PRACTICAL-ly Software Presents

Novice/Technician Class Manager
General Class Manager
Advanced Class Manager
Extra Class Manager

For Windows

(Demo and Registered Program)

A Tool for Preparing for, and Testing on, the

**NOVICE/TECHNICIAN, GENERAL, ADVANCED and EXTRA CLASS
FCC EXAMINATIONS**

USER'S MANUAL

FOR IBM/COMPATIBLE COMPUTERS

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FEATURES:

- Simple, intuitive system for preparing for Ham License Examinations

- Perfect tool for Volunteer Examiners for creating tests

- Manages entire question pool

- Begin reviewing at any question

- Review questions sequentially or randomly

- Shuffle answers for each question if desired

- Take a test from randomly chosen questions (within the guidelines of the FCC testing criteria)

- Full set of options for customizing tests, including a Test Design Screen

- Print complete tests with printer-resolution graphics, along with answer sheets and score key

- Save tests to disk for later use

- Study assist screen tells you what areas you need to study after taking a test

- Pop-up on-screen calculator

- Automatically "remove" a question from the "question card deck" when answered correctly, if desired

- Manually remove any question from the "deck" at any time

- Reinsert into the "deck" any previously removed question

- Start review all over by putting all "cards" back into the deck

- Show answers always or only after an attempt at the answer has been made

- Saves all program settings so you can "pick up where you left off"

- Print any part of the question pool with printer-resolution graphics, or just print a sheet showing all the graphics

PRACTICAL-ly Software

PRACTICAL-ly Software

NOVICE/TECHNICIAN/GENERAL/ADVANCED/EXTRA CLASS MANAGERS
For Windows

Tools for Preparing for the FCC HAM Examinations

ABOUT THIS USER'S GUIDE: The information in this guide is applicable to PRACTICAL-ly Software's Windows version of NOVICE/TECHNICIAN CLASS MANAGER, GENERAL CLASS MANAGER, ADVANCED CLASS MANAGER, AND EXTRA CLASS MANAGER.

1 WHAT DOES THIS SOFTWARE DO?

This software is designed to perform THREE functions. 1) It's an INTERACTIVE DEMO that lets you poke around in the software, see how it's wired, and decide if it's really what you want to use to study for your HAM exam. If you like it, you can get a registration number from PRACTICAL-ly Software to completely enable all functions. 2) When registered, it becomes an extremely versatile tool to assist the learning process for anyone preparing for the Ham Examinations. And 3), it also provides to Volunteer Examiners a completely configurable way to generate tests, complete with graphics to administer to examinees for the Ham licenses. This program provides a user-friendly Windows environment to manage the question pool from which each test is drawn.

IMPORTANT!!

This software is distributed in the form of an INTERACTIVE DEMO. This means that you are able to look at the program and see how it functions, but it is only intended as a demo, and as such, some functions will not be enabled! However, if you like the program, you can **transform the demo into the FULLY FUNCTIONAL PROGRAM by simply obtaining a registration number from PRACTICAL-ly Software**. The DEMO will allow you to browse through the program and see for yourself exactly what it can do. If you register the software by following the directions in Section 14, PRACTICAL-ly Software will provide you with a registration number that will completely transform your DEMO into the fully functional program.

2 INTRODUCTION

Each Ham class has its own question pool from which test questions are drawn. This software manages the question pool by treating it like a deck of question cards, with each card containing one question. A deck of question cards really describes how the software handles the questions, and that terminology will be used frequently in this manual.

This software lets you go through the deck of question cards in several ways. When you look at a question, you have the option of seeing the answer when the question is displayed, or keeping it hidden until you have attempted to answer the question. When you determine that you know a question sufficiently that you need not see it again, you can remove that question card from the deck, either automatically when you correctly answer the question, or manually at any time. Thus, as you become more and more proficient with the questions, the size of the question deck decreases, letting you concentrate only on the questions with which you are still having trouble. When you have worked your way completely through the question deck in this way, you will have completely mastered the question pool!

At any time, you can take a test, just like you will see when you actually test for your license. As a matter of fact, your examiner may be using this same software to generate your test! You can print a test to practice, or you can take the test onscreen. As you progress through the onscreen test, your score is constantly shown as you answer each question. When you consistently make high scores, you can be assured of a high score on your actual exam!

3 GETTING STARTED

3.A Hardware Requirements

- Hard drive with about 1.6 megabytes of free disk space available

- DOS 3.3 or higher

- Microsoft Windows 3.0 or 3.1 or Windows 95

- EGA or VGA display monitor (color desirable, but not required)

3.B Installing the Software

This software is a Windows application program that is compatible with Windows 3.0 and 3.1. The installation process is done at the DOS prompt. The installation steps for each are listed below.

1. Make a subdirectory on your hard disk where you want to put the program. (For example, at C:\ type MD LICMGR2 to create a subdirectory called LICMGR2 in your root directory.) Beginning with version 2.5 of this software, it is no longer necessary to install each class program into separate subdirectories. All may now be placed into the same subdirectory if desired.

2. Change to the directory you just created by typing CD LICMGR2 (or whatever name you chose to use).

3. Copy all the program files into the new subdirectory on your hard disk.

NOTE ON VBRUN300.DLL: VBRUN300.DLL is a Windows system file that is required for all Visual Basic V3.0 applications to run, including this one. It is not included in the zipped file because many people already have it and shouldn't be required to download it unnecessarily. If you don't have VNBRUN300.DLL, you can download a copy of it from the PRACTICAL-ly Software BBS.

