

Report

The Annual Report of the RSGB Examination Standards Committee

November 2021

This report covers the operation of the Amateur Radio Examinations during the calendar year 2020. The ESC meeting, which normally takes place in late March/early April of the following year was postponed in 2021 due to the continued covid-19 pandemic situation. A majority of the Committee members preferred an in-person meeting as soon as it was considered safe to hold it. Consequently, an in-person meeting was held on 15 September 2021 at Kent's Hill Conference Centre in Milton Keynes. The meeting reviewed the reports from the various officers and sub-groups and considered a number of proposals on matters including Foundation level practical assessments, and mock examination papers. On the basis of the reports received, it is concluded that as at 31 December 2020, the Amateur Radio Examinations are/were fit for purpose for the issue of UK amateur radio licences.

In 2020 the RSGB Examinations Department (ED) and the Examinations and Syllabus Review Group (ESRG), overseen by the Examinations Standards Committee have continued their main task of operating the amateur radio examinations process. The total enrolment on all examinations was just under 42% higher than in 2019 and the pass rate was 8% up compared to 2019. In March 2020 covid-19 pandemic control measures, including full lockdowns, were put in place across the UK, and these continued throughout the year. The implementation of RSGB Remote Invigilation of online exams, taken at home, along with distance learning provision by some clubs and organisations allowed candidates to access training and exams during club closures. These circumstances will have inevitably affected the exam figures and so direct comparisons with previous years should be treated with caution.

Anthony J Kent, G8PBH

esc.chair@rsgb.org.uk

1. Introduction

The role of the RSGB Examination Standards Committee (ESC) is to ensure the examinations system is fit for purpose so that licensed radio amateurs can enjoy their hobby legally and safely, without causing interference to the public, and be good citizens on-air. In addition, that they understand how to get the best out of the hobby at whatever level they choose 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.

The annual reports of the Examination 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 Examination Standards Committee and the agreement between Ofcom and the RSGB.

The data and analysis presented in this report covers the examination period 1 January to 31 December 2020 and was considered at the September 2021 meeting of the ESC.

2. Membership of ESC

The terms of reference and constitution of the committee are set down in the Schedule of Terms between Ofcom and RSGB. The membership of the Examination Standards Committee at the time of writing this report is as follows:

Prof. Tony Kent, G8PBH, Chair

Paul Chapman, Ofcom

Dr. Donard de Cogan, M0KRK, Examinations & Syllabus Review Group Chair

Dave Wilson, M0OBW, Examinations Quality Manager & Board Liaison

Nigel Barker, M0HZR, Examinations Standards Manager

Dave Taylor, Wg Cdr Rtd, M0NAV, Air Cadet Organisation

Derek Hughes, G7LFC, Train the Trainers

Steve Thomas, M1ACB, RSGB General Manager, Exam Dept representative

Mike Bruce, M0ITI, Examinations Systems Review Manager

Prof. Hugh Griffiths, G4CNV, University College London

Dr Julian Gannaway, G3YGF

Murray Niman, G6JYB, BAE Systems AI-Labs

3. Assessment of Overall Examination Performance

The committee received reports from the Examinations and Syllabus Review Group (ESRG), the Examination Quality Assurance Manager and Examination Standards Manager (EQAM & ESM), the RSGB Examination 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 Examination Standards Committee is satisfied that the Foundation, Intermediate and Full examination syllabuses effective in 2020 were/are suitable for the award of Amateur Radio licenses. Further, the examinations are compatible with the CEPT harmonised arrangements set out in Recommendations T/R 61-01 and T/R 61-02. The committee will continue to review the syllabuses and examinations to ensure compatibility with international and national requirements and to respond to developments relevant to the hobby.

4. Review of the Report from RSGB HQ Examination Department (ED)

4.1 The year in retrospect

Total number of exams administered by the RSGB Examinations Department in 2020 increased by 41.9% compared to the previous year.

Published timescales for providing papers and results were maintained.

From April 2020, the only option to sit an exam was to do so online with remote invigilation. This has largely been popular with candidates and appears to have made the examinations more accessible.

As practical assessments were suspended, Registered Assessor applications were not processed after March 2020.

No International Amateur radio Exams were administered, but international candidates have been remotely sitting the UK exams during this period.

4.2 Exam statistics

Overall, there were total of 1,279 more candidates across all exam levels last year. 1,422 more at Foundation, 119 more at Intermediate, but 262 fewer at Full level. The pass rate increased at Foundation & Full levels, but decreased at Intermediate with a total of 3,791 successful candidates.

