

# **The 1<sup>st</sup> annual Report of the Radio Communication Examination Standards Committee, May 2007**

## **1. Introduction**

On 16 January 2007 an agreement was signed between Ofcom and the Radio Communications Foundation (RCF), setting out “the terms under which the Radio Communications Foundation (RCF) agrees to conduct Amateur Radio examinations and under which Ofcom agrees to recognise a candidate’s result in those examinations for the purpose of granting an Amateur Radio licence”. This agreement will be made available for inspection on the RCF website, along with other material relating to the Radio Communications Examinations (RCE).

In order to ensure the probity and quality of the examinations being managed by the RCF, the agreement with Ofcom stipulates an overall administrative structure. Under this structure the RCF has appointed a RCE Standards Committee responsible for oversight of the management structure and policies of the examinations. An RCE (Examination) Committee, reporting to the Standards Committee, is responsible for the academic standards and examination performance. The RCF has also appointed a Quality Manager to audit the examination process. He will report directly to the Chairman of the RCE Standards Committee. Terms of Reference for these committees are shown in the appendices to the agreement.

The agreement with Ofcom states that the Standards Committee shall have an independent Chair, appointed by the RCF, and shall comprise representatives from Ofcom, RCF, RSGB, the learned societies (e.g. IET), industry, the examination boards and academic bodies. The Standards Committee shall determine the general policy direction and management structure of the administration of the Amateur Radio licensing examinations and provide independent verification of the integrity of the examination system. It shall approve the syllabuses and confirm the general suitability of the examinations for the award of Amateur Radio licences. It shall ensure the compatibility of the examinations with the CEPT harmonised arrangements set out in Recommendations T/R 61-01 and T/R61-02 and any other international recommendations applicable to the Radio Amateur service.

The Standards Committee met for the first time on 19 May 2007 and this is its first annual report.

## **2. Membership**

The membership of the Standards Committee is as follows:

Prof Simon Watts MBE FREng, G3XXH, Thales UK (Standards Committee Chairman)  
Prof Hugh Griffiths FREng, G4CNV, Principal, Defence Academy of the United Kingdom  
Dr Julian Gannaway, G3YGF, Roke Manor Research Ltd  
Murray Niman BSc MIEE, G6JYB, BAE Systems ATC  
Dave Powis BSc, G4HUP, College Lecturer

Steven Roper CEng FIET, G8MXZ, Ofcom

Alan Betts BSc CEng MIEE, G0HIQ (Chairman of RCE Examination Committee)  
Colin Richards, Chartered FCIPD, G3YCR, Consultant (RCE Quality Manager)

Richard Constantine, G3UGF (RSGB Director of Education and Training)  
Dr R.C. Whelan, G3PJT, Smith Institute, (RCF Trustee)

### **3. Terms of Reference**

- To ensure that the Radio Communications Examinations are run in accordance with the Schedule agreed between Ofcom and the Radio Communications Foundation.
- To ensure that examinations are consistent with CEPT T/R 61-02 where practicable.
- To ensure that the syllabus remains relevant and continues to reflect the requirements of a modern Amateur Radio service whilst ensuring that the examination continues to cover the internationally agreed Amateur Radio syllabus.
- To examine on a yearly basis the performance of the examination system.
- To review on behalf of the Trustees of the Radio Communications Foundation the RCE - Examination Committee's report on the Conduct of Examinations and the Quality Manager's report.
- To publish a report on the RCF website.

### **4. Assessment of Overall Examination Performance**

The committee received detailed reports from the RCE Examination Committee and the RCE Quality Manager on the management and performance of the examination processes. Their reports are summarised below,

The Standards Committee is satisfied that the current Foundation, Intermediate and Advanced examination syllabuses are suitable for the award of Amateur Radio licenses. Further, the examinations are compatible with the CEPT harmonised arrangements set out in Recommendations TR 61-01 and TR 61-02. The committee will continue to review the syllabuses and examinations to ensure compatibility with international and national regulations.

### **5. Syllabus Revisions**

The Examinations Committee has revised the syllabuses for all examinations, commensurate with the changes in licensing conditions. These have all been published and fully implemented for future examinations.

### **6. Review of the Examination Committee report.**

#### Lifetime Licence

The major event of 2006 was the introduction of the 'lifetime licence' on 1 December 2006. This reform removed the need for licensees to pay an annual licence fee and also resulted in a number of changes to the licence terms and conditions.

The Radio Communications Examination (RCE) department at RSGB HQ uploads examination results to Ofcom electronically. This data is used by the Ofcom licensing system to ensure that Amateur Radio licenses are only issued to applicants that hold an RCE pass certificate at the appropriate level.

