ONLINE HAM RADIO EXAMS – RULES AND PROTOCOLS

VIDEO-SUPERVISED ONLINE AMATEUR RADIO EXAMS

- The Lake Washington Ham Club Volunteer Examiner (VE) team administers both in-person and online exams. We are authorized by the ARRL-VEC (for in-person exams) and the GLAARG-VEC (for online video-supervised exams) to conduct these exam sessions so that the FCC will award amateur radio licenses.

- This document applies to our <u>online</u> video-supervised testing. It outlines the strict and comprehensive protocols used to maintain the integrity of the online test environment.[1]

- The protocols, procedures and requirements in this document are subject to change and will evolve over time. If you have any questions about your particular situation please contact us via email at exam.registrar@lakewashingtonhamclub.org

- In addition, there may be specific candidate accommodations authorized by the VE team. Please contact us if you need such an accommodation.

- **To schedule an exam, go here:** http://hamstudy.org/sessions/online and search for sessions administered by **AE7TD**.

Warning: You must be fully prepared for an online exam

You must be consistently scoring above an 85% on practice tests BEFORE you schedule an exam.

An online exam is more complicated and resource intensive than an in-person exam. Online exams require a minimum of 3 volunteer examiners per session, and only 1 candidate can be tested at a time. To be sure the exams are honest and fair, you will use a camera to scan around your room to verify the integrity of the exam environment and to view your face while you take your exam. You will share your computer screen with the VE team, so we see how you are using your computer while you take your exam. If you are not comfortable with this, please consider taking the exam in person at a future venue and date.

❏ **Practice for your exam:** It is **your responsibility to be fully prepared** since you will be taking the time of volunteers and a time slot from a long wait list of candidates. Be sure you are **consistently scoring above an 85%** on practice tests before you schedule an exam.

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[1] This document is adapted from the New England Amateur Radio Inc. (NE1AR.org) instructions at: https://nescitech.org/exam/ but modified to comply with GLAARG-VEC requirements and the practices used at LWHC Online exam sessions.

Equipment and information needed to take an online exam:

❑ You must have a primary computer (PC or Mac) for taking the exam. You must have the Zoom application installed (http://zoom.us) and running to share your screen while taking your exam(s). Zoom is a multi-platform computer application for video conferencing and collaboration.

❑ You must provide a real-time video and audio stream of you taking the exam. If possible, we recommend that the test-taking computer be a laptop with a built-in or detachable webcam or, if it is a desktop, that it has a moveable webcam that can be rotated around to show us your environment and your face as you are taking your exam.

❑ If your test-taking primary computer does not provide video and audio streams, e.g. it does not have a moveable webcam, you must have a second device, such as a smartphone, tablet, Chromebook, etc. that can run Zoom to provide a video and audio stream of you while you take the exam.

❑ You must be able to hear VE team instructions without the use of headsets or earbuds, for example, through your speakers on your computer. The VE team must also be able to clearly hear you and your environment during your exam, so a good reasonable quality microphone is needed. You cannot mute your microphone or pause your video at any time while you are testing.

❑ You must have a reliable, high-speed Internet connection. It must have enough bandwidth for your video, audio and desktop streams running at the same time for the entire exam. If you are sharing your connection with others, then you must arrange with them so that the bandwidth on your Internet connection is available solely for your exam. Kick the kids off their Netflix movie.

❑ You must have an approved web browser on your test-taking computer. Currently Chrome and Safari are approved. We believe that Firefox and Edge are OK and will likely work for most situations. We know that Microsoft Internet Explorer will **not** work with our software.

❑ While we will try to help candidates with issues that might arise using their computer(s), we cannot solve all problems. It is the candidate's responsibility to work with and solve any software (or hardware) problems that arise on their systems. This is particularly true for non-Windows computers, such as Macs, Linux, etc. There may be issues that arise where candidates cannot continue with the testing process and will be referred to in-person exam session.

❑ You must have a **quiet**, **distraction-free environment** to take the exam. Others are not permitted in the testing space—even if just passing through.