Level	2020			2019		2018	
	Candidates vs 2019	Candidates	Pass Rate	Candidates	Pass Rate	Candidates	Pass Rate
Foundation	+85.4%	3087	89.8%	1665	83%	1588	86%
Intermediate	+15.9%	868	87.4%	749	91%	746	93%
Full	-40.9%	378	68.3%	640	54%	474	61%
Total		4333		3054		2808	

Table 1 Numbers of candidates registered for the exams at each level for 2019 compared with previous two years.

The reduction in the number of candidates sitting the Full level examination was due to the RSGB Remote Invigilation not being rolled out for Full exams until October 2020 (see below).

2020 brought the struggles of Covid 19. Towards the end of March, exams began to drop off and ceased completely during the early part of April. The EQAM and Examination Department worked hard to find a way to introduce remote invigilation to online exams, which had been considered at an earlier ESC meeting, but hadn't been previously used. June & July saw a steep increase in Foundation level candidates sitting exams. There were no exams held for Intermediate or Full levels during April, May or June. July saw the return of the Intermediate exam and October brought back Full level exams.

It was reported that 26 candidates passed the Air Cadet exam, with 21 requesting a candidate number from the RSGB for Foundation equivalence. Those figures are included in the statistics.

4.3 Trends

Although the trend for the total number of exams observed across the previous 10 years had decreased slowly, 2018, 2019 have seen an increase with a substantial increase in 2020, Figure 1(a).

