11An Integrated Examination Session

Despite the benefits of computer automation, printed CSCE's, and an efficient CW audio system, the examination session at the 1993 New England Division convention would have been a disaster without careful planning and organization. Planning meetings were held in the months before the convention to determine the best way to run a large walk-in session. There is a very real risk of losing control of the session due to mass chaos and confusion. The major issues that need to be covered to avoid running into trouble are:

- Physical security of examination materials
- Minimizing the possibility of cheating and/or fraud.
- Paperwork - Getting it, tracking it, keeping it all together.
- Ensuring candidates come in, test, and leave as efficiently as possible

These issues were addressed by:

- Well laid out examination area
- A single point of entry and exit
- Positive verification of identity of everyone in the examination area
- Preparation of a large quantity of unique examinations
- Pre-screening outside the examination room
- Providing job descriptions for each task that would be performed.
- Assigning VE's to specific job(s) and ensuring that that the responsibilities are understood

11.1Physical Layout of Examination Area

Figure 11-1 shows the physical layout of the examination area used for the session. There was a single door for entry and exit. All other doors were locked and blocked off. Space was provided outside the examination area for candidates to prepare 610's. VE's were available to answer questions. Three VE's were located directly outside the single entrance. Two were seated at a table and would provide the initial checks of identification, and verify that the candidate had the proper originals and photocopies of any required paperwork. A copier was located just inside the examination area in the event a candidate was only missing a photocopy. The third VE stood in the doorway and provided the physical security for the examination area. No one was allowed into the room unless they provided:

- Positive ID (personal recognition by another VE qualified) and a valid VE badge.
- Positive ID and valid ***SIGNED*** FCC form 610.
- Positive ID and a valid CW reservation
- Positive ID and a valid re-admittance pass.

Positive ID for candidates was any FCC approved identification. In the event a candidate had to leave the room between tests, or if a candidate was registered for a CW examination at a later time they were given a pass to re-enter the examination room. Passes were issued by a single VE, and were signed by that VE at the time of issue to prevent unauthorized duplication of the pass.

11.2Managing Unique Examinations

To minimize the possibility of cheating and to reduce the monitoring burden on the VE team, unique examinations were prepared for each license class. The numbers ranged from thirty-six unique copies of the Novice and Technician exams, to ten for the Amateur Extra exam. Of major importance is the ability

to be able to quickly and reliably identify the appropriate grading template to use for each exam. Failure to this will result in a backlog of examinations.

All examinations were generated using the ARRL's GENTEST software. The test design numbers were designed to encode the examination element and the template number. The information was encoded twice in case the candidate made a mistake in writing down the test number and it was not caught before the answer sheet and examination were separated. Each test design number was nine digits long. The first three digits encoded the examination element and template number in a numbering scheme called "nines-complement". This prevented duplication of the same sequence of digits at the beginning and end of the test design number. It was felt that if a candidate might transpose or miswrite a number sequence, they might do it twice if the sequences were the same. Using nines-complement obscures the pattern and reduces this possibility. The last three digits encoded the examination element and template number in a normal manner. The middle three digits were generated randomly providing a thousand different examination possibilities within a particular element and template. Table 11-1 provides the mapping from examination element to element key number. Table 11-2 provides the equivalent nines-complement values for each digit. Table 11-3 provides some examples