❑ Tell us if you have ever had a ham radio license in the past, **even if it is expired**. The FCC allows exam credit for a previous Technician (prior to 1987), General, Advanced or Extra-class license. However, it takes time to research your situation, so tell us BEFORE you come to the exam session. You may take the Technician exam and walk away with a General or Extra-class license.

Prepare the following BEFORE your online exam session:

❏ **Exam Registration:** Go here: http://hamstudy.org/sessions/online to register for an exam session. Search for sessions administered by **AE7TD** (who is our VE team liaison). After you register for an exam, the exam registrar will email you instructions for paying your exam fee.

❏ **Registration Fee:** You must pay the non-refundable $10 registration fee electronically to the Lake Washington Ham Club via PayPal. We will email you a link to do this after you have registered for the exam.

❏ **Parental Consent:** For children **under age 13**, a parent must complete a COPPA Consent Form and follow directions for sending it to the HamStudy.org web site who handles registrations. More information on COPPA is available here:
https://nescitech.org/wp-content/uploads/2020/05/ExamTools_COPPA_form.pdf
https://www.ftc.gov/tips-advice/business-center/guidance/complying-coppa-frequently-asked-questions

❏ **PHOTO ID:** ONE legal government issued photo ID will need to be shown on camera to the VE Team. Adults must show a US or state-issued driver's license, non-driver state ID, or passport. Under-18 students may show one of the above items, or a photo school ID or, if nothing else is available, an adult can vouch for the minor, but the government issued photo ID requirement transfers to the adult.

❏ **Federal Registration Number (FRN):** An FRN is required for your exam registration. If you do not have an FRN, you will be able to acquire one when you register for the exam. Or, you can get an FRN ahead of time by visiting the FCC's Registration page and clicking "Register for an FRN." You must ensure that the name on your registration exactly matches your FRN (First, MI, and Last). If you have now, or had in the past, a ham radio, GRMS, or other FCC issued license, then you may already have an FRN and you should use it when registering.

❏ **License Upgrading:** If you are currently licensed and you plan to take the General or Extra exam, you must ensure that your registration includes: (1) your current call sign, (2) your FRN must be the same as on your current license, and (3) your name (first, MI, and last) must be exactly the same as your current license. Your license upgrade will also do a "change of address" if your registration address if different from your current license. Lastly, we strongly recommend that you **not** register for an exam if you have any FCC applications pending, such as requesting a vanity call sign. Wait until all pending applications clear the FCC before you register for an exam.

❏ **No re-takes:** If you do not pass an exam and want to re-test, you must make another appointment and pay the $10 fee. We do not allow re-takes in the same session.

❏ **You must show that you are ready to pass to take another exam:** If you plan to take more than one exam, please tell us BEFORE you begin the testing process. If you pass an exam and want to take the next one, you must demonstrate that you are ready for the next exam using the same criteria as for the previous exam. We do not allow candidates to "just try" for the next exam. If you have prepared for more than one exam, then go for it! Otherwise we will ask you study for the next exam and make another appointment when you are ready.

❏ **Certificate of Successful Completion of Exam (CSCE):** When you pass the exam, we will offer you the chance to get a copy of your CSCE. Your Zoom client must be capable of downloading a file via Zoom Chat. If not, you can request a copy of your CSCE via email.

❏ **Exam results:** Also, at the completion of your exam, you may request a copy of your exam results, i.e. a list of the questions on your exam and which were answered correctly and incorrectly.

Prepare your Exam Room BEFORE the exam:

❏ **Clear the Exam Room** of *all* non-exam materials, papers, notes, books, posters, computer screens, calculators, watches, or anything that could aid in taking the exam. NO SMART WATCHES. Many people use a bathroom (although it then becomes unavailable during testing) or a clear dining room and that simplifies everything. You can test in a stationary vehicle (your camera must allow us to view the entire inside of the car), but not outdoors, or in a public space.

❏ **Clear your exam table, ceiling and floor** of ALL items within reach or view that would either distract you or raise suspicion, such as papers, sticky notes, electronic items, monitors, headphones, drink containers, waste baskets, food, drinks, and anything unnecessary for the exam. Any video and audio electronics in the room not being used for the exam (including TVs, additional monitors, and computers) should be turned off and monitors turned around so you cannot see the screen from your exam table.

