GUIDE for

Civil Aviation Authorities, Airlines, ATS providers & other decision-makers

TEA

TEST OF ENGLISH FOR AVIATION

What is TEA?

TEA has been designed as a formal licensing proficiency test for pilots and air traffic controllers who need to meet the English language ICAO Language Proficiency Requirements (LPR's). It is approved by many national aviation authorities including the UK CAA.

Fairness

TEA is supported by extensive experience and expertise (both linguistic and operational), by a substantial programme of research, and by strict procedures in item design, test delivery, administration and security, examiner training and continuous monitoring of performance.

For the purposes of satisfying the ICAO LPR's, it is unfair if a test requires any other skills than English language speaking or listening.

TEA is <u>only</u> a test of speaking and listening

TEA is not:

- a reading and writing test
- a memory test
- a test of operational procedure
- an intelligence test
- a logic test
- a test of keyboard skills

Rather than using an automated system of test delivery, TEA is conducted on a one-to-one basis. ICAO Document 9835 (6.7.10) states:

"Direct, communicative proficiency tests of speaking and listening abilities are appropriate assessment tools for the aviation industry and will allow organizations to determine whether flight crews and air traffic controllers are able to meet the ICAO language proficiency Standards".

Design Principles

The test design process began in September 2004.

The test design team (composed of both operational & language testing experts) produced general design principles.

The test should:

1. Be suitable for trained pilots and ATCO's

2. Elicit language to assess ICAO levels 1-6

3. Test plain English (in an Aviation context) but not Standard Phraseology

4. Test language but not operational procedure

5. Allow production of multiple and standardised versions & be globally-applicable

6. Be sufficiently secure for this high-stakes environment

7. Be relatively economic to administer

1. Suitable for trained pilots and ATCO's

Appendix B of Document 9835 lists the communicative language functions associated with aviation. The vast majority of these functions relate to both pilots and air traffic controllers. Given that the underlying aim of the LPRs is that both pilots and ATCOs shall communicate effectively in both routine and non-routine situations it seemed appropriate to produce a test suitable for all personnel.

It is true that different types of pilots and controllers perform different roles, and might occasionally have different language needs. However, it was felt that aviation safety could best be promoted by covering the general language needs of the 2 professions for 2 main reasons:

Producing a test specifically for en-route controllers, for instance, would only be of use if the candidates remained in that position for the period that their test scores were valid. If, in the three years after the language test, they moved from en-route to ground control (as is often the case) their language score might not be appropriate.

Through trialling and evaluation it became clear that the narrower the language context and task, the more likely it is that procedural language, and not plain English, is elicited.

2. Elicit language to assess ICAO Levels 1-6

Stakeholders from the industry had asked for a test which could assist in training needs analyses and the test designers wanted to encourage positive washback as far as possible. If stakeholders were to design and implement effective training programs they would need an accurate assessment of the level of their personnel. It would have been unhelpful to design a test that only placed candidates at levels 3 and 4.

3. Test plain English (in an Aviation Context) and not Standard Phraseology

ICAO Document 9835 makes it clear that, whilst standard phraseology is fundamental to aviation safety, there are many non-routine situations that require other communication strategies. The ICAO Rating Scale was clearly designed to assess plain English, rather than phraseology (for example by measuring paraphrase, idioms, register). ICAO elaborated on this point in June 2006:

"Just as testing of ICAO phraseology cannot be used to assess plain language proficiency, neither can English language proficiency tests be used to test ICAO standardized phraseology.

It is acceptable that a test contain a scripted test task in which phraseology is included in a prompt. The test task may be used as a warm up or an ice-breaker and elicit a plain language response from the test taker."

The testing of Standard Phraseology needs to be assessed by operational experts using a different set of criteria (not the ICAO Language Proficiency Scale).

The test designers also wanted to ensure, as far as possible, that the test measured only language proficiency, rather than intelligence, logical thinking, or operational knowledge.

"Plain language can be thought of as non phraseology language used when standard phraseology is not appropriate. Teaching and testing standardized phraseology is an operational issue, not a language proficiency issue." ICAO Cir 318 4.1.2.1 & 4.1.2.3

4. Test language but not operational procedure

If a test includes exercises or tasks where the candidate believes there is a correct operational / procedural answer then this will impact on the language he produces. The purpose of TEA is to elicit a sample of plain English which can be assessed using the ICAO descriptors. The purpose is not to test operational competence.

