

Report

The Annual Report of the RSGB Examinations Standards Committee

May 2019

In 2018 the RSGB Examinations Department and the Examinations Group, overseen by the Examinations Standards Committee have continued their main task of operating the amateur radio examinations process. The total enrolment on all examinations increased by just over 6% compared to 2017 and the pass rate was slightly up on 2017.

Work on the implementation of Syllabus 2019 has continued during the year, and the first examinations under Syllabus 2019 will take place in September 2019. Work has also been continuing to increase the uptake of the online examinations. As well as the benefit to candidates of obtaining an instant indicative result, the online exams provided by TestReach offer possibilities for making examinations more accessible to future candidates.

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1. Introduction

The role of the RSGB Examinations Standards Committee (ESC) is to ensure the examinations system is fit for purpose so that licensed radio amateurs can enjoy the hobby legally and safely, can be good citizens on-air, without causing interference to the public. In addition, they support amateurs in understanding how to get the best out of the hobby at whatever level they chose to operate, and that they have enough knowledge and understanding to progress to higher levels if they wish.

The ESC assesses the quality of the examinations and makes sure that it is uniform across the United Kingdom so that everyone reaches the same level of attainment. The ESC also ensures that Full level is broadly aligned with HAREC so that UK amateurs can continue to benefit from reciprocal licensing arrangements.

Although the ESC is a committee of the RSGB, it operates at 'arms-length' from the RSGB Board so that the examinations standards are not unduly influenced by Membership and commercial considerations. Formal communication with the Board is via a Board Liaison Member.

The annual reports of the Examinations Standards Committee are published on the RSGB website, <http://rsgb.org/main/about-us/committees/examination-standards-committee/>. Other relevant documents are also available on this website, including the terms of reference of the Examinations Standards Committee and the agreement between Ofcom and the RSGB.

The data and analysis presented in this report covers the examination period from 1 January to 31 December 2018 and was considered at the April 2019 meeting of the ESC.

2. Membership of ESC

The membership of the Examinations Standards Committee at the time of writing this report is as follows:

Committee Members

Prof. Anthony Kent, G8PBH, Chair

Paul Jarvis, G8RMM, Head of Systems, Baldock Radio Station, Ofcom

Prof. Peter Richmond, M0HBL, Chair of Examinations Group

Dave Wilson, M0OBW, Examinations Quality Assurance Manager

Nigel Barker, M0HZL, Examinations Standards Manger

Squadron Leader Bill Boland, RAFAC Corps Radio and Communications Officer

Derek Hughes, G7LFC, Amateur Radio Development Committee Chair

Steve Thomas (RSGB GM), M1ACB, Examination Department representative

Michael Bruce, M0ITI, RSGB Board Liaison (non-voting member)

Examinations Audit Committee Members

Prof. Hugh Griffiths, G4CNV, Department of Electronic & Electrical Engineering, UCL

Dr Julian Gannaway, G3YGF

Murray Niman, G6JYB, BAE Systems Applied Intelligence, UK

The terms of reference and constitution of the committee are set down in the Schedule of Terms between Ofcom and RSGB. The RSGB Board Liaison member and the Examinations Standards and Examination Audit Committee members attend and contribute to all meetings but are formally non-voting members.

3. Assessment of Overall Examination Performance

The committee received reports from the Examinations Group (EG), the Examinations Quality Assurance Manager (EQAM), the Examinations Standards Manager (ESM), the Examinations Department (ED) and the Air Cadet Organisation (ACO), on the management and performance of the examination processes. Their reports are summarised in the sections below.

The Examinations Standards Committee is satisfied that the current Foundation and Full examination syllabuses are suitable for the award of amateur radio licences, but some concerns remain about the standard of Intermediate. Furthermore, 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.