#### Syllabus Revisions

The changes to the licence conditions required commensurate changes to the syllabuses.

The revised versions for Foundation and Intermediate were published in December 2006, for use in examinations from 1 April 2007.

Updating the Advanced syllabus took a little longer because the examination questions are more wide-ranging and searching. The syllabus was published early in February 2007, for use for examinations from 1 July 2007

The committee was satisfied that the syllabus changes were implemented as soon as was reasonably practicable and thanked the RCE Committee for its hard work.

### Question Banks

The committee noted that the syllabus changes increased the need to update the question banks. Further questions are also needed for the Advanced Examination. The Standards Committee recommended that means be investigated to stimulate the supply of new questions to help build up the question banks.

### Pass marks

The pass marks for Foundation and Intermediate examinations are fixed and published, to allow local marking.

The norm referencing carried out in the phase 2 pilot in 2005 suggested a fixed pass mark could be used for the Advanced examination. This was trialled during 2006. The pass rate variation inevitably increased slightly compared to 2005. Nonetheless the variation was well within acceptable limits and less than that previously experienced by the City & Guilds. It is proposed to continue the fixed pass mark trial into 2007 since only 6 examinations have been held under this process.

### Local Marking

The Examination Committee had reviewed the option of local marking of the Advanced exam if the pass mark trial demonstrated the feasibility of maintaining a fixed pass mark. The conclusion at this stage is that local marking cannot be supported, for reasons of examination security, the change to centralised entry of examinations results directly to the Ofcom licensing system and the proposal to move to optical marking.

### Results for 2006

The table shows the number of examinations offered and the overall results for 2006. The 2005 results are shown in brackets.

	<b>Foundation</b>	<b>Intermediate</b>	<b>Advanced</b>
Number of Examination sessions	640 (651)	230 (230)	154 (118)
Number of Candidates	2034 (2206)	625 (806)	446 (287)
Number of Passes	1719 (1892)	604 (727)	326 (196)
Pass rate	84.5% (86%)	96.6% (90%)	73% (68%)

The Foundation and Intermediate examinations were available at 'short notice' during 2006 and 6 Advanced examinations were held at pre-notified times with an average of almost 3 candidates per exam session and 25 centres active on each occasion.

### *Foundation Examination*

The number of candidates entering the exam is about 10% down on 2005 and the pass rate is also down slightly. The Examination Committee is unaware of any reason for the drop in numbers and that factor is best considered by the RSGB in a wider review. The pass rate drop is within expected tolerance and may be slightly influenced by a modest cull on trivial questions that everybody answered correctly.

### *Intermediate Examination*

The pass rate for the Intermediate Exam in 2006 appeared to be rather high and there is concern that there is insufficient increase in knowledge requirements between Foundation and Intermediate examinations. The Standards Committee noted that the Intermediate exam emphasises practical aspects of radio communications, which is regarded as very important. It was proposed that increased emphasis and rigour might be placed on these aspects. The Standards Committee requested the Examination Committee to investigate appropriate changes to the Intermediate exam, within the context of the existing syllabus and to also consider whether the Intermediate examination syllabus should be extended to recognise the additional privileges that Intermediate Amateur Radio licence holders enjoy compared to Foundation licence holders.

### *Advanced Examination*

The pass rate is slightly up on 2005, explained in part by the 83% pass rate achieved in the May 2006 exam, compared to an average, not counting that exam, of around 69%. No obvious reason was noted and that paper was considered to be of similar standard to the others.

### QCA Accreditation

Accreditation of the Advanced Examination by the Qualifications and Curriculum Authority (QCA) is being investigated. This is regarded as an important step to maintain the public reputation of the Amateur Radio licence qualification. The Examination Committee will be working with the Quality Manager to support this activity.

## **7. Review of the Quality Manager's report**

This is a new appointment, created as a result of the agreement between Ofcom and the RCF.

The Radio Communications Examination is one of the most important assets that the RSGB and the Foundation jointly hold. The City and Guilds of London Institute Radio Amateurs Examination (RAE) had a cachet that took it beyond the realms of a hobby, as probably the only – with the possible exception of the Private Pilot's Licence – leisure activity that legally required an examination to be passed before full participation was permitted. The aim should be to re-establish that cachet under the Radio Communications Foundation and maintain it. Recognition by the Qualifications and Curriculum Authority will be important in this. For this to occur however, the exam needs to be run through procedures that are consistent and have integrity and probity.