5. Allow production of multiple and standardised versions & be globally-applicable

The scale of the testing requirements indicated that the test would be delivered in multiple locations to a large candidature over a number of years. Live test materials have a limited shelf life, and need to be replaced regularly to maintain the confidentiality of materials (and by extension, the reliability of results). The tasks need to be standardised to ensure that all sets are of a similar level of difficulty and elicit similar language.

6. Be sufficiently secure for this high-stakes environment

This aspect of the test design related more to the systems of administration and delivery than task design but was still a factor that the test designers had to consider. With aviation safety and peoples' livelihoods at stake, there is always the risk of candidate collusion or cheating. This is reduced by having multiple versions of the test (see above), and by creating a bank of materials that can quickly replace any versions of the test if they are compromised (for instance if they were stolen from an exam centre). It also influences the method of test delivery. Initial explorations into the possibility of computer-based tests were quickly discarded because these would not be secure enough. Further information relating to the security of TEA is given later in this Guide.

7. Be relatively economic to administer

The overriding concern of the test designers was to help promote aviation safety through the construction of a valid, reliable testing system. The key notion however is "Affordable Safety" – there is always a trade-off between Safety and Cost. The test itself was only part of the solution to the problems of poor communication within the industry – indeed, in many ways, was only the start of the solution. Stakeholders would need to invest heavily in appropriate training programs in order to help their personnel achieve ICAO level 4. It was critical then that the test offered an affordable means of assessing personnel, in order that airlines and ANSPs could maximise their training resources.

What skills and language domains are assessed?

- Language that is wholly assessable according to the ICAO Descriptors

- The ability to use the ICAO Dominant Communicative Functions

- Language related to the ICAO Priority Lexical Domains

TEA elicits language assessable by ICAO Rating Scale. Therefore, the test has to:

- Refer to familiar, common, concrete and work related topics

- Refer to unfamiliar work-related topics

- Expose candidate to a wide variety of international accents

- Expose candidate to a linguistic or situational complication or unexpected turn of events

- Allow candidate opportunity to demonstrate discourse management strategies

- Give opportunity to display knowledge of idiomatic expressions, register & to speak at length

Elicits `Dominant Communicative Functions'

From ICAO's list of Dominant Communicative Functions, Doc 9835, Appendix B, the following language functions were identified as crucial to pilot-controller communications:

Provide information	*Reassure*
Request information	*Give orders*
Express opinion	*Give approval and permission*
Elaborate	*Request*
Explain	*Offer*
State preference	*Advise*
Express needs / wishes	*Encourage*
Speculate	*Express misunderstanding*
Describe	*Request repetition*
Compare	*Summarise*
Predict	*Express concern*
Check, clarify, confirm understanding	

Elicits language from ICAO Priority Lexical Domains:

From ICAO's list of Events and Domains, Doc 9835, Appendix B, the following broad topics were identified as crucial to pilot-controller communications:

ATC and ground

Fire and Smoke

Health

Interference

Technical

Human

Weather and Environment

Work-related context

ICAO has recommended that any testing solution should be set in aviation, work-related context.

"Interpretation of 'work related context' can be either "narrow" or "broad". Both interpretations are valid". ICAO Cir 318

"The test should be specific to aviation operations. The "broad view" would elicit samples on topics occurring in radiotelephony without resorting to replicating radiotelephony. These could be of a general piloting and controlling nature". ICAO Cir 318

TEA designers have been careful to avoid too "narrow" an interpretation of 'work related' in order to prevent the candidate becoming overly-focused on the correct procedural, operational solution to a question or situation (at the expense of producing the required valid language).

What is the format of the test?

The format of the 25-30 minute test:

LISTEN TO AN
EXAMPLE OF A
LEVEL 4 CANDIDATE
here

- Part 1: Work-related Interview

- Part 2: Interactive Comprehension

- Part 3: Description & Discussion

The test format and task-types are standardised.

Every candidate is given an equal opportunity to demonstrate his / her language proficiency.

Test tasks develop in complexity as candidate progresses through the test.