❏ To get the correct angle for your camera, **you may be required to construct a stand** or other physical way to hold the secondary device at the required height and angle to show a clear view of your face. For an example:

A test-taking desktop machine using an iPad as the camera and microphone. Notice the homebrew "boxes" stand for the tablet. The iPad is turned around so it uses its higher-quality rear camera.

❏ Have ONE government issued PHOTO-ID ready to show.

❏ Have a large mirror available, if possible. Your VE team may ask to use the mirror to get camera shots that are otherwise difficult.

❏ Warn family members not to enter the room during the exam—even if just passing through. You must be left undisturbed.

❏ Plan with other family members so your entire Internet bandwidth can be dedicated to your usage during the entire exam period. Exams typically take about 30-45 minutes, although they can take longer if there are issues with your testing environment.

❏ You must NOT have any other people or pets in the exam room, other than a registered service dog. This includes parents of minor children.

Prepare your test-taking computer BEFORE the exam:

❏ You must have a working laptop computer with **built-in or detachable web cam**, microphone, and **reliable Internet** service, or you can use a desktop computer without a webcam if you have a secondary device with a camera and microphone that will be used to scan the room. Your face must be visible, and audio heard during the entire exam.

❏ You may use a simple Calculator app such as supplied by Windows or MacOS. Place it under the minimized Zoom windows. Make browser into a single square and place it and the calculator side-by-side.

❏ You may NOT use any kind of tablet, iPad, or Chromebook for your test-taking computer. Note: Linux may or may not work, it depends on the distro being used. You may however use these devices as secondary devices for their camera and microphone.

❏ Be sure that the computer and any secondary device being used is **fully up-to-date**. You do not want your computer to restart or install patches during your exam.

❏ Be sure the computer and any secondary device you will be using is **fully charged** or plugged in. If your computer or secondary device fails during the exam, the exam will be terminated.

❏ **While taking the exam, your video and audio streams must always be visible and audible the entire time.** Make sure that your microphone gain is turned up so all noises in the room including your voice and keystrokes can be clearly heard. Any disruption of the video or audio stream will result in the termination of the exam.

❏ **Remove ALL** audio devices, headphones, headsets, earbuds, smartwatches, hats, and anything that could be considered suspicious and unnecessary for the exam. **WE SAY AGAIN: YOU CANNOT WEAR A HEADSET OR EARBUDS**. We are serious about this. Take them off.

❏ **Disable** any chat, alerts, Bluetooth connections, virtual screens, screen sharing applications, or pop-up apps. The VE team will verify these applications are not enabled.

❏ **Disable** any VPN or other routing services. Use the straight Internet to get your highest Internet bandwidth. If available, hardwired as opposed to Wi-Fi connections are encouraged.

❏ **TEST** your Internet browser to be sure it is not full screen and **fits close to the edge of your screen, but not the entire screen (see photo above),** then **close it**.

❏ **QUIT ALL APPLICATIONS** except Zoom and optional calculator app.

❏ You must have **only one display screen** running on the computer. **Disable any virtual screens.** *(The exam team may end the exam immediately for non-compliance.)*

❏ **A simple Calculator App** may optionally be on your screen during the exam. **Load it in advance** and clear its memory if you need it.

❏ **Download Zoom** on both computer and any secondary device and use this link to TEST it (http://zoom.us/test).

❏ **Name your computer in Zoom** so we know who you are in the Zoom waiting room.
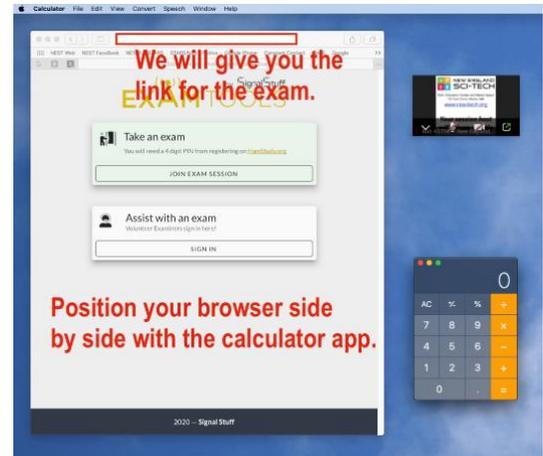
❏ **Join audio on the test-taking computer**; NOT any secondary device unless there is no way around it. This stops most audio feedback.