Figure 11-1   Convention Examination Layout
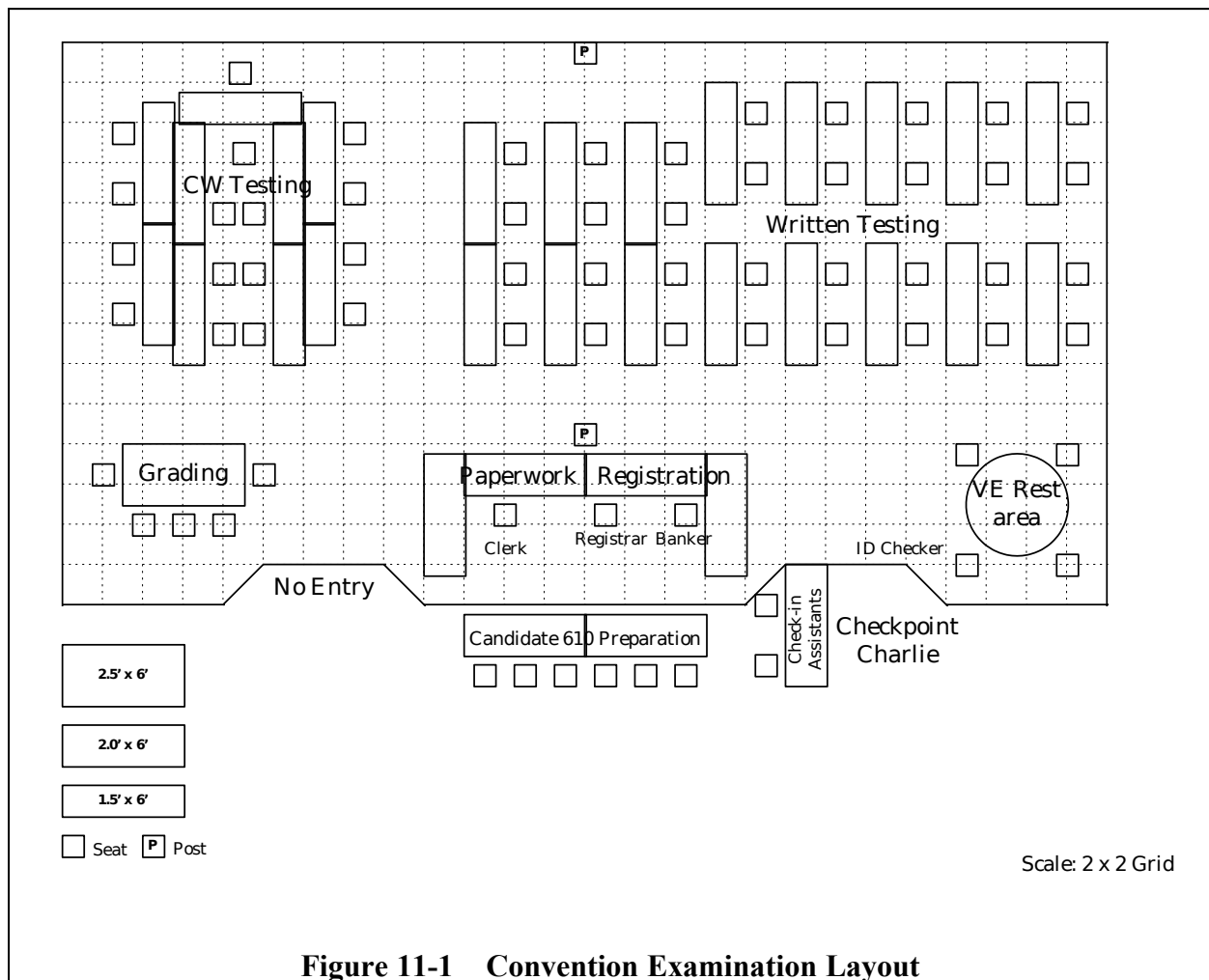
Test Element	Element Key	Element
2	1	Novice
3A	2	Technician
3B	3	General
4A	4	Advanced
4B	5	Extra

Table 11-1   Element Key

Normal Digit	9's Complement
0	9
1	8
2	7
3	6
4	5
5	4
6	3
7	2
8	1
9	0

Table 11-2   Nine's Complement Chart

Test Design #	Element		Template
876999123	Novice	2	2-3
738762261	Technician	3A	6-1
675104324	General	3B	2-4
507654492	Advanced	4A	9-2
437232562	Extra	4B	6-2
728412217	Technician	3A	7-1, Where
the last 2 digits of the test number are transposed.			