Part 1 – Interview

- Is *Direct* (a face to face discussion between the examiner and the candidate)

- Contains set questions based on common, concrete and work-related topics

- Lasts 6½ - 8 minutes

- Initial questions serve as a 'warmer'; topic-based questions are more complex

- Gives the examiner initial impressions of the candidate

Example questions (for a candidate who is a pilot):

1. (Provide Information) Could you tell me about your job?

2. (Explain) Why did you want to be a pilot

3. (Express Opinion) Is a pilot's job important?

4. (Predict) How will your flying change in the future?

Now I'd like to ask you some questions about **Aviation Communication**:

5. (Provide information) Before take-off, what do pilots need to consider and discuss about the flight?

6. (Express misunderstanding) If you cannot understand an ATC message, what would you do and what would you say?

7. (Speculate) When communicating in emergency situations, what extra problems could there be?

LISTEN TO AN EXAMPLE OF A LEVEL 4 CANDIDATE here

Part 2: Interactive Comprehension

- Is *Semi-direct* (audio recordings are played from a CD)

- The candidate has no eye-contact and no facial cues (an ICAO recommendation)

- The candidate responds to a variety of international speakers of English (*an ICAO recommendation*) in non-routine/emergency situations

- Simulates real-life communication

- The recordings are produced in collaboration with operational experts (in order to ensure authenticity)

- The candidate has a time limit in which to respond

- Lasts 7 - 10 minutes

'Live' Comprehension (as opposed to a multiple-choice type of listening exercise where there is no opportunity for the candidate to interact and ask questions) allows for:

- the demonstration of spontaneous discourse management strategies

- the demonstration of proficiency across all six language profiles

Part 2A

Includes 6 aviation-specific recordings.

- Candidates report back to the examiner on what they hear and who they believe was speaking (i.e. pilot or ATC)

Examples:

1. *"There has been a crash on the runway. You must go around." (ATC)*
2. *"Police have boarded our plane with sniffer dogs. We're going to be delayed." (Pilot)*
3. *"We're diverting to our alternate because we experienced windshear on our final approach" (Pilot)*
4. *"You are approaching restricted airspace. Do you have permission to enter?" (ATC)*

Part 2B

Includes 4 aviation-specific recordings.

- *Are longer than Part 2A recordings and contain more specific information*
- *Candidates may take notes and are asked to provide as many details as possible*

Examples:

1. *"Copied your message about limited visibility. We've entered thick white fog. We've lost all visual contact with the field. Can you give me vectoring for runway zero niner?"*

2. *"Tower, we very nearly crashed into the luggage tractor that just crossed in front of us on taxiway papa. The driver didn't hold at crossing point charlie. Can you pass that onto ground services please?"*

LISTEN TO AN EXAMPLE OF A LEVEL 4 CANDIDATE here

Part 2C

Includes 3 recordings in more general situations.

- Unexpected, non-routine situations

- The candidate is required to ask questions and is then invited to give advice

- This part of the test includes problem-solving (as recommended by ICAO)

- The candidate has a time limit in which to respond

- Avoids reference to operational procedure

- Categories of questions:

Human, Environmental, Health, Technical

Examples:

1. "We need some help… the radio isn't working."

2. "We have a problem… there's a strong smell in the cabin"

3. "We have a situation… a passenger's health is not good"

LISTEN TO AN EXAMPLE OF A LEVEL 4 CANDIDATE here

Part 3: Description & Discussion

- Candidates are shown a picture and are asked to describe it with as much information as possible. Candidates have a maximum of 40 seconds to speak
- Candidates are then shown a second, related picture and are asked scripted questions about it
- Candidates are then asked to compare the two pictures by responding to scripted questions from the Examiner. The scripted questions make the task interactive.
- Candidates then take part in a discussion of general aviation topics related to the set of pictures
- Overall, the part lasts 9 – 10 minutes

Example questions following picture description:

"Let's now discuss emergency situations".

(Describe) "When is a situation an emergency situation?"

(Explain) "How might a scenario like depressurisation be caused?"