❏ Locate the green **SHARE YOUR SCREEN** option of Zoom. Practice with a friend. Make sure you know how to share your full screen, not just individual windows. The VE team needs to see your entire desktop display.

❏ Practice minimizing the **PARTICIPANTS DISPLAY BOXES** so they are not in the way of your browser or calculator.

▪ IT IS IMPERATIVE THAT YOU **PRACTICE USING ZOOM** AND KNOW HOW TO **SHARE YOUR SCREEN**. *(The team may end the session if you are not able to do this!)*

If using a smartphone or tablet camera as a second device, Prepare it BEFORE the exam:

❏ **Prop the phone up to view you and the computer from the SIDE.** Your VE team may ask you to reposition it later.

❏ Prior to the exam, the camera may be used to **scan the room**, the test-taking computer, and your hands for security compliance.

❏ During the actual taking of the exam, the camera is used to observe you.

❏ You must have an Internet-connected smartphone or tablet with **built-in camera**.

❏ Be sure the device is **fully charged** or (ideally) plugged in.

❏ Download **Zoom** on second device and use this link to TEST it (http://zoom.us/test).

❏ **Do NOT Join Audio on the second device unless necessary. Mute the device (microphone and speaker)** so it will not cause feedback.

❏ **Learn how to reverse the video from "selfie" view to room view and how to hold the camera in horizontal orientation.** *(The team may end the session if you are not able to do this!)*

❏ **Find a way to prop the phone up to see you and the computer from a SIDE VIEW HORIZONTALLY during the exam.**
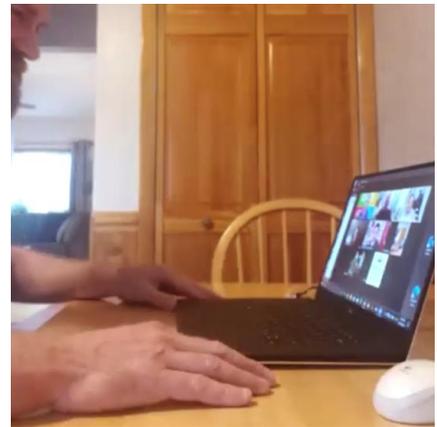
IT IS IMPERATIVE THAT YOU **PRACTICE USING YOUR CAMERA PHONE** AND KNOW HOW TO USE IT. *(The team may end the session if you are not able to do this!)*

THE INFORMATION BELOW IS ABOUT HOW YOUR EXAM SESSION WILL RUN

Steps to Follow 45 Minutes Before Exam Time:

1. Check again that the computer and any secondary device being used is fully up-to-date. You do not want your computer to restart or install patches during your exam.

2. Review all rules (above) to be sure your exam area, computer, and phone are set up correctly.

3. Be sure you have either your passport or driver's license ready. No other papers or documents are required—you do not need anything else.

4. AT LEAST 30 MIN or more before your appointment, join the Zoom session (both phone and computer) as sent to you in an email.

5. NAME YOUR COMPUTER and PHONE in the Zoom App so the VE team knows they are yours. EXAMPLE: "Jane Doe computer" and "Jane Doe phone"

6. Wait patiently in the Zoom waiting room until we bring you into an exam session.

7. When we bring you in, join audio on the test-taking computer but DO NOT join audio on any secondary device such as a smartphone, tablet, etc.

8. **QUIT ALL APPLICATIONS** except Zoom and (optionally) the on-screen calculator app.

9. Please let **the VE team lead you** with the step by step directions.

You must agree to the following PROTOCOL for ONLINE Exams:

❑ **Protocol for Online Exams:** (* Parent or guardian of a child candidate must be present for the rules and answer questions and to assist with computer or technical issues.)

1. You must complete the test without any interruptions that would raise suspicion about the integrity of the testing environment.

2. You must always focus your attention on your computer screen. Your eyes may not wander to other parts of the room and you may not leave your seat during the exam session.