4. Review of the Report from the Examinations Group Chair

4.1 General

During 2018, as well as its normal role of monitoring the running of exams, including dealing with appeals and anomalies, the Examinations Group (EG) has continued its work on implementing Syllabus 2019. The full Examination Specifications were released towards the end of the year and there have been some minor corrections and amendments made in response to comments from the community. A large part of the group's work has been involved with populating the examinations question bank in preparation for the first exams under Syllabus 2019. The Chair of EG reported that there will be sufficient questions in the bank for the first exams to take place in September 2019.

4.2 Exam statistics

Prof. Richmond presented the exam statistics. The total number of candidates was up, compared to 2017, by just over 6%. This increase was accounted for by Intermediate and Full, while the number of Foundation candidates was down a little, by just over 1%, compared to 2017. Looking at the overall trends in Figure 1(a), it is seen that over the past five years there has been a slow decline in the number of Foundation candidates, averaging about 2% per year, while the numbers of Intermediate and Advanced candidates has, if we ignore year-to-year fluctuations, remained fairly level. We could conclude from this that, whatever the reason is for the slow decline in people

entering the hobby at Foundation level, it does not appear to have affected those whose intention is to progress all the way to a Full licence.

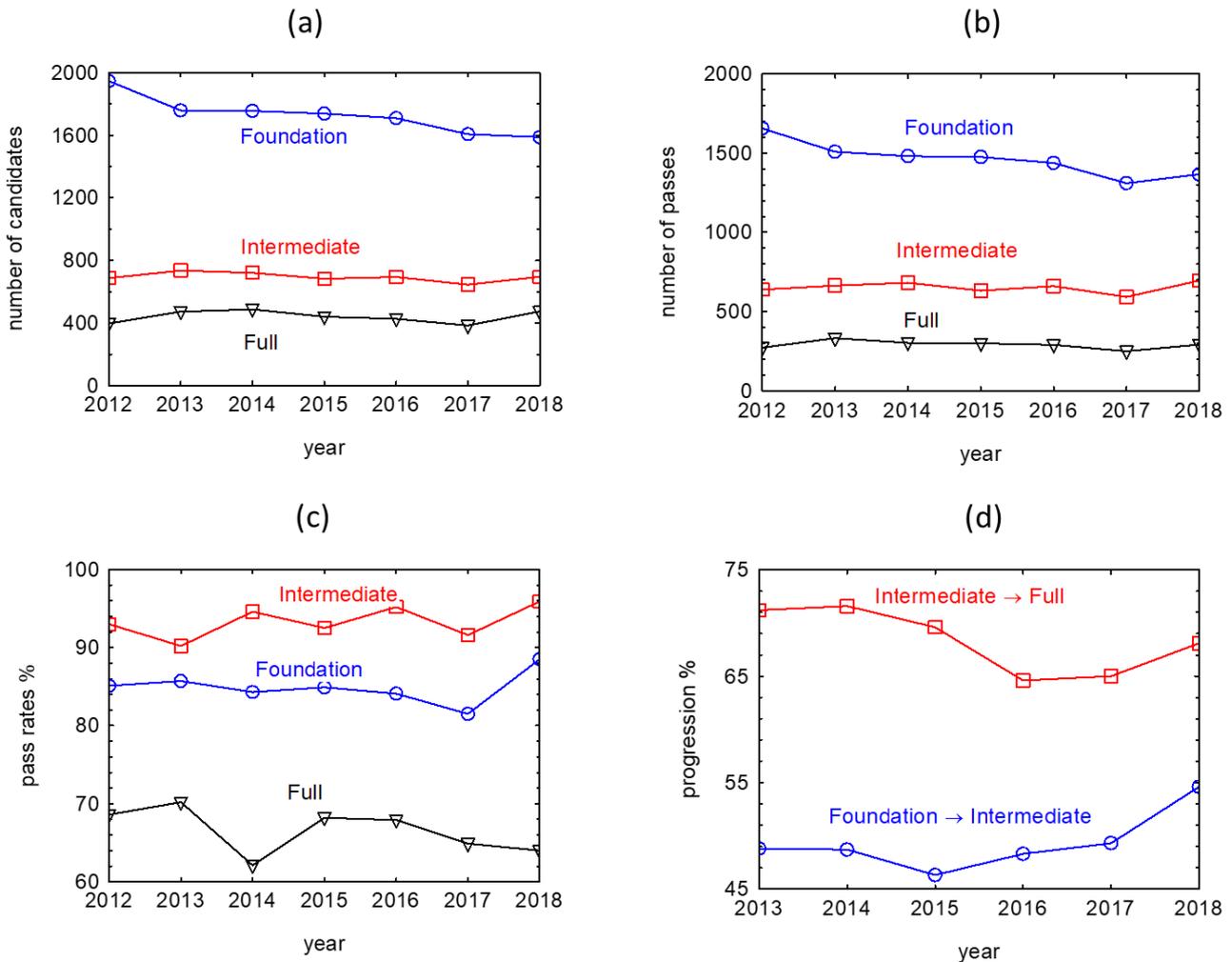


Figure 1 Exam statistics for past six years including the latest data from calendar year 2018: (a) numbers of candidates at the three levels; (b) numbers of passes at the three levels; (c) pass rates, not counting registered candidates that didn't attend the exam; (d) progression rates, using data for the lower level from 2017.

Numbers of passes and pass rates are shown in Figure 1(b) and (c), respectively. The data for pass rates excludes candidates that enrolled but did not sit the exam. The main message to take from these numbers is that the Intermediate exam does not appear to be a good stepping-stone between Foundation and Full. Furthermore, the Intermediate pass rate, which increased to 96% in 2018, suggests that the exam does not discriminate sufficiently well between candidates. Ofcom have previously expressed concern that the standard of the current Intermediate exam is not consistent with the extra licence privileges awarded. It is expected that the changes to Intermediate in Syllabus 2019 will rectify both these.