(Advise) "How would you suggest the aviation industry eases the anxiety of some passengers"

Summary of Format
- Part 1 allows candidate to 'warm up' on familiar work-related topics, following language testing protocol.
- Part 2 introduces listening comprehension & short-answer responses to non-routine & unexpected situations.
- Part 3 allows candidates to demonstrate their ability to interact and produce longer turns through extended discussion of unfamiliar but aviation-related situations

Delivery

- Examiners use a standardised script:

  "direct tests require particular attention to the standardization of design… to avoid any bias that may inadvertently arise due to the human element" ICAO Cir 318 3.7.3

- Direct & semi-direct delivery methods are employed

- TEA is delivered to candidates individually (to avoid possible status / hierarchy issues caused when examining more than one person at the same time)

Examiners (interlocutors and raters)

- Must be either native English speakers or possess a formal qualification equal to at least ICAO Level 6 or IELTS 7.0 Overall (with a minimum of 7.0 in the Speaking & Listening section)

- Receive intensive training in conducting tests (interlocutors)

- Receive intensive training and certification in applying the ICAO rating scale to appropriate language samples

- Must be rated 'satisfactory' before they are allowed to examine

- Are subject to ongoing monitoring procedures

- Must re-certify every 2 years

- Agree to adhere to ILTA Code of Ethics

How are scores for the 6 ICAO profiles generated?

- The rater considers all aspects of the assessment & awards the most appropriate band scores in each profile based on the candidate's performance

- The overall mark is determined by lowest band score (2.8.4, ICAO 9835)

- The scores are logged on a secure database

- All TEA tests are recorded and securely archived. This allows for assessment in both real time and subsequent to the test

- All TEA Examiners are subject to monitoring. When a disagreement occurs over the overall score between the examiner and Monitoring Examiner, the test is referred to a TEA Senior Examiner for his/her judgement

- TEA Senior Examiners are native speakers with extensive examining and examiner-training experience (including of other, external examinations), evolved from experience gained with original ICAO-supported PRICE-SG group, and meet for standardisation sessions every two months. TEA Senior Examiners work closely with non-native and operational raters in standard setting

Appeals Procedure

Candidates who are not satisfied with their result may request that it is remarked by TEA Senior Examiners. Appeals must be made to the centre in writing no later than one month after certificates have been dispatched. Candidates must return their certificate to the centre and pay the full test fee. If the appeal is successful, a new certificate is dispatched and the candidate receives a refund of the appeal fee. If there is no change to the Overall Score, the centre reissues the original certificate and the candidate does not receive a refund.

Test Security

Security is a major issue in the high-stakes environment of aviation testing. There are a number of potential threats to the security of any test. In particular:

- Materials being leaked / lost
- Impostors taking the test on behalf of others
- Fraudulent certificates

TEA Security features

TEA has a number of security features designed to reduce these risks. Candidate applications include biographical data, photos, signatures and passport numbers which are checked prior to the test.

To reduce the risk of materials being compromised, there are multiple versions of the test (to make it more difficult for candidates to prepare answers). All test materials are stored securely at test centres and inventories are kept updated. Candidates are not permitted to take any electrical equipment, including mobile phones, into the test, to reduce the risk of the test being recorded.

Test day security

Immediately before a candidate takes the test, the examiner checks the passport and biographical data and photographs the candidate. This photograph includes the date and time and appears on the certificate. (An impostor would not only have to fake identification but also have to change their appearance)

Certificates

Certificates are produced centrally and contain a number of security features to reduce the risk of forgeries:

- candidate's photo (taken at the time of the test)
- a unique certificate number containing random numbers
- micro-printing
- tinted colours
- a verification stamp
- the signature of the Director of Testing

Security features

- Each TEA test centre has a TEA Administrator who is responsible for the safe storage of test materials (a "2 key" policy)

- Only the TEA Administrator has access to the TEA database

- All testing materials must be signed out and signed in by examiners

- Candidates are photographed immediately before the test begins. This photo is uploaded to the TEA database and is subsequently printed on the TEA certificate

- The candidate's biographical data (name, passport number, date of birth etc) are checked immediately before the test begins and this information is subsequently printed on the TEA certificate

- The certificates contain measures to reduce the risk of counterfeit

- TEA certificates are all printed in one central location (i.e. TEA certificates are not printed in test centres)

- A TEA certificate verification website (candidates, airlines, ATS providers, CAA's and other stakeholders have access to an online certificate verification programme - the certificate number together with some of the candidate's biographical data need to be entered in order to reveal the candidate's photo and test scores)

TEA Examiners and Reliability

TEA tests are only delivered by certified TEA Examiners. All TEA Examiners hold relevant oral assessment qualifications combined with specialist linguistic and / or aviation operational expertise and are trained and certified by Senior TEA Examiners.