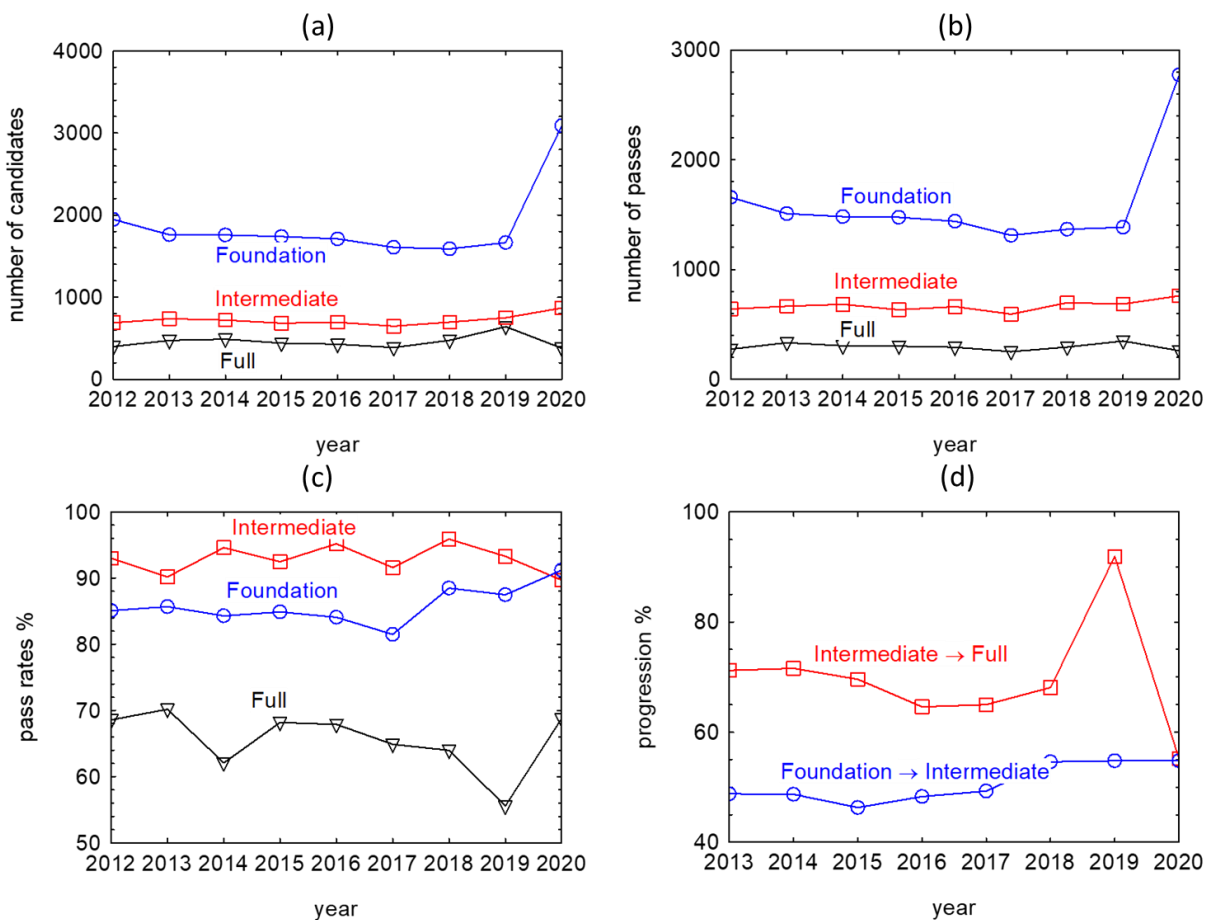


Figure 1 Exam statistics for past 8 years including the latest data from calendar year 2020 (the data presented for 2012 is the average of the 5 years to 2012): (a) numbers of registered candidates at the three levels; (b) numbers of passes at the three levels; (c) pass rates (not counting registered candidates that didn't attend the exam); (d) progression rates, using data for the lower level from 2019.

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 (which explains the small differences with Table 1). The progression rates shown in Figure 1(d), are 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 has been difficult to keep track of individual candidates, and the method used still provides a useful indication of progression). The sharp decrease in progression to Full, despite the increased pass rate, was due to the record numbers of candidates attempting the Full exam in 2019 (ahead of the introduction of the new syllabus in September 2019), followed by the Full exam only being available for about 6 months in 2020.

This is the first full year of statistics following the implementation of the new syllabus in September 2019. As said in the summary, the circumstances in 2020 mean comparison with previous years should be treated with some caution. However, the pass rate is slightly increased for Foundation, so it appears the adoption of the new syllabus did not raise the entry bar. The pass rate is slightly reduced at Intermediate, which may reflect the movement of some material from Full to Intermediate, which took place in the syllabus review. The sharp increase in the pass rate at Full is largely due to a recovery from the sharp drop in 2019, which was attributed to candidates rushing to sit the exam before they were ready in order to take it before the syllabus changed.

5. Review of the Report from the Examinations and Syllabus Review Group Chair

The Examinations and Syllabus Review Group (ESRG) welcomed two new members Gregory Fenton, M00DZ and Jonathan Groves, M0VRI who have settled in very quickly and have been doing sterling work in progressing the objectives of the Group.

The ESRG had been e-meeting twice a week almost since the start of the Covid pandemic. The Group had set itself ambitious targets, including: bringing the Direct-to-Full (D2F) syllabus from inception to completion; to progress version 2 of all three levels of our existing syllabuses; to work on filling perceived gaps in the question bank as well as maintaining and updating existing questions.

For quite a long time progress was swift and following completion of the draft D2F syllabus a survey of the UK amateur radio community was carried out. The response was overwhelming with the vast majority (typically 90%) of the respondents in favour of the project. There were the outliers on both sides "this is a hobby not an academic exercise" and "it is not hard enough", but strangely there were relatively few comments which could be taken into account when preparing revisions. The Group was however very fortunate that certain individuals and groups made detailed suggestions which were discussed and implemented.

Progress was delayed when other matters intervened. Several external changes dictated that the ESRG consider immediate alterations to the current syllabus content. The IET Wiring Regulations have incorporated significant changes in relation to earth bonding and the Group had to seek assistance from people who are specialists in this area to provide suitable words for inclusion in syllabus updates. More recently (moving also into 2021) the ESRG have had to address Ofcom's requirements for EMF compliance, certification and testing, and was fortunate to have had some very valuable suggestions from EMC Chair John Rogers, M0JAV.

While all of this has been going on the Group has been considering a large number of questions for addition to the bank in order to bring the number of questions available for all learning points up to a viable level.

During the period which is covered in this Report there have been no appeals. There has been 13 challenges, of which 4 were upheld and a handful of queries. A query is when a candidate writes in questioning (not formally challenging) the answer to a question.

6 Review of the Report from the Examination Quality Assurance Manager (EQAM) & Examinations Standards Manager (ESM)

6.1 Exam centres and age and gender statistics

There's generally a good spread of candidates across the country, as shown in Table 2. After a slow start in the 1st Quarter of 2020 numbers across the country rose significantly.

The % female to male candidates remains disappointingly poor at less than 5%. Of the 3,087 candidates taking the Foundation exam in 2020 only 172 were female, with 22 out of 868 at Intermediate and more alarmingly only 6 out 38 at Full.

The 40 – 59 age range accounted for just over 53% (46% 2019) of candidates taking the exams (Table 3). The number of youngsters (<=19 years old) taking the exams, 268, fell in 2020 compared to 2019 (400), despite the increase in overall candidate numbers. Possible reasons for this are the disruption to school education during the pandemic, requiring more effort from them to keep up, and the reluctance to engage in yet more online learning.

