

## PLENARY SESSION 3

### Summary of breakout sessions by four moderators

#### 1. The Test of English for Aviation (the TEA test)

Session presented by **Ben Rimron** (Mayflower College)

Session reported by **Fiona Robertson**

The Test of English for Aviation (the TEA test)

This is a proficiency test of communicative competence of plain English in an aviation context for trained pilots and controllers. It tests the skills of speaking and listening. It takes place in the form of a one-to-one interview with two interactive listening comprehension sections.

There is a warm up work-related interview (Part 1) lasting 3 or 4 minutes, followed by the comprehension sections (Parts 2A and B) using CD recordings or non-routine situations with different accents.

The first section covers 20 situations and the candidate's task is to explain after each recording, what is happening.

The second section consists of 8 recordings concerning different, short, unusual and problematic situations. The candidate must ask for clarification or more information about each situation and after the reply, make a suggestion of help to find a solution.

Part 3 is a discussion using 2 aviation related pictures. The candidate describes the pictures and the examiner asks more probing questions designed to allow the candidate to produce longer statements and to shine, if possible.

The test lasts 20 minutes.

TEA elicits enough language to be assessable with the ICAO rating scale. A study has been made to check that the test elicits the functions itemised in the ICAO documentation. For this study, the 116 functions were grouped under 25 headings (e.g. orders) and using checklists a chart was made of the occurrence of these functions. It was thus shown, for example, that "clarifying" was used more at lower levels while "summarising" was more frequent at the higher levels.

Attention was also paid by the test developers to eliciting language that falls within the ICAO defined priority lexical domains.

This is a test of plain English in an aviation context, not of radiotelephony phraseology. It tests language, not operational procedures.

The standardisation and therefore the reliability of the interview is enhanced by having a standardised script and rubric which the examiners follow. There are multiple test versions. Each test is digitally recorded and the tests are regularly monitored.

There is rigorous examiner selection – examiners must have a minimum of IELTS level 7. They have intensive training and on-going monitoring, with re-certification every 2 years. They respect the ILTA code of ethics.

Intra- and inter-rater reliability studies are conducted, and a concurrent validity test was performed when the school asked the teachers of future candidates to place their students on the ICAO rating scale. Comparison with the exam results subsequently yielded a very high correlation coefficient.

The assessment is by profile marking using the 6 scales. But for listening part 2A (the 20 short recordings) a quantifiable mark is given and a listening band-scale ceiling thus established.

Scores are logged into a secure data-base by an administrator. The test recordings are archived.

A photo of each candidate is taken immediately before the examination begins and this photo then appears on the certificate (which has numerous security features to reduce the risk of counterfeit).

For further information about TEA click [here](#):

<http://www.maycoll.co.uk/aviation-english/tea.html>

## **2. The Royal Melbourne Institute of Technology (RMIT) English Language Test for Aviation:**

### **RELTA**

Session presented by **Michael Kay** of RMIT

Session reported by **Marjo Mitsutomi**

The purpose of the aviation English proficiency test developed by RMIT is to determine whether aviators have attained the required ICAO English proficiency level in listening and speaking. Pilots and controllers are examined via different test forms, meaning that the two groups have separate tests although they are very similar in structure.

The focus of the test content is on radiotelephony (RT), phraseology and plain language. Knowledge of aviation content is required although not assessed. The test is advertised as being useful for licensing purposes at which stage the candidates are already skilled at the craft they are pursuing. It must, then, be noted that the RELTA is inappropriate for ab initio trainees whose skill base in the profession is inadequate to respond appropriately and correctly to the presented scenarios. Most native speakers without aviation content training would perform poorly in this test. The RELTA is a good example of a test of English for specific vocational purposes (ESP).

The test measures all six strands of the ICAO standard. Both forms of the tests consist of listening and speaking sections. The listening test is computer-delivered to multiple candidates at the same time. The areas tested are RT phraseology in routine situations, non-

routine RT communication mixed with plain English, and lastly an interview in plain English. The speaking test has three parts: (1) routine phraseology, (2) non-routine phraseology mixed with plain English, and (3) a face-to-face interview in plain English with an interlocutor present (a live examiner, in other words). The last area requires the test takers to produce linguistically more complex language than the other two sections. Air traffic controller candidates have the additional component in their speaking test that they are required to be able to use appropriate language in three specifically distinct context, namely enroute, tower and approach.