Initial minimum requirements are:

- Minimum IELTS 7.0 Overall, including 7.0 in Speaking & Listening (guided by EANPG, Appendix J & K (30 Nov 2006)) or equivalent
- Considered capable of the required level of professionalism and of adherence to ILTA Code of Ethics

New Examiner Training

Prospective TEA examiners undergo a training course, and must certify before they are allowed to examine. During the training program, the ICAO LPRs are considered in detail and new examiners are given extensive training with recordings of TEA tests. Prospective raters then work individually under exam conditions and rate 6 TEA tests. Only if they meet the standard required can they become TEA raters.

Prospective interlocutors follow a training programme analysing good and bad

practice in test delivering and are required to conduct two tests to the required standard before they can become TEA interlocutors.

Once TEA Examiners have been certified following their successful training process, ongoing measures are taken to ensure that existing standards are maintained.

Examiner Monitoring and Reliability

The test design team has designed a checklist – the TEA Monitoring Feedback Form - for monitoring the conduct of the interlocutor and the reliability of the rater for this purpose.

Examiner monitoring consists of these stages:

1.   100% Initial Monitoring

2.   Ongoing Monitoring

3.   Continuous Feedback and Support from TEA Ltd.

4.   Annual face-to-face or self-access standardisation

5.   Re-certification every 2 years.

Additionally, non-native examiners are responsible for maintaining their English proficiency levels in speaking and listening to the required standard. Test monitoring will reveal any problems in this respect, and examiners may be asked to take a formal test of English if their level has dropped below the required standard.

Standardisation

Where constraints (geographical, time, etc.) restrict face-to-face standardisation, a self-access standardisation task will be sent to Examiners within the two-year certification period. The task involves listening to audio recordings of TEA Tests and reading performance rationales.

Additionally, all Examiners complete an online interlocution standardisation task.

Although the tasks are important and essential, it will not affect the status of a TEA Examiner.

Re-Certification

Re-Certification takes place every two years. As in the initial certification process, Examiners must prove they can rate 6 TEA tests to the required standard. Should the Examiner fail to do so, he/she may apply for re-training for TEA examining.

Reliability

Increased reliability is supported by:

- multiple test versions

- a standardised test rubric

- evaluation of consistent performance in design & trialling

- rigorous examiner selection & training

- 100% initial performance monitoring of examiners

- consistent ongoing monitoring & support of examiners

- standardisation through inter-rater reliability analysis

- standardisation through intra-rater reliability analysis

- multiple security aspects

Statistics

KEY NUMBERS

2005	**48,073**	**160**
The year TEA testing began	TEA tests conducted	Current certified TEA personnel
25	**110**	**4.28**
Countries with TEA test centres	Nationalities tested	Average overall result