Foundation															
Region	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Grand Total
Jan-20	2		14	7	31		1	5	17	13	3	9	2		104
Feb-20		19	22	7	30		4	6	24	28	2	21	15		178
Mar-20	3	4	16	20	6	1	18	4	17	14	4	7	6		120
Apr-20	13	6	11	13	14		2	1	18	10	11	6	8		113
May-20	14	17	35	39	22	6	7	9	43	39	20	37	19		307
June-20	31	27	64	66	54	5	21	9	57	75	50	65	39		563
July-20	33	21	61	76	52	8	23	9	51	76	43	49	26	1	529
Aug-20	15	20	28	29	36	2	8	2	31	34	32	26	13		276
Sep-20	6	10	36	34	20	6	9	7	20	38	26	29	10	2	253
Oct-20	10	13	36	28	14	4	7	6	30	46	20	26	15		255
Nov-20	8	13	21	16	17	3	7	5	23	18	18	24	8	4	185
Dec-20	11	8	23	24	15	3	7	4	19	37	11	17	15	10	204
Grand Total	146	158	367	359	311	38	114	67	350	428	240	316	176	17	3087

Intermediate															
Regions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Grand Total
Jan-20			1	2					1		3	1			8
Feb-20	1	5	1	2	2				15	2		4	2		34
Mar-20		2	4	3	1				4	1		5			20
Apr-20															0
May-20															0
June-20															0
July-20			2	5	3		1		6	5	3				25
Aug-20	10	8	29	35	25	2	10	4	28	34	15	25	8		233
Sep-20	13	13	17	25	26	3	10	7	19	26	13	9	11	1	193
Oct-20	4	6	20	12	17	6	3	2	15	20	13	16	11	1	146
Nov-20	8	6	8	13	8	1	1	5	14	18	4	16	11	2	115
Dec-20	8	7	8	8	8	1	5	1	17	15	7	6	2	1	94
Grand Total	44	47	90	105	90	13	30	19	119	121	58	82	45	5	868

Full															
Regions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Grand Total
Jan-20		1	2	3	4		1		1	2		4			18
Feb-20					2				5	5			2		14
Mar-20	1	3	4		1			3			1	3	1		17
Apr-20															
May-20															
June-20															
July-20															
Aug-20															
Sep-20															
Oct-20	1	3	5	4	2	1	4	2	3	5	9	7		2	48
Nov-20	9	3	16	19	20	2	8	2	26	29	8	12	10	3	167
Dec-20	9	10	12	12	12	2	2	4	13	14	5	12	5	2	114
Grand Total	20	20	39	38	41	5	15	11	48	55	23	38	18	7	378

Table 2 Exam candidate numbers by region (2020)

6.2 Challenges & Appeals

No challenges were received in respect of the manner in which exams were run i.e. using remote invigilation – on the contrary many candidates praised the RSGB for the way they'd made exams available. However, there were a very small number of candidates who for reasons outside their and the RSGB's control had technical issues, the temporary loss of an internet connection being the most

common. The vast majority of those were resolved at the time i.e. the internet connection returned and invigilators were able to resume the exam. Where the internet connection didn't reappear candidates were offered a free re-sit at a time to suit them.

As previously mentioned in Sec. 5, a small number of challenges were received in respect of questions with no appeals as to the outcome of those challenges.

6.3 Progression

As mentioned in Section 4.3, the traditional method of monitoring progression, while giving an indication is less than ideal. In 2020 monitoring progression by actually tracking candidates was trialled:

A total of 790, mainly new Foundation candidates sat an Intermediate exam, only 74 of those were candidates who'd taken their Foundation exam prior to the introduction of remote invigilation.

In a similar way, a total of 376 Foundation candidates sat and passed the Intermediate exam and subsequently went on to sit the Full level exam. 18 of those had taken their Intermediate exam prior to the introduction of remote invigilation.

A total of 139 Intermediate candidates took the Full exam in 2020 – these had all taken their Intermediate exam prior to the introduction of remote invigilation.

This method gives a much more accurate picture of the progression within a year, but, to see the trends, more years of data will need to be collected using it.