The test design rationale, and correctly so, was based on the necessity to assess proficiency in English language usage in aviation specific situations. The ICAO standard and the scale were carefully analyzed at the onset in order to identify the language skills, both functional and notional, to guide the test writers in developing appropriate linguistic and applicable work-related prompts for the test takers. The focus of the test developers was on creating meaningful and authentic tasks which maximize the opportunity for engagement in the English language. The test development team decided that that the work-related language challenges with which pilots and controllers are faced are distinct enough to warrant a separate test for each group.

The RELTA currently has several different forms of the test for both pilots and controllers. It took the team at least two years to develop the first version, beginning with the thorough study of the ICAO specifications, followed by the prototype and its refinements, numerous triallings, creation of the test bank subject to constant review and monitoring of the items, until its first publication a few years ago. The test was developed with the assistance of target users, subjects matter experts, and other test development experts so that RMIT states with confidence today that the test is valid and reliable.

Mr. Kay's assessment of the RELTA is that it meets the standards for best practice in aviation English testing. The reasons are that it has been shown to be valid and reliable, it is authentic and interactive, and it is fair and practical. If RELTA is chosen as the preferred instrument of testing aviation English proficiency, the company highlights the following on its website:

- RELTA is designed in response to the ICAO Language Proficiency Requirements
- RELTA is delivered locally by accredited examiners
- RELTA is assessed by accredited raters
- RELTA assesses proficiency according to the ICAO Language proficiency Rating Scale
- Validity and reliability of RELTA is rigorously checked
- RMIT trains and accredits raters and examiners

It was very evident to Mr. Kay's audience that test development is serious business; it takes the input of several authorities in various areas of expertise, and it is very time-consuming, requiring the full-time energy and knowledge base of several individuals whose primary job description is nothing but test development and validation.

### **3. The Eurocontrol English Language Proficiency for Aeronautical Communication (ELPAC) test**

Sessions presented by **Adrian Enright & Magdalena Vecerova**

Sessions reported by **Henry Emery**

## **Summary**

ELPAC (English Language Proficiency for Aeronautical Communication) is an English language proficiency test developed by EUROCONTROL for Air Traffic Controllers to meet language proficiency requirements for both ICAO and the European Commission's Directive on a Community Air Traffic Control Licence. For further information, visit [www.elpac.info](http://www.elpac.info).

Adrian Enright (ELPAC Project Manager, EUROCONTROL), accompanied by Magdalena Vecerova (Language Testing Consultant to EUROCONTROL) led breakout sessions on Thursday 8<sup>th</sup> and Friday 9<sup>th</sup> May on the design, development and administration of the ELPAC Test.

The presentations on the two days covered the following areas: Thursday 8<sup>th</sup> May

Rationale  
Test Development  
Design  
Trialling  
Evaluation  
Validation  
Dissemination  
Friday 9<sup>th</sup> May

Rationale  
Paper 1: Listening comprehension  
Paper 2: Oral interaction  
Maintaining Standards  
Updating Software  
Dissemination

What follows is a selection of the key questions posed by the session participants and the responses from Adrian and Magdalena, the breakout session leaders, over the two days. The questions are grouped according to the following three themes:

1. Test content and specification
2. Paper 1 (Listening Comprehension)
3. Paper 2 (Oral Interaction) delivery and rating

## **Questions and answers**

### **1. Test content and specification**

*Q: How did the ELPAC development team specify the content of the test?*

*A: Language functions were selected on the basis of frequency and importance in aeronautical communications. Although the ELPAC development team benefited from previous*

experience with the PELA test, the ELPAC test specifications went through a number of drafts and revisions as a result of debate and discussion between subject matter experts and linguists before final test specifications, including content, were produced.

*Q: Does ELPAC test phraseology?*

A: ELPAC doesn't test phraseology per se. Phraseology is required as receptive and productive language in order to fully test operational language proficiency in the context of radio-telephony communications. Phraseology is taken as an integral part of aeronautical communication and thus in Paper 1 (Listening Comprehension) candidates listen to recordings of routine and non-routine situations. These recordings contain both phraseology and plain language. In Task 1a of Paper 2 (Oral interaction), candidates have to demonstrate proficiency in the appropriate use of standard ICAO phraseology, switching between standard ICAO phraseology and plain English, making an appropriate response to a pilot message, resolving misunderstandings, dealing effectively with the pilot/controller relationship, negotiating a developing unusual situation, making a verbal report in plain English. A candidate who fails to comprehend recordings in Paper 1 or demonstrate proficiency in Task 1a of Paper 2 will fail to be awarded a level 4 overall, however strong the performance elsewhere in the test.