Finally, the progression rates shown in Figure 1(d), calculated as the ratio of the number of passes at the higher level to the number of passes at the lower level in the previous year (it is understood that some candidates pass both levels in the same year, but it is difficult to keep track of individual

candidates, and the method used still provides a useful indication of progression), both show an increase over the past two years.

4.3 Single exam for Full licence

The Examinations Group have prepared a draft syllabus, based on Syllabus 2019, for an exam that will provide direct entry to a Full licence, like the old RAE. This has now become possible due to the availability of online exams, which facilitates the construction of different types of exam from the questions in the bank. The ESC has agreed that the syllabus will be put out for consultation in the UK amateur radio community. This consultation will take place later in 2019. An important question, which is yet to be resolved in EG and ESC, concerns what form any practical examination might take, and we will look to the wider community for guidance on this.

5. Review of the Report from the Examinations Quality Assurance Manager (EQAM) and Examinations Standards Manager (ESM)

5.1 Exam centres, and age and gender statistics

These are presented in Tables 1 and 2 and are self-explanatory. The main messages to take from these are that the peak in numbers of candidates is in the age range 40 – 60 (Table 2) and the fraction of women candidates is approximately 10%. These have not changed significantly during the past three years.

(a)						(b)					
Region	Month	No of Centres	No of Candidates			All Levels	Average Age			Gender	
			Foundation	Intermediate	Advanced		Foundation	Intermediate	Advanced	Male	Female
Region 1	UNIQUE CTRS	15	84	41	25	49	46	44	55	139	11
Region 2	UNIQUE CTRS	7	18	11	4	44	40	52	37	32	1
Region 3	UNIQUE CTRS	29	165	75	79	51	49	51	58	293	26
Region 4	UNIQUE CTRS	35	158	66	32	48	47	50	47	242	14
Region 5	UNIQUE CTRS	22	142	79	36	49	46	54	52	228	29
Region 6	UNIQUE CTRS	3	20	6	4	45	45	31	32	30	
Region 7	UNIQUE CTRS	17	64	15	10	47	46	52	40	83	6
Region 8	UNIQUE CTRS	9	59	22	14	53	49	38	38	85	10
Region 9	UNIQUE CTRS	18	185	73	48	41	39	41	44	275	31
Region 10	UNIQUE CTRS	27	247	135	92	48	45	49	46	432	42
Region 11	UNIQUE CTRS	26	119	77	40	51	48	53	52	220	16
Region 12	UNIQUE CTRS	20	202	114	69	45	45	43	45	356	29
Region 13	UNIQUE CTRS	20	135	29	32	52	48	53	58	177	19
	TOTALS	248	1598	743	485	48	44	49	50	2592	234
ATC			54			18	18			47	7

