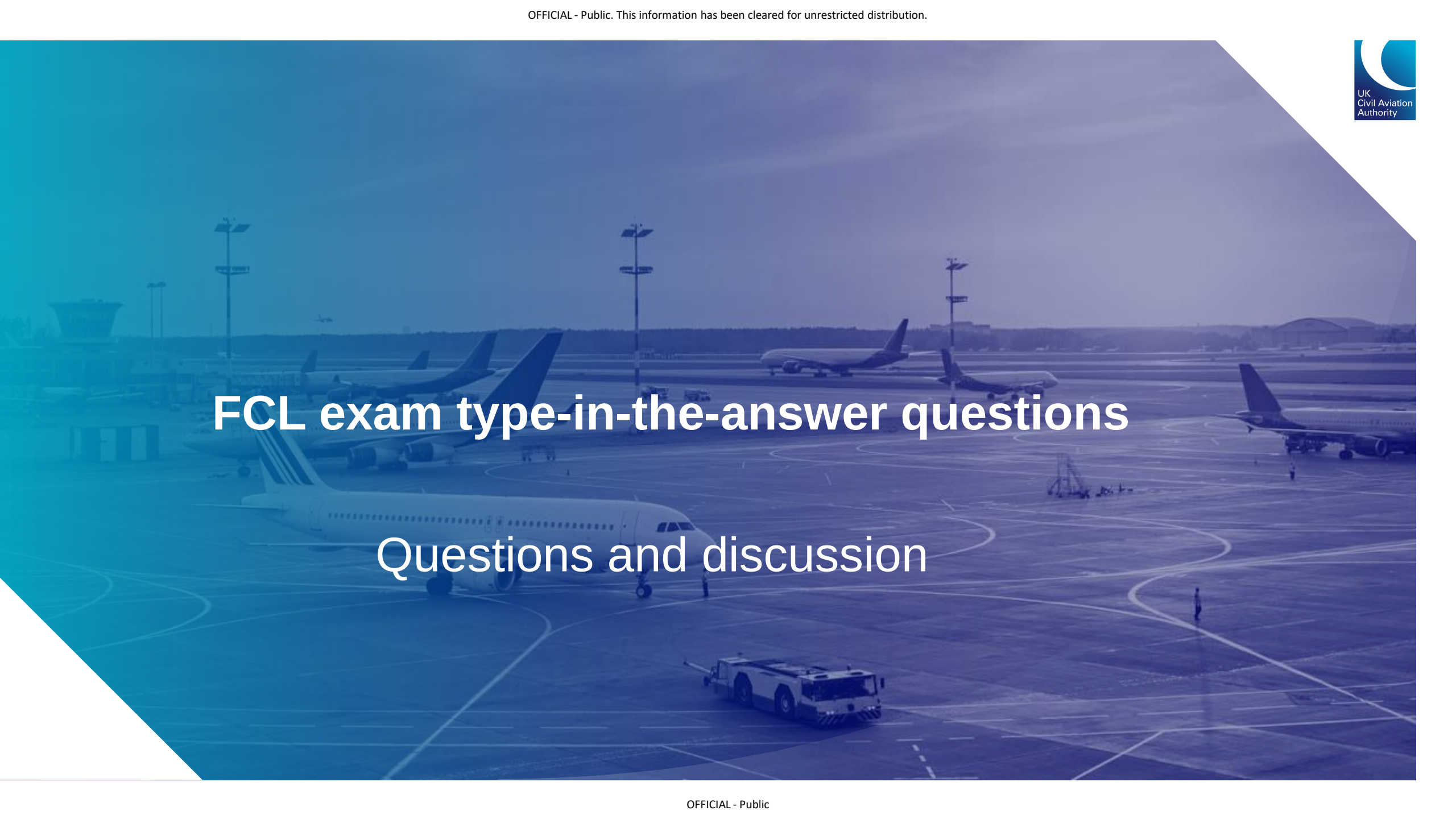
In either case, the candidate should obtain the mark(s) when they are competent in their chart work and do not make errors.

When is an acceptable range applied?

Candidates should be reassured that whenever a type-in-the-answer question is not definitive, an appropriate acceptable range **will be applied** during marking.

It is recommended that candidates do **not** write comments during the exam to show how they calculated their answer, as this is reducing the time available to answer other questions, potentially disadvantaging themselves. Comments are not read when the exam is electronically marked, only for question monitoring and review.

The CAA is considering adding further guidance to the candidate portal about type-in-the-answer questions and/or adding a statement to each question, e.g. '*A range has been set for the correct answer*'. With the latter option, type-in-the-answer questions with the statement would have an acceptable range set and those without the statement would be definitive, a transition period would be likely.



FCL exam type-in-the-answer questions

Questions and discussion