*Q: Why does ELPAC not test beyond level 5?*

A: The focus of ELPAC focus is on levels 4 and 5 for a number of reasons. Firstly, level 4 is considered to be a strong level of language proficiency which is sufficient for effective aeronautical communication; language proficiency above level 4 is an added benefit. Secondly, testing at levels 4 and 5 is an extremely complex task in itself. Thirdly, to test for level 6 proficiency would mean to move far beyond the realm of radiotelephony communications to test discourse and language use which is simply absent from aeronautical communication (Level 6 goes far beyond the scope of aeronautical communications (vocabulary is idiomatic, nuanced and sensitive to register, level 6 speaker varies speech flow for stylistic effect, demonstrates comprehension of linguistic and cultural subtleties, is sensitive to verbal and non-verbal cues and responds to them appropriately, etc.)..

## **2. Paper 1 (Listening Comprehension)**

*Q: How did the ELPAC development team produce the radiotelephony content for Paper 1?*

A: Due to issues of human sensitivity and security, and the length of a typical R/T dialogue, it is problematic to use authentic radio-telephony scripts. The scripts for Paper 1 of ELPAC are based on transcriptions of authentic air traffic control recordings. Scripts are standardised for length, audio and linguistic quality and sanitised to remove sensitive references found in real communications, although the scripts do refer to real places, airspace and operators (airports, FIRs and airlines). The scripts are re-recorded by EUROCONTROL personnel.

The authenticity of the recordings is maintained in that grammatical errors occur in the scripts which are representative of the use of English by the international community. Furthermore, the voices found in the re-recorded scripts represent a variety of international accents which are considered acceptable to the international aviation community, and

typical of those found within the test population and to which the test population are exposed.

*Q: How did the development team determine the difficulty of the items in Paper 1?*

A: In the trialling process, the development team used two methods of determining the difficulty of items and thus helping to ensure test equivalence and stability. Firstly, standard setting sessions were conducted whereby pre-trained personnel were invited to sit Paper 1 and were asked to decide the level of difficulty of each item presented. Secondly, items were subject to statistical analyses which disclose levels of difficulty and determine the usefulness and effectiveness of test items. The results of the qualitative and quantitative data then informed the production of final versions of the test. Item-writing and trialling is an ongoing process in the maintenance of ELPAC, with new items being trialled as a part of live test administration. More information can be found on [www.elpac.info](http://www.elpac.info) under “Final test construction” and “ELPAC validation”.

*Q: What are the implications of testing listening comprehension in isolation as a separate skill? In particular, how far does responding to Paper 1 (listening Comprehension) of ELPAC rely on a candidate’s secondary skills or knowledge which are not assessed, such as reading, writing and spelling?*

A: Item responses in Paper 1 are limited to alpha-numeric data or very short answers, thus reading and writing skills do not interfere with item response. Paper 1 is marked in part automatically, in part by trained human clerical markers. Human markers of Paper 1 are assisted by marking sheets to maintain objectivity; spelling errors are acceptable so long as the meaning of responses is clear.

*Q: Are candidates disadvantaged in that typing skills are necessary to respond to tasks in the computer mediated Paper 1?*

A: The typing speed required to respond effectively in Paper 1 is maximum 10 words per minute. Compared to the 27 words per minute of an average ‘slow’ typist, the ELPAC development team felt that slow typists are not disadvantaged in any way. Test versions were trialled on candidates who were instructed to type their answers using only one finger.

*Q: Did the ELPAC development team consider presenting the rubrics, instructions and task items in the candidate’s native language rather than in English?*

A: Research suggests that candidate’s are more comfortable and prefer to be tested in the target language of the test. Furthermore, to deliver the test in the many first languages of the test population would incur considerable time and expense.

*Q: How is time managed during Paper 1 of the test and what time is given to candidates to respond to test tasks? Are candidates disadvantaged in any way by the timing of test delivery?*

A: ELPAC candidates are given adequate time to read and listen to rubrics, instructions and test items, to listen to the test scripts, to respond to the items and finally to review the responses before the test automatically moves on to the next task. Air traffic control is a

time driven profession with procedures and communications logically ordered and sequenced in time. To reflect this, candidates always know what information they are listening for before the information is presented, and responses are given in the order that information appears in the scripts. ELPAC sample test on [www.elpacsample.info](http://www.elpacsample.info) contains the same pauses and preparation times as real test versions and candidates are encouraged to take the sample test in order to become familiar with the test format.