Table 11-3   Sample Test Design Numbers

11.3 Job Descriptions

There are a number of tasks that must be accomplished in order to have a successful, efficient examination session. The frantic and chaotic activity of a large session make it easy to overlook a task. To help prevent that from occurring, a number of specific "job descriptions" were written. These explained the task and detailed specific steps and possible pitfalls. Each VE was assigned one or more jobs. The following paragraphs describe each of the "jobs".

11.3.1 Team Leader/Gadfly

The session team leader is responsible for the preparation and planning of the session. This includes:

- Verifying suitability of the examination site. This includes power availability, room layout, lighting, seating capacity, etc.
- Putting together a team of VE's to run the session
- Assigning specific tasks to each VE.
- Resolve any issues arising during the session

The team leader's primary role during the session is to be the gadfly. No other permanent jobs were assigned. The team leader needed to be available to handle each and every crisis as it arose. Familiarity with every other task was essential, and allows the team leader to identify problems and take steps to correct them.

Things to remember:
- Decide and delegate
- Don't get tied down performing another VE's task
- Give priority to the banker, registrar, clerk, candidates/floorwalkers, and graders, in that order. It helps prevent bottlenecks from arising

11.3.2 Check-in Assistant

Check in assistants are the first VE's to make contact with the candidate. They are located outside the examination area. They are responsible for verifying the candidate has everything needed for the examination. Since they are not in the examination room they are not official ID checks. They provide a prescreening of the paperwork to minimize disruption once the candidates enters the examination room. Checks include:
- Valid ID
- Original license and photocopy
- Original CSCE's and photocopies
- A properly filled-in, ***SIGNED*** FCC form 610

Things to remember:
- Form 610 filled out properly (Check every field!), including
  - Year of birth is not the current year
  - Item 6 (environmental impact) choice selected
  - Candidate's signature present
  - Nothing in section 2 is checked
- Remove excess documentation (e.g. CSCE for 1A with a Technician Plus license)
- Have candidates keep ID out since there will be further ID checks

11.3.3 ID Checker

The ID checker, located at the entrance to the exam room, is responsible for ensuring that only authorized individuals gain entry. This is the first offical ID check. Positive ID is ***always*** required. Additionally each person must have one of the following:
- A valid VE badge.
- A valid ***SIGNED*** FCC form 610.
- A valid CW reservation
- A valid re-admittance pass.

For candidates, the ID checker is also responsible for verifying the candidate's paperwork. This includes:
- Original license and photocopy

- Original CSCE's and photocopies
- A properly filled-in, ***SIGNED*** FCC form 610

Things to remember:
- Positive ID is always required!
- Form 610 filled out properly (Check every field!), including
  - Year of birth is not the current year
  - Item 6 (environmental impact) choice selected
  - Candidate's signature present
  - Nothing in section 2 is checked
- Remove excess documentation (e.g. CSCE for 1A with a Technician Plus license)
- Have candidates keep ID out since there will be further ID checks

11.3.4 Banker

The Banker is the first of the three VE's located behind the paperwork table. This is the second official ID check. Responsibilities of the banker include:
- Collecting the test session fee
- Refunding the fee to candidates that have only taken elements 1A or 2
- Positioning the FCC form 610 for data entry by the Registrar.
- Verifying ID and all paperwork
- Determining which elements the candidate wants to take.
- Filling out and signing CW reservations and re-admittance passes

If a portable copier is available, it should be located near, and operated by, the banker. The banker needs to be familiar with the duties of the registrar and the clerk. If a candidate is only interested in a CW test and is scheduled to test at a later time, the candidate is given a CW reservation and told to return 10 minutes before the test is scheduled. Returning candidates go directly to the ID checker at the door, bypassing and initial registration line.

Things to remember:
- Pick an order (e.g. Check 610, Give to Registrar, Verify remaining paperwork, collect fee) and stick with it
- Positive ID is always required!
- Form 610 filled out properly (Check every field!), including
  - Year of birth is not the current year
  - Item 6 (environmental impact) choice selected
  - Candidate's signature present
  - Nothing in section 2 is checked
- Inform the registrar of CSCE credits and dates!