3. Please remove any drinks, snacks, papers, or anything else from around your testing area.

4. You may not have any visitors or pets in the room during the test.

5. Your real-time video and audio streams must remain running the entire time you are taking your test.

6. If using your smartphone, tablet, or Chromebook as a second device, you will use it to scan the room, then place it so it views you, your keyboard, and both of your hands. You cannot take the exam on these devices.

7. Your exam will go quicker and with less interruptions if you will do not use scrap paper or a manual calculator. Both situations require us to verify the item prior to you starting your test and we may interrupt your exam if we see you glancing away from the screen. Tell the VE team monitoring your exam if you are going to glance away from the screen, and why.

8. Instead of using a manual calculator, we recommend that you pre-load an on-screen calculator app. Do you want to use a calculator app?

9. You must agree to **share your entire screen** with the exam team, not just the browser. Do you agree to share your screen? (*parent)

10. If there are issues, the VE team may record your session. If we do so, we will notify you. No recording will be done without your knowledge. You must agree that the **exam session will be recorded and stored** for up to 30 days in case of any question about a possible breach of exam protocol. Do you agree to be recorded? (*parent)

11. **You must agree that if the VE team suspects a possibility of cheating, the exam may be terminated and the exam fee forfeited, and you would be barred from taking future online exams.** Do you agree? (*parent)

At this point the VE team will follow this procedure: (Do not do this yet.)

1. We will ask you if you have ever had a Technician (prior to 1987), General, Advanced or Extra-class ham radio license in the past, expired or not.

2. We will ask you to show your **PHOTO-ID, front and back**, in the camera until every examiner can verify your identity. Then put the ID away and out of sight.

3. We will ask you to use your webcam, tablet, or phone camera and step back to show the computer and workspace, scan around the room, including walls, ceiling and floor, under the work table and chair, under laptop and keyboard, with a closeup of the computer, keyboard, hands, and arms.

4. *If using a secondary device, we will ask you to leave the device on and propped up to one side, aimed toward the computer, so that it can view you, your hands, and the computer.*

5. We will ask you to share your **full** desktop via Zoom, not just a browser window.

6. We will ask you to load and arrange a browser window and optionally position a calculator app next to it and show that the calculator memory is clear.

7. We will ask you to open your "Display Settings" to verify that there is only one video session running.

8. We will ask you to type in the browser address field the address to load the exam engine.

9. We will ask you to enter the session manager's call sign and your 4-digit PIN exam code that you received when you registered. If you do not remember your code, we will provide it to you.

10. We will ask you to keep your attention on the screen and keep your camera and microphone on.

11. **All VE team members now shut off their video and microphones, so we do not disturb you while you are taking the exam. They are still watching and listening. The exam will now begin.**

12. You will click on **Start the exam**. Take the exam. You may scroll up and down. You may change your answers as many times as you wish. There is no time-limit.

13. When you finish, press the **Grade Exam** button. At that point, your answers cannot be changed. Once the VEs certify the test your score will appear.

14. If you have prepared for the next level exam, you can click on "**Start <next level> exam.**" Once you pass this point there is no going back for you to take the next level exam. Choose wisely grasshopper.

15. **Now we will ask you to click the *Finish and Sign Forms* button, verify your name and address on the screen. You will be asked to read the statement on the 605 form and then electronically sign your name at the bottom to complete your exam application and CSCE.**

16. You will now click the **Close Session** button and then **Logout**.

17. **We will release your shared screen.**

18. We will explain that your exam application and scores will be processed this evening, so your license will appear in the FCC database within about 2 working days.

19. We will encourage you to join a local radio club for further learning opportunities.

20. We will encourage you to join the Amateur Radio Relay League, ARRL.ORG, for further learning opportunities and to support amateur radio on the national level. We will also encourage you to join a local RACES or ARES team.

21. We will offer you the chance to get a copy of your CSCE. Your Zoom client must be capable of downloading a file via Zoom Chat. Otherwise you can request us to email you a copy of your CSCE, but it may take several days for it to be processed.

22. You may request your exam results. We will share these with you the same way as your CSCE.

23. If you are using any secondary device, you should have it leave the Zoom session.

24. You are now free to **leave the meeting** on your primary and any secondary device you used. (The VE team may disconnect the candidate from the session.)