## Paper 2 (Oral Interaction) delivery and rating

*Q: Does ELPAC use the ICAO rating scale?*

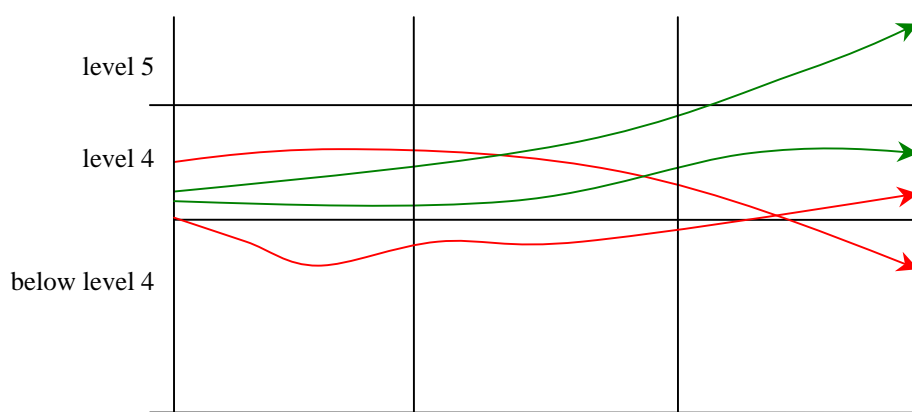
A: Essentially, yes. However, for language rating in Paper 2, the ELPAC team standardised the meaning of the adverbs of frequency (sometimes, often, frequently etc) found in the criteria of the scales. This was done by quantifying the occurrence of a behaviour for a particular adverbial descriptor so that ‘sometimes’ becomes 25% of the time, ‘rarely’ 10% of the time, for example. The rating scale with the definitions of adverbs of frequency was trialled several times before consensus was reached. The team then produced DVDs of candidates performing in Paper 2 and demonstrating these adverbial descriptors for rater training purposes.

*Q: How are the various components of the ELPAC test rated to produce an overall score?*

A: Paper 1 is a discrete item listening test, and the candidate is awarded a level for comprehension. In Paper 2, performance is rated as a process through Tasks 1a, 1b and 2, and a level is awarded in each of the six language profiles of the rating scale, including comprehension.

In Paper 2 Task 1a, in which the candidate takes the role of an ATCO in radiotelephony role-play, the maximum rating that a candidate can be awarded is level 4 or 5 except for fluency (level 5 fluency cannot be awarded as the task does not elicit language at level 5 (speaks **at length** with relative ease on familiar topics)). In Task 1b the candidate remains in the role of the ATCO and de-briefs the “watch supervisor” based on the events that took place in Task 1a. The candidate is rated across all six profiles, this time at below level 4, level 4 or level 5. In Paper 2 Task 2, the candidate describes and discusses an aviation-related picture. In this task the candidate is given further opportunity to demonstrate language proficiency at the extended level though producing stretches of fluent speech.

Paper 2 is rated as a ‘process’ in that an overall rating is given for the whole oral test event rather than ratings for each part (although if the candidate fails to perform at the Operational level with standard phraseology in Task 1a, s/he cannot be awarded an Operational level overall). It is often found that a candidate’s performance varies through the different Tasks of Paper 2, as illustrated in Figure 1 below.



The final level of language proficiency awarded to a candidate is the lowest of any of the six language profiles in the rating scale in Paper 1 and Paper 2.

*Q: To what extent can an interlocutor in ELPAC Paper 2 support a candidate who is struggling to comprehend the oral prompts?*

A: The interlocutor has a series of scripted prompts to guide interaction in Paper 2. If a candidate fails to comprehend a prompt, the interlocutor may repeat the prompt once. If the candidate fails to comprehend the prompt for a second time, the interlocutor may read a pre-scripted paraphrase of the original prompt once. No further assistance to the candidate is given, and if comprehension is unsuccessful, the interlocutor moves on to the next item in the test process.

*Q: How are the roles of rater and interlocutor managed during Paper 2?*

A: In conducting Paper 2 tests, there is always a team of two test personnel, a subject matter expert (SME) and an English language expert (ELE). In Tasks 1a and 1b, one member of the team takes the role of interlocutor (nearly always the ATCO) while the other rates. In Task 2, the roles are switched.