11.3.5 Registrar

The Registrar is the second of the three VE's located behind the paperwork table. This is the VE operating the computer and provides the third official ID check. Responsibilities include:
- Verifying ID and paperwork
- Entering the candidate's information into the VEWD program
- Determining which elements the candidate wants to take. (If not done by banker)
- Passing the candidate off to a seater or back to the Banker for a CW reservation

- Passing the paperwork to the clerk
- Recording grades

The registrar needs to be very familiar with the operation of the VEWD program. The registrar also needs to be familiar with the duties of the banker and the clerk.

Things to remember:
- Positive ID is always required!
- Form 610 filled out properly (Check every field!), including
  - Year of birth is not the current year
  - Item 6 (environmental impact) choice selected
  - Candidate's signature present
  - Nothing in section 2 is checked
- Double-check license class, especially if already in the database.
- Watch out for candidates with similar or identical names. Especially Sr., and Jr.
- Be clear about any notes made.
- Return all originals!
- Always look at the grades entered!!!

11.3.6 Clerk

The Clerk is the third of the three VE's located behind the paperwork table. Responsibilities include:
- Initially filing the candidate's paperwork
- Adding examination papers when they arrive
- Removing CSCE's and 610's from the printers
- Putting together the final paperwork package for signatures
- Verifying the CSCE is consistent with the paperwork

The clerk also needs to be familiar with the duties of the registrar and the banker. The level of filing detail required is a function of session size. For average sessions, an expanding 14" by 9" folder labeled from A to Z is sufficient. Candidates are filed alphabetically by first letter only. Keep the candidate's paperwork vertical and sticking out from the folder until they complete, then place it down into the folder. For a large session, individually labeled manila folders keep better track of the paperwork. Candidate's are filed alphabetically by last name. The manila folders can be kept in a suitable box or placed in hanging folders.

Things to remember:
- Don't get distracted. Finish filing what's in your hand before taking something else.
- Verify the CSCE credits against the paperwork. Draw a circle around the elements earned *after* verification!
- Verify the printed form 610 data against the ***original*** form 610.
- Have well-defined places to pile the inevitable backlog, including:
  - To be initially filed
  - Continuing candidates' exams
  - Completed candidates' exams
  - Waiting for signatures
  - Done, finished, candidate gone.
- Watch out for candidates with similar or identical names. Don't mix up the paperwork.

- If using paper clips, put a paper clip on single 610's. It will be needed later when the first exam results arrive.

11.3.7 Seater

The Seater is responsible for seating the candidate after registration and providing the initial examination and instructions. The job of seater is often combined with the notifier and floorwalker jobs. At least one seater must always be near the registrar to take the newly registered candidate and to get from the banker or registrar which test element to provide to the candidate.

Things to remember:
- Don't leave the registrar unsupported.
- All elements issued must be cleared by the registrar
- Check candidate's calculators
- Make sure all chiming watches are off.
- Explain how to fill in the answer sheet, with emphasis on the candidate's name, element number, and test design number.
- Tell candidates to raise their hand for assistance

11.3.8 Notifier

The Notifier is responsible for:
- Picking up graded examinations
- Notifying the candidate of the grade.
- Determining if the candidate is done, or is going to take another element
- ***NOTIFYING THE REGISTRAR OF THE GRADE AND STATUS***
- Delivering the examination paperwork to the clerk
- Delivering the next exam element to the candidate.