Table 1 Exam statistics by Region: (a) numbers of exam centres and candidates; (b) gender and average age of candidates

2016			2017			2018		
Age			Age			Age		
0-9	5	0.2%	0-9	10	0.4%	0-9	2	0.1%
10-14	133	4.5%	10-14	135	5.1%	10-14	141	5.0%
15-19	249	8.4%	15-19	157	6.0%	15-19	170	6.0%
				302			313	
20-29	275	9.3%	20-29	205	7.8%	20-29	223	7.9%
30-39	409	13.8%	30-39	298	11.4%	30-39	345	12.2%
40-49	675	22.8%	40-49	613	23.4%	40-49	587	20.8%
50-59	685	23.1%	50-59	654	24.9%	50-59	738	26.1%
60-69	381	12.9%	60-69	414	15.8%	60-69	501	17.7%
70-79	130	4.4%	70-79	125	4.8%	70-79	158	5.6%
80+	21	0.7%	80+	12	0.5%	80+	14	0.5%
2963			2623			2826		
Foundation	Intermediate	Full	Foundation	Intermediate	Full	Foundation	Intermediate	Full
1834	689	440	1593	645	385	1598	743	485

Table 2 Age statistics of candidates for years 2016 – 2018 showing clear peak in the number of candidates in the age range 40 – 60.

5.2 Challenges and Appeals 2018

Seventeen challenges were received during 2018, which included: question queries; a request to favourably view a candidate who narrowly failed; typos in questions; quality of the paper the exam was written on; questions considered too hard (Foundation level); and expired CPAR. Of the 17 challenges two clubs disagreed with the findings and appealed – both appeals were upheld, resulting in one candidate gaining a pass.

5.3 Inspections 2018

As has been reported previously, due to the short notice period for exams it is still proving to be very difficult to carry out truly random inspections and those that have been carried out in 2018 have been based on 'intelligence' received via HQ and other routes. There are only a handful of clubs where there are concerns, and those are closely monitored. Other than minor indiscretions such as no 'Exam in Progress' notices on doors; no clock visible to candidates; no 'Start', 'Half Way' and 'Finish' times visible to candidates, there was nothing significant to report.

5.4 Online examinations

As shown in Table 3, the uptake of online exams remains poor. The feeling of ESC is that, while a few candidates that are given the choice feel more comfortable taking their examination on paper, the main reason for the poor take-up is that some Exam Secretaries aren't offering candidates a choice. This may be because they have concerns about the reliability of the online system (specifically the robustness of the internet connection at their venue). They prefer to stay with the paper exams which they are comfortable with. Looking at the Full exam for 2018: the pass rate for those taking the online exam was 69%, whilst for paper it was 64%, so there is no evidence from the figures that taking the exam online affects the candidates' performance.

	2018					2019			
	Foundation	Intermediate	Full	TOTALS		Foundation	Intermediate	Full	TOTALS
January	11	0	6	17		25	3	14	42
February	14	14	13	41		24	14	11	49
March	23	4	6	33		50	38	20	108
April	16	3	2	21					
May	16	9	0	25					
June	15	6	11	32					
July	11	0	23	34					
August	10	8	14	32					
September	32	5	3	40					
October	13	14	3	30					
November	14	16	5	35					
December	22	5	38	65					
	197	84	124	405		99	55	45	199
	12%	11%	26%						

Table 3 Numbers of online examination taken in 2018 (and the first three months of 2019). The percentages given at the bottom of the table are the percentage of all exams taken that were taken online

We will carry on encouraging clubs to take up online exams, ie. simply replacing the question paper and OMS with a computer and emphasising the benefits for candidates, invigilators and Exam Secretaries. To counter the arguments put forward regarding lack of Wi-Fi or poor reliability of the internet connection we will continue to provide demonstrations in the venues and look into offering offline examinations with many of the advantages listed for online exams. Another option discussed by ESC at its meeting is to offer candidates the option to take the exam at any time and any location via TestReach Remote Invigilation, which, among other things, will reduce the load and responsibility on clubs when it comes to hosting exams.