6.4 Inspections

As part of the remote invigilation process all exams are recorded in case of challenges etc. with recordings being deleted after four working days. At its peak 35 remote invigilators were invigilating over 500 exam sessions per month – inspecting 10 or even 5% of those recordings wasn't practical

2020						
Age	Total		Male		Female	
0-9	3	0.1%	2	0.05%	1	0.50%
10-14	119	2.7%	102	2.47%	17	8.50%
15-19	146	3.4%	140	3.39%	6	3.00%
		6.2%		5.90%		12.00%
20-29	316	7.3%	288	6.97%	28	14.00%
30-39	701	16.2%	657	15.90%	44	22.00%
40-49	947	21.9%	900	21.78%	47	23.50%
50-59	1357	31.3%	1312	31.74%	45	22.50%
60-69	592	13.7%	582	14.08%	10	5.00%
70-79	145	3.3%	143	3.46%	2	1.00%
80+	7	0.2%	7	0.17%	0	0.00%
	4333		4133	95.38%	200	4.62%
Foundation	Intermediate	Full				
3087	868	378				

Table 3 Age and gender statistics

bearing in mind that sort of demand. As EQAM at least 5 recordings per week are reviewed. A random selection of recordings were also reviewed by the ESM and ESC Chair. Each candidate taking an online exam has a different set of questions.

6.5 Online Examinations

Prior to the pandemic the 1st quarter of 2020 was following the same, or similar ratio of paper to online exams, i.e. in that period paper exams accounted for 71% of all exams taken. After March 2020 all exams were online under remote invigilation.

6.6 Future Plans

At the end of 2020 no-one had any idea as to how long the pandemic was likely to last the only plan going forward was to ensure there were enough remote invigilators on hand to satisfy the significant increase in demand for amateur radio exams.

7. Review of the Report from the Royal Air Force Air Cadets (RAFAC)

7.1 General

1. RAFAC was restricted by Covid Regulations from late March 2020 hence no Foundation Training was completed for the rest of the year, leading to this short report.
2. Some operator training had continued using Channel D, the RAFAC Voice over IP simulator and using TEAMS for remote learning however I was loathe to allow Cadets to have NO On-Air Training during the course. Any peculiarities in operating live would have brought comments from the Amateur Fraternity about poor standards amongst Cadets and I was not going to allow that to happen.

7.2 2020 Results

- By March 2020, 99 Cadets had initially registered for the exam. However due to course cancellations resulting from Covid 19 restrictions, only 35 candidates actually sat the exam.
- 35 Cadets took the exam.
- 26 candidates passed first time pass rate. (74.2%)
- There were no retakes due to RAFAC banning face-to-face training from late March 2020.
- 9 complete fails therefore.
- 7 courses were cancelled – all due to Covid restrictions in force. This resulted in a further 65 exams not being taken.
- Not enough exams were available to analyse any trends. 1. Overall, the average pass mark was 83.92%. 2. RAFAC has now gone back to face-to-face training and this has already prompted four courses each of 12 Cadets. The Army Cadet Force are also negotiating to restart Foundation Training for their Cadets and in Scotland the Sea Cadets are joining in with RAFAC courses.

7.3 Inspections & Irregularities

No Irregularities have been reported, 1 exam was moderated at RAF Halton in Feb 2020.

8. Conclusions

Anyone who is involved with any sort of education, training and examinations will know what a difficult year 2020 turned out to be. However, due to the efforts of RSGB Tutors, RAFAC Trainers, RSGB Remote Invigilators, the RSGB Examinations Department and the Examinations and Syllabus Review Group, a record number of 2,800 candidates demonstrated that they had achieved the standard for a Foundation licence in 2020. The number of candidates successfully progressing all the way to meet the standards for a Full licence in 2020 was 258.

All the reports that were presented at the September 2021 meeting and summarised in Sections 4 – 7, above, were discussed and accepted by the Examinations Standards Committee. Overall standards were maintained in 2020 despite the difficult circumstances presented by the covid-19 pandemic and the amateur radio examinations continue to be fit for purpose.

9. Other Matters Considered at the September 2021 ESC Meeting

Although not directly relevant to the performance of the examinations system in 2020, other matters were considered by the Examinations Standards Committee in September 2021:

1. **Mock exam papers:** It was agreed that questions could be released from the RSGB question bank for the generation of representative mock examination papers at each level.
2. **Foundation Practical Assessments:** these were suspended during the pandemic, and it was necessary to consider if they would be reinstated now that covid-19 restrictions were ended. It was agreed that the practical assessments in section 10 of the current Foundation syllabus should be discontinued permanently as they are incompatible with the distance learning and remote-invigilated examinations which had proved so successful in making the exams accessible during 2020 and 2021.
3. **EMF:** The committee considered and approved the proposals for inclusion of EMF-related elements in an interim syllabus release.
4. **Paper exams:** The ESC supported proposals to phase out paper exams, except for candidates who can make a case for them based on special needs.

At the time of writing 1 and 2 have already been announced and the ESRG is working on the final version of the syllabus revision 1.5 including the EMF amendments and the associated examination questions. This is to be announced shortly, with six months' advanced notice of implementation.