The job of notifier is often combined with the seater and floorwalker jobs. It is critically important that the registrar be told the grade and continuation status of the candidate. If the database is not constantly kept up to date, the session will become a disaster. The most efficient way to tell the registrar is:
- Wait until the registrar is ready.
- Give the candidate's last name.
- Wait until the registrar gets the candidate's record and confirms it (by saying the first name for example)
- Indicate grade (passed, failed) followed by the element number
- Indicate what the candidate is doing next (Done, taking element x)

Don't hand the examination to the registrar or hold it out in front of you. The registrar will be looking at the computer screen, not you. For example:
- Smith, Mary   Passed 3A,   Taking 3B
- Doe, John T,   Failed 4A,   Done
- Jones, Fred C Jr.   Failed 2   Re-registering

Things to remember:
- Do not discuss or show results to the candidate, Pass/Fail and number right only.
- Ascertain complete or done status
- Know what the re-registration criteria are and whether the candidate is eligible
- All elements issued must be cleared by the registrar

- Explain how to fill in the answer sheet, with emphasis on the name, element number, and test design number.

11.3.9 Floorwalker

The Floorwalker is responsible for:
- Monitoring the candidates
- Picking up completed examinations
- Verifying the candidate has recorded their name, the test design number and element number on the answer sheet.
- Verifying that no marks were made in the test booklet.
- Bringing the examination to the graders.
- Returning the examination to the pile.

The job of floorwalker is often combined with the seater and notifier jobs.

Things to remember:
- Be observant. Keep checking the candidates.
- Verify the test design number is written correctly before separating the exam booklet from the answer sheet.

11.3.10 Grader

The grader has the most straightforward task, but one of the most important. Graders are responsible for reliably and accurately grading each examination.

Things to remember:
- Be careful and thorough.
- Align the template properly (if using the overlay keys)
- Make sure the notifiers know when an exam is graded.

11.3.11 CW Tester/CW Assistants

The CW tester is responsible for running each of the code tests during a session. This includes:
- Setting up and putting away the audio system
- Explaining the testing process to the candidates
- **Informing the registrar when the CW test starts _and_ stops**
- Operating the audio system and monitor the code tape

The CW assistants aid the CW tester. Their responsibilities include:
- Collecting CW reservations and including with the paperwork
- **Making sure the CW Tester informs the registrar when the CW test starts _and_ stops**
- Assisting the CW tester in the administration of the code tests.

Often the CW tester and CW assistants will grade the Morse tests. With the use of the audio bar this is more a matter of convenience than necessity since the code test can be held in the same area as the examination room.

Things to remember:
- Announce the session policy on dot-dash transcription
- Be observant. Keep checking the candidates.
- Verify the answer sheets are filled in properly.

11.3.12Awarder

The Awarder congratulates the new or upgraded amateur. This includes:
- Having the candidate review the printed CSCE and 610 for accuracy.
- **Having the candidate *SIGN* the CSCE and FCC form 610**
- Explaining "what happens next"
- Requesting the candidate wait at least 2 weeks before calling the FCC
- Returning all paperwork to the clerk.

With candidate signatures needed on both the CSCE and the printed FCC form 610 the single most important duty of the awarder is to ***GET THE CANDIDATE'S SIGNATURE!*** This is sufficiently critical that it may be best to assign this job to one or two VE's and not combine it with the seater, notifier, or floorwalker jobs.

Things to remember:
- **GET THE CANDIDATE'S SIGNATURE**

11.4Staffing Requirements

The number of Volunteer Examiners needed to run a successful session depends to some extent on the number of candidates that appear. Table 11-4 lists the minimum comfortable staffing levels for the "average" session.   Table 11-5 lists the minimum levels for a large session.

Job Description	# VE's
Team Leader/ID Checker/Awarder	1
Banker/Floorwalker	1
Registrar	1
Clerk	1
Check-in Assistant/Floorwalker/Seater/Notifier	1
Grader	3
CW Tester	1
CW Assistants	2
Total	11

Table 11-4   Staffing for a session of 15-35

Job Description	# VE's
Team Leader	1
Check-in Assistant	2
ID Checker	1
Banker	1
Registrar	1
Clerk	1
Seater	2
Notifier	2
Floorwalker	3
Grader	5
CW Tester	1
CW Assistants	2
Awarder	1
Total	23

Table 11-5   Staffing for a session of 100 plus