There are three legs on which this consistency is built. These are

- The quality, consistency and relevance of the three exam syllabuses and exam questions.
- The exam procedures and administration.
- The conduct of examinations

Appropriate control and quality of documentation is also essential for this.

The Quality Assurance Manager's role is to monitor and audit these procedures; to highlight areas of concern; and to recommend where changes are required.

#### Examination Procedures and Administration

The procedures and administration are undertaken by a team working from RSGB HQ at Potters Bar. These are employed staff. The terms will be covered in the RSGB/RCF MoU, which is currently being drafted.

The team's duties include registering exam centres, maintaining a register of exams to be held, the confidential task of checking potential instructors' references and the Criminal Records Bureau, printing and preparation of exam documentation including examination papers, marking sheets etc, marking Advanced papers, and providing pass certificates.

The examinations staff at RSGB have a very heavy workload and work under considerable pressure of time. One issue that increases the pressure is late receipt of applications for Foundation and Intermediate exams (i.e. with less than the required 10 days' notice). It was noted by the Standards Committee that sufficient notice is essential to ensure that appropriate quality controls can be applied, including the arrangement of unannounced inspections if required. The Standards Committee proposed that the RCF should advise the RSGB that it may refuse to accommodate exam requests where adequate notice is not given.

#### Conduct of Examinations

Examinations at all levels are conducted at some 330 centres. These are registered by the RSGB head office staff. Many of the locations are Amateur Radio clubs. These are accepted for registration after inspections and completion of inspection reports by RSGB Regional Managers. They do not have to be affiliated to the RSGB. Other centre locations are colleges and schools and some electronics companies. In 2006 1024 examinations were held across all centres. 640 were Foundation level, 230 Intermediate and 154 Advanced.

#### Inspections

The assurance of quality in all aspects of the conduct of exams is essential for the probity of the RCE. The Quality Manager has proposed that there should be a target of unannounced inspections of 10% of exam centres per annum. This was strongly endorsed by the Standards Committee.

It was further proposed that such inspections should be undertaken by an independent team of voluntary inspectors. It was agreed that the Quality Manager would prepare proposals for the creation of such an inspection team.

#### Differential Examination Fees for RSGB Membership

The Quality Manager noted that discounted examination fees are currently offered for RSGB members. The agreement between the RCF and Ofcom explicitly states that all examination fees shall be set on an equitable and non-discriminatory basis, regardless of RSGB or other membership. In future it will not be possible for discounted fees to be offered on the basis of RSGB membership.

#### Documentation

The Quality Manager recommended that a process be instituted for allocating responsibility for examination procedural documents, together with the development of a Quality Manual system. This would be done in cooperation with the Chairman of the Examination Committee and the RSGB Examinations Manager. The Standards Committee fully endorsed this proposal and requested that a system be developed over the coming year.

## **8. Complaints Received by the RCE Examination Committee**

The Examination Committee had investigated two instances of irregular conduct during the year. The Standards Committee was satisfied that these had been dealt with appropriately. This matter did highlight the need for a formal inspection regime, which was discussed in Quality Manager's report.

During 2006 there was a long-running appeal against an Examination Committee decision. The Standards Committee confirmed that correct procedures had been followed.

The Examination Committee is developing formal procedures for handling of appeals against their decisions following an investigation of irregularity. These procedures will set out a role for the Quality Manager and the Standards Committee. Once agreed, the appeals procedure will be published on the RCF website.

## **9. Recommendations**

The RCE Standards Committee made the following recommendations for action during 2007:

- Consideration should be given to improving the supply of questions for the RCE question bank.
- Increased emphasis and rigour should be applied to the examination of practical aspects of radio communication in the Intermediate Examinations, within the context of the existing syllabus and to also consider whether the Intermediate examination syllabus should be extended to recognise the additional privileges that Intermediate Amateur Radio licence holders enjoy compared to Foundation licence holders.
- Accreditation of the Advanced Examination by the QCA is a highly desirable aim and should be actively pursued.
- Applications for Foundation or Intermediate exams must be made at RSGB HQ with at least 10 working days' notice. Applications made with insufficient notice may be refused.
- The Quality Manager will prepare procedures for unannounced inspections of examination centres.
- The Quality Manager will work with the Examination Committee and the RSGB Examination Manager to develop a Quality Manual for the management of the examination process.
- Examination fees must be set on an equitable and non-discriminatory basis, regardless of RSGB or other membership.
- Copies of the agreement between the RCF and Ofcom and other supporting documentation will be placed on a new examinations section of the RCF website.
- The process for appeals against Examination Committee investigations of allegations of irregularity will be published on the RCF website.