*Q: If each Task of Paper 2 (1a, 1b and 2) of the test is rated by the team of two and the two members of the team switch roles during the test, how is workload managed given that rating and interlocution are difficult roles to perform simultaneously?*

A: It is recognised by the ELPAC development team that interlocution and rating at the same time is problematic. Therefore, one member of the team takes a passive role and rates the candidate's performance using the rating scale while the member of the team acting as interlocutor works with an overall scale, a simplified version of the scale which is easy to refer to and serves as an *aide memoire*. In Task 1a the interlocutor also uses a 'traffic light system' which makes it easier to evaluate the candidate's responses. The examiner who is interlocuting and thus using the "overall scale" may refer to the analytic scale (with 6 criteria). Both examiners complete assessor sheets where they have to record the whole rating process.

*Q: When is a third rater used?*

A: A third rater is used when there is a discrepancy in the rating between the two members of the team which conducted the test. For objectivity, the third rater rates the sample 'blind' (s/he does not know the initial ratings) and is not made aware why there was a discrepancy between the raters.

*Q: What happens in the rating of Paper 2 if a candidate isn't particularly talkative by nature?*

A: It is essential that a full speech sample is elicited in Paper 2 that is demonstrative of the candidate's oral proficiency. In preparing to take ELPAC, candidates are encouraged to produce as much language as possible and it is made clear that it is the candidate's responsibility to 'perform'. Candidates are reminded that in Tasks 1b and 2, it's not the content of language that's being assessed, but rather the quality of language used to express themselves.

*Q: If a candidate fails to demonstrate level 4 in ELPAC, what is the recommended period before re-testing?*

A: The ELPAC team recommend a minimum period of 3 months during which a candidate may wish to undergo diagnostic testing and language training before returning for retesting with ELPAC.

#### **4. The Ordinate Versant Aviation English Test (VAET)**

Sessions presented by **Larry Rothenberg** (Ordinate)

Sessions reported by **Angela French**

**Thursday 8 May 2008**

##### **Overview**

The Versant Aviation English Test comes in two forms: The Versant Aviation English Certification Test, and the Versant Aviation English Practice Placer Test.

**The Versant Aviation English Certification Test** lasts approximately 25-30 minutes. Each test event has to be taken through an authorized test partner, which is responsible for making appropriate test-taker identification checks and guaranteeing test security. Test takers are provided with anonymous test ID numbers to ensure data privacy.

The test-taker is provided with instructions and a test paper, and either makes a phone call or utilizes a PC to interact with the Ordinate testing system. Each test event is proctored.

The test has 8 sections, comprising 78 questions:

- Aviation Reading
- Common English Reading
- Repeat
- Short Answer Questions
- Readback
- Corrections and Confirmations
- Story Retelling
- Open Questions

Aviation and general English Language skills are tested. All instructions provided are in English.

Test-taker responses are captured and stored securely. Each response provides data which is used for the final calculation. Evaluation is made at the end of the test and the responses made by the test taker are machine scored. If for any reason a test is interrupted, it is discarded and the test taker has to start again. Each test is unique having been randomly compiled from a battery of test items.

A numeric score on a 10-to-70 point scale is posted on the Ordinate website approximately 5 minutes after the test has been taken. The test taker is given a breakdown of performance in each of the sub-skills, together with an explanation of the sub-skill scores.

**The Versant Aviation English Practice Placer Test** is a low stakes version of the test and is used:

- to assess overall ICAO level and place individuals into the right level for training
- to allow test-takers to practice for the Certification test
- to use as an instructional activity within training.

As for the certification test, test takers are provided with anonymous test ID numbers to ensure data privacy, and their responses are captured and stored securely.

The test lasts approximately 15 to 20 minutes and tests aviation and general English.

The test is a fixed format with 7 sections, comprising 54 questions:

- Aviation Reading
- Common English Reading
- Repeat
- Short Answer Questions
- Readback
- Corrections and Confirmations
- Story Retelling

Test takers are provided with an estimate of the current ICAO language level only.

For both versions, sample tests are available.

## **Development**

The Versant Aviation English Tests contain two types of item: aviation specific, and general English. The aviation specific items are newly written and use is made of Oklahoma' State University's aviation corpus, radio telephony corpora, aviation standards publications and general aviation publications. The general English items are taken from the bank of materials and responses from other general English tests in the Versant™ suite. Materials produced by authors from one English-speaking state are reviewed by personnel in other English-speaking states to ensure they are authentic and that they comply with international standards. Pilots and ATCs are used for the recordings.

During the trial period, materials were tested on students from 90 countries representing 50 languages, providing over 100,000 responses.

Items for inclusion in live tests are pretested on over 500 students. These responses are recorded, transcribed and mapped onto a response network: tasks being mapped to criteria. The performance of every response is re-evaluated by the internal team to see if it is acceptable and every possible valid response is included in the marking database.