OVERALL RESULT

Level 2 1.8% of candidates

Level 3 14.4% of candidates

Level 4 46.1% of candidates

Level 5 29.3% of candidates

Level 6 8.4% of candidates

AGE OF CANDIDATES

< 20 years 1.3% of candidates

20-29 years 20.2% of candidates

30-39 years 27.5% of candidates

40-49 years 29.8% of candidates

50-59 years 17.1% of candidates
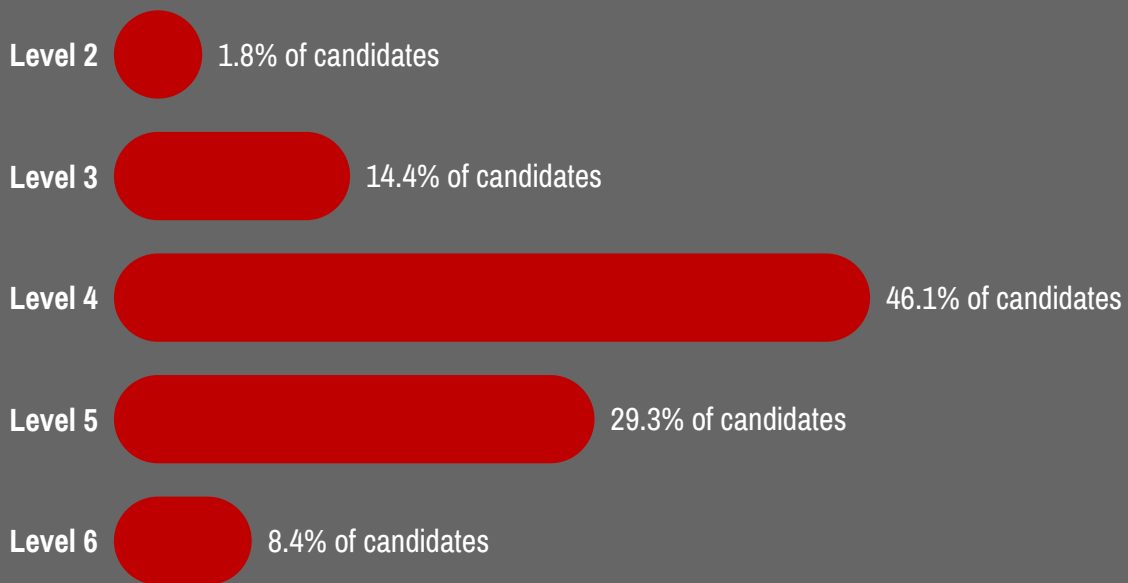
>59 years 4.1% of candidates
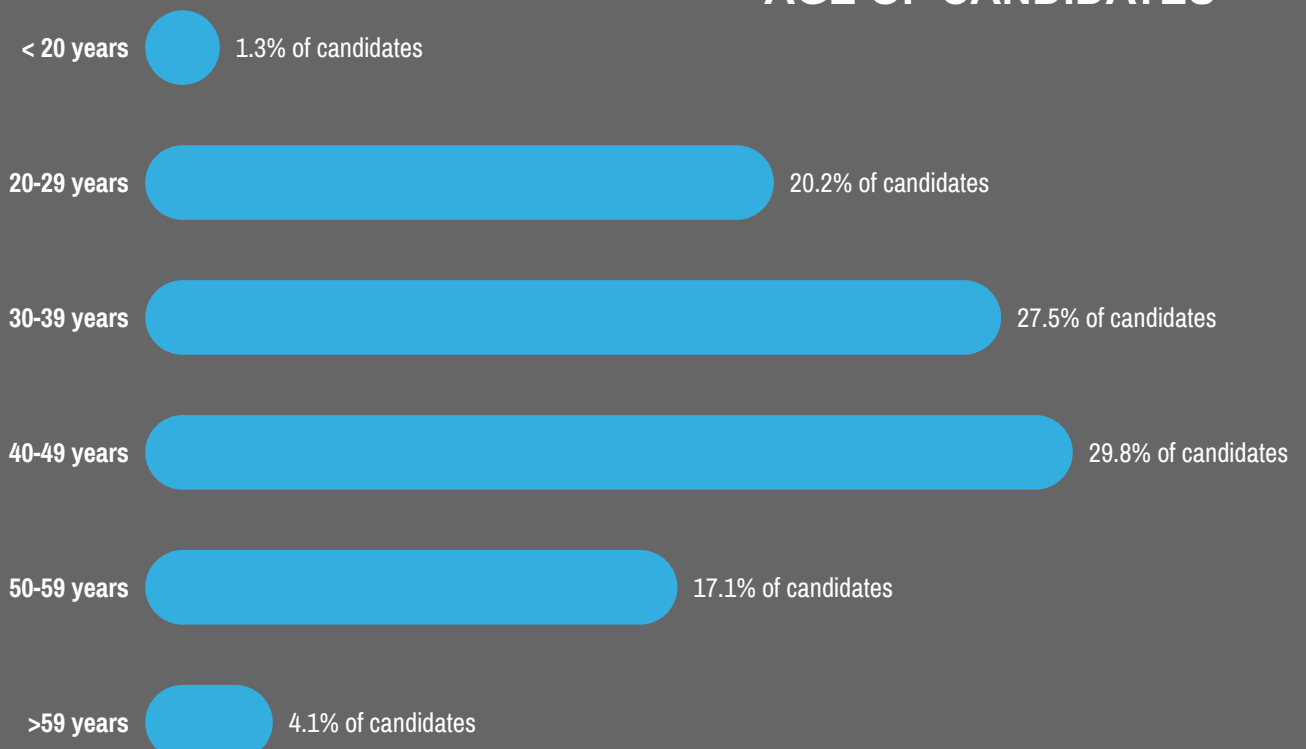
OVERALL RESULT BY AGE OF CANDIDATE