6. Review of the Report from RSGB HQ Examinations Department (ED)

6.1 The year in retrospect

Total number of exams administered by the RSGB Examinations Department in 2018 increased by 6.44% compared to the previous year. The total number of examination sessions that took place in 2018 was 1074 and the total number of candidates 2808, giving an average of 2.6 candidates per exam.

Published timescales for providing papers and results were maintained.

6.2 Statistics

The headline figures for 2018: for Foundation, 1588 candidates and 1366 passes; for Intermediate 746 candidates and 696 passes; and for Full 474 candidates and 292 passes. The exam statistics are summarised and compared with the past five years in Figure 1. Overall, compared with 2017, there were total of 170 more candidates across all exam levels in 2018: 19 fewer at Foundation, 100 more at Intermediate and 89 more at Full level. The pass rate increased at Foundation and reduced slightly at Full, with a total of 2354 successful candidates.

Despite the small reduction in Foundation candidates, the pass rate resulted in an increase in the number of successful candidates, from 1310 to 1366, compared to 2017.

We understand that 81 candidates passed the Air Cadet exam, with 48 requesting a candidate number from the RSGB for Foundation equivalence. Those figures are not included in the statistics.

6.3 Trends

Historical trends can be seen in Figure 1 above. The trend for the total number of exams, observed across the previous ten years, remains slightly downward, but 2018 did not follow the rate of descent observed in 2017. In fact, the number of candidates and exam passes increased at both Intermediate and Advanced levels.

6.4 In-year activity

- Online examinations, using the TestReach system, have been fully operational at all levels since January 2018. The uptake has not been as fast as we hoped, with an average of between 30 and 40 online exams per month, increasing to 64 in December
- 181 Registered Assessor applications processed (up from 116 in 2017)
- Two International Amateur Radio Exams administered (up from 0 in 2017).

7. Review of the Report from the ACO Foundation

7.1 General

Staff workload issues at cadet units have continued to reduce the number of Squadron Instructor-led courses available for eligible cadets to take the Foundation exam.

Following a review of the RACAC Communicator Syllabus it has been decided that, for an evaluation period, the Advanced Radio Operator and Foundation Courses will be integrated and delivered by Wing and Regional Radio Training Teams. The Foundation module will be completed by Cadets progressing toward the Cadet Communicator Silver qualification.

Squadron Leader Bill Boland is the new RAFAC Radio and Communications Officer and prepared this report. However, due to his being unable to attend ESC, it was presented by the former Radio and Communications Officer: Squadron Leader David Pink.

7.2 Results 2018

- 110 Cadets and Staff initially registered for the exam. However, due to course cancellations 89 candidates (83 Cadets and 6 staff) sat the exam.
- 71 candidates passed first time.
- 81 candidates passed after retakes.
- Overall percentage of candidates passing: 91%
- Average pass mark 83.79
- Two courses were cancelled - one due to weather in the Welsh Hills (12) and one due to transport problems on the weekend in question (9).
- Poor teaching / understanding of the licence conditions are still the main cause of failure. Licensing conditions are still the prime source of failed questions. This is often due to tutors themselves, when not being fully licensed amateurs, not understanding the licensing document. The issue of under-qualified tutors will be resolved by delivering the integrated Advanced Radio Operator and Foundation Licence course at Wing and Regional level.

However, 'qualified' RAFAC radio instructors will be permitted to deliver independent Foundation courses at Squadron level.

The operating ability of the cadets was noticed during practical sessions, where the ease of use and cadet confidence was frequently remarked upon.