### **Issues arising from the break-out session**

1. Concern was expressed about the inability to test interactions. Ordinate drew the groups attention to the 'Corrections and Confirmations' task. In this task tests takers are presented with a radiotelephony exchange between two speakers. After they have heard the exchange, the test takers have to imagine that they are one of the speakers and continue the dialogue. If they hear information which is incorrect, they have to correct the information; if the other Speaker includes a question or a request, they have to respond appropriately.

The assessment model looks at other task types and cross refers to the assessment scales to see what predictive measurements can be derived regarding interactions. Ordinate suggests that from the thousands of measurements which are collected this is possible. However, it was acknowledged that the test design did not allow a test taker to show competence in interacting by, for example, requesting clarification.

2. The group asked how a test taker could demonstrate control of grammatical structure and be able to form associated meanings, a requirement of Level 4. Ordinate drew attention to the 'Repeat' task type: this task starts with short sentences and then the sentences get progressively longer. Research has shown that there is a limit to the amount of information a second language learner can repeat without needing to call on the skill of transformation. The strings of questions presented are too long for an individual to be able to memorize in one hearing, and in attempting to repeat the information test takers have to transform the information, so demonstrating comprehension and control of grammatical structures.
3. The group asked how longer stretches of speech were tested and marked. Ordinate drew attention to the 'Story telling' task; in this task test takers listen to an input of about 30 seconds and are required to retell the story in up to 30 seconds. For the time being, this task is being developed for training purposes only and though included in the test is not included in the assessment.

The 'Open questions' provide an opportunity for test takers to give extended responses, but these are currently marked by human raters.

4. ICAO Doc 9835 (2004) questions the appropriateness of computer marking. Ordinate suggested that this position may need to be reviewed in light of advances in technology.

### **Friday 9 May 2008**

#### **1. Information**

Information on test development, the development team, the process of development, methods for producing data, and validation reports are all available on the Ordinate website: [www.ordinate.com](http://www.ordinate.com)

#### **2. Test availability**

The Versant Aviation English Certification Test can be taken 24 hours a day through an authorized test partner. Tests are scheduled to take place every hour to take account of the time needed to read the instructions, ensure the test taker has taken the practice test etc.

The Versant Aviation English Practice Placer Test is available to anyone.

### **3. Control of the environment**

In order to ensure each test taker has the same experience, the certification test is administered through an authorized test partner. Responsibilities therefore rest with both Ordinate and the authorized test partner.

#### **Ordinate:**

- provides the certification test and the practice test
- monitors test statistics
- maintains test data
- identifies non-performing items
- maintains the item pool by adding or deleting items
- maintains the test development system

#### **Authorized test partner:**

- provides testing facility
- ensures item security
- screens test takers
- checks test taker's ID
- proctors the test event
- maintains records
- provides practice tests
- provides training (optional)

### **4. Test administration**

Tests are mostly administered through Jepperson Solutions, though other organisations which have recognised experience of going through licensing procedures are also used.

The test is taken either by phone or via a PC. Cell phones and VoIP systems are not acceptable. Ordinate requires the centre to provide 3 submissions for quality checking purposes. Should 'call drop' occur, or if for any reason the test taker chooses to abort the session, the test has to be re-started with a new test configuration.

All responses are sent to a central server which handles the assessment process and the result which is generated is posted to the Ordinate website.

### **5. Test Security**

Each test is unique and is generated randomly from an item pool. Responses are monitored in relation to the test taker's overall score and if 'item drift' is identified, i.e. an item is found to be consistently proving to be too easy (with security possibly having been breached) the item is removed from the item pool.

### **6. Raters**

Currently, the validation of test items is carried out by the internal development team, which comprises experts in the areas of linguistics, psychometrics and test development. It

is anticipated that as entry numbers increase, external raters will have to be taken on or there may be negotiations with organisations such as ACTFEL.

### **7. Reporting of information**

A numeric score on a 10-to-70 point scale is posted on the Ordinate website approximately 5 minutes after the test has been taken. The test taker is given a breakdown of performance in each of the sub-skills, together with an explanation of the sub-skill scores. The reporting illustrates where there are strengths as well as weaknesses.

### **8. Review process**

A review process is available. All the tests are recorded and the system can identify strings of incorrect responses. These can then be listened to by human raters to see if there was a reason for the poor performance, e.g. extraneous noise which affected the test taker's ability to hear clearly.