Age	Result
>59 years	4.0
50-59 years	4.0
40-49 years	4.3
30-39 years	4.3
20-29 years	4.3
<20 years	4.1

RESULTS BY PROFILE

Profile	Result
Overall Result	4.3
Interactions	4.7
Comprehension	4.5
Fluency	4.6
Vocabulary	4.6
Structure	4.5
Pronunciation	4.7
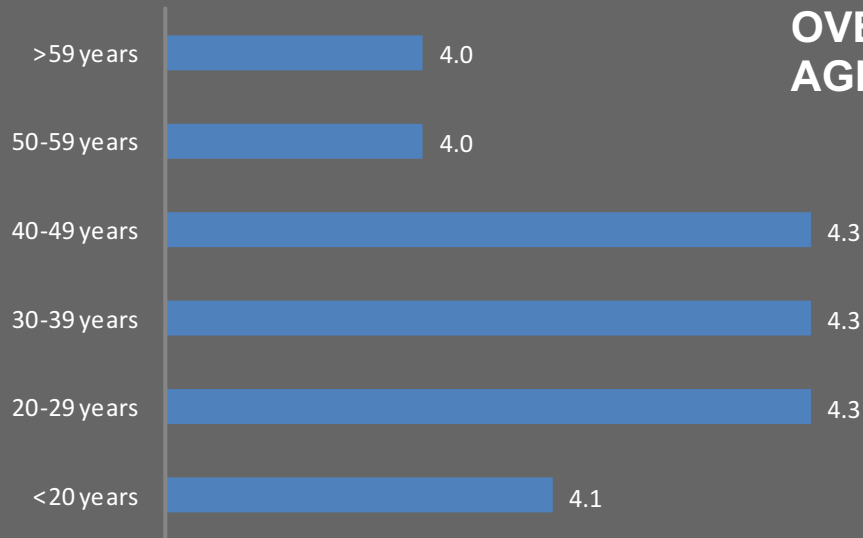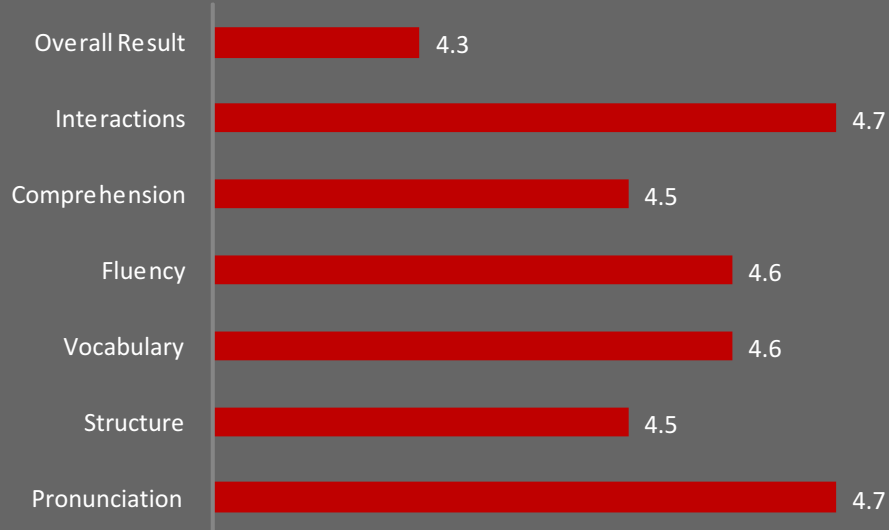
CANDIDATES BY PROFESSION

Profession	Percentage
Transport pilot (aeroplane)	34.8%
Professional pilot (aeroplane)	30.4%
Private pilot (aeroplane)	7.3%
Pilot - student	5.8%
ATCO - approach	5.5%
ATCO - en-route	5.3%
Helicopter pilot	4.8%
ATCO - aerodrome	4.7%
ATCO - student	1.1%