7.3 Inspections and Irregularities

Four Foundation courses/exams were inspected during the year. No irregularities have been reported.

7.4 Intermediate

The team, under Dave Taylor, have reworked the 'Practical Skills' module of the 'Communications Specialist' Gold level course to align with around 60% of the Intermediate practical syllabus. This is incorporated into the Communications Specialist course and must be completed before the cadets attend the Week-Long Deployed Radio Course. This gives cadets a short-step, outside of our main RAFAC Radio syllabus, to move up to an Intermediate Licence.

8. Review of the report from the Examination Systems Review Manager (ESRM)

8.1 State of readiness for start of examinations under Syllabus 2019

The remaining areas of work rest in getting the exam question banks ready to go. Existing questions have been copied to a new Syllabus 2019 question bank and have been retagged to the new syllabus item numbers. Currently all the existing questions are being reviewed to ensure that they are still valid and are correctly tagged. It is expected that this will be completed by mid-June 2019. In parallel, EG have been carrying out the task of creating new questions. We currently have 95% of the questions required for a September 2019 start and we will have 100% of the required questions by the end of June 2019.

8.2 Addressing the concerns of the tutor community

From formal and informal discussions with members of the tutor community regarding the adoption of Syllabus 2019, the following main concerns have been raised:

1. The new syllabus makes it harder to deliver a Foundation course in one weekend
2. The new syllabus is harder (too academic)
3. That the new content is considered unnecessary
4. Some of the requirements in the new syllabus have been set at the wrong level or should not have been set at all.
5. Lack of materials from the RSGB concerning the SDR and Digital content

To develop a response to these, a Syllabus Implementation Group was established comprising TEC, EG and ESC representatives as well as interested tutors from some clubs. This met in January 2019 to determine the courses of action required to implement the new syllabus and also address the points raised above:

Concerning whether it will be harder to deliver the Foundation course in one weekend - this observation does have some validity, especially in the early stages of life of the new syllabus when the tutors themselves are getting up to speed with the new material. It is true that there are more

learning points in the new syllabus, but that is largely because the new syllabus expands points that were excessively summarised in the current syllabus. In terms of material to be presented by a tutor in the course of training, there is very little new material added. However, it is noted that enabling candidates to complete a crash course in one weekend is not a syllabus objective.

Concerning whether the new syllabus is harder - there is no question that the Intermediate stage, the steppingstone between the Foundation level and Full, has been made more progressive. The current Intermediate level has for some time been recognised as more of a foundation plus and, although that was not the intention, it has resulted in current Intermediate licence holders being inadequately prepared for the Full licence exam. Consequently, the new Intermediate syllabus does contain some material that has been pulled down from the current Advanced syllabus. This has been done with great care to ensure that progression through the three levels follows a natural learning progression.

Concerning whether the new content is unnecessary - the new material on SDR and digital reflects the new technology that is being used in amateur radio. It is not being included prevent people obtaining an amateur radio licence, but to ensure that licensees are able to enjoy the hobby legally, safely and with the ability to develop their skills and application of the hobby.

Concerning whether some of the material was set at the wrong level or even if it should have been set at all - the overwhelming complaint was practical item 10B on the August 2018 release of the Foundation syllabus. Our response was to withdraw the practical in October 2018.

Concerning the availability of material from the RSGB on SDR and Digital aspects - it was decided by the Syllabus Implementation Group to present a model set of tutorial slides as well as background technical material in March 2019. This was very well received. Feedback received during the presentation was used to refine the presentation slides which have now been published on the RSGB website.

9. Conclusions

Due to the efforts of RSGB Tutors, RAFAC Trainers, Club Exam Secretaries, the RSGB Examinations Department and the Examinations Group, 1447 candidates demonstrated that they had achieved the standard for a Foundation licence in 2018. The number of candidates successfully progressing all the way to meet the standards for a Full licence in 2018 was 292.

Overall standards were maintained in 2018 and the amateur radio examinations continue to be fit for purpose.

Syllabus 2019 will be operational from 1 September 2019.