It is not necessary to have multiple copies of this file! If you copy this file to the C:\WINDOWS\ SYSTEM subdirectory on your hard drive, it will be available to all of your VB V3.0 applications.

4. Now run Windows.

5. Depending on which version of Windows you're running, perform the setup procedure for the program(s) as recommended.

The .EXE files for each program are listed below:

Novice/Technician Class Manager:	NOVMGR.EXE	*Novice and Technician are*
	TECHMGR.EXE	*two separate programs and*
General Class Manager:	GENMGR.EXE	*need to be set up separately.*
Advanced Class Manager:	ADVMGR.EXE	
Extra Class Manager:	XTRAMGR.EXE	

NOTE ABOUT PRINTING: All of the functions that involve printing do so through your computer's Windows Printer Setup. All print functions do so in a Courier 10 cpi font which is a standard font. If you have any problems printing, make sure your printer is correctly configured in Windows.

3.C Program Controls

The program is designed to be used primarily with a mouse, but to some extent, it can be controlled by the keyboard, too. However, some screens in the program need more than just a keyboard entry, and a mouse is required.

3.C.1 Keyboard Control

Generally, the program is controlled by using the "control buttons" on each screen, that is, graphic buttons which are shown on the screen. In this documentation, these buttons will be shown as **[BUTTON]**. Most of the buttons have a letter underlined in the caption on the button. This indicates the letter on the keyboard which will activate the button. To use these keyboard "HOT" keys, press the ALT button at the same time as the underlined letter.

Not all control buttons have an underlined character. These buttons can be "pressed" only by clicking the left mouse button when the mouse pointer is on the button or by tabbing to them and then pressing ENTER.

One of the buttons on the screen will usually be highlighted by a shadow around part of it. If you press ENTER, the highlighted button will be "pressed". If you want to highlight a different control button, TAB will switch to the next control. SHIFT TAB will switch to the previous control button.

3.C.2 Mouse Control

Using a mouse is the easiest way to control the program. All you have to do is point to the control button that you want to press and click. Most buttons that are program specific only require one mouse click, but buttons that are more Windows specific, such as when loading and saving files require a double-click. As a rule, just assume one click is required; if that doesn't work, use two.

Use of this software is very intuitive; you can run the program successfully with what you know now. However, to take full advantage of the many features that are built in, come back and finish reading about the details of the program. You'll probably find that this is the program you've been looking for. If it is, register your copy to fully enable all the features available to you.

4 THE TITLE SCREEN

The Title Screen is the first thing that you will see when you start the program. When you see this screen, the program is loading all the data that it needs to begin. This data includes most of the option settings which are found when the program last terminated. (This allows you to pick up where you left off when you restart the program. For more information on this, refer to section 5, THE MAIN MENU SCREEN.) Loading the data is almost instantaneous, but the actual speed depends on your computer.

The Registration Block will initially say that it is registered to UNREGISTERED and a button underneath is labeled **[Enter Registration Number]**. This indicates that your software is still an INTERACTIVE DEMO only. When you register your copy, PRACTICAL-ly Software will provide you with a registration number. To convert your demo to the full-featured program, press the **[Enter Registration Number]** button. Now enter your name EXACTLY as you were provided with your registration number, along with the registration number itself. Once you have the data entered correctly, press the **[Enter]** button. If you have done everything correctly, your name will show in the Registered To: box. If there's a problem, enter the data again, making sure that you enter upper case and lower case and all spaces and punctuation EXACTLY as shown with your registration. If you still have trouble, call the PRACTICAL-ly Software Technical Support number.

Once you are ready to either check out the software in DEMO mode, or if you're ready to fully use your registered copy, press or click **[Start]** to begin the program.

5 THE MAIN MENU SCREEN

The Main Menu lets you select which activity you want to do, whether it's reviewing the questions, accessing the test menu, changing the default options, or printing questions and/or graphics. The default options can either be changed now or while you are reviewing questions. However, the option screen is

not available while you are taking a test. (More on that in the section on Taking a Test.) The menu items available to you on the Main Menu Screen are now described in detail.

5.A Review Questions and Answers

When you select this option, a window and two buttons pop up onto the screen to allow you to enter which question card you want to start with. The cards are numbered from 1 to however many questions are in the question pool for the particular Ham class you're studying. If you are running the program for the first time, the number will be 1. If you have used the program previously, the highlighted number in the box is the number after the last question you looked at when you last quit the program.

To start with a different question than the one shown in the block, simply type the number of the question card and select **[Begin]**, or simply press ENTER.

If you decide that you don't want to review questions yet, select **[Cancel]**, and choose another option.

NOTE: **In DEMO mode**, you can only look at one question at a time on the Question Review Screen. You will not be able to go forward or backward while you are on the review screen. However, **you can still look at each question** in the question pool by coming back to the main menu, which will automatically increment the question number, and then go back to the review screen.

5.B Testing Menu

This menu contains options to either take a test onscreen or to print a test. You can even save tests to disk for later use! The details of the Testing Menu are discussed in detail in section 6.

5.C Default Option Screen

The default option screen will allow you to customize the way you review the questions. This screen is also available to you at any time when you are reviewing the questions, but it is not available during testing. A detailed explanation of the Default Option Screen is found in section 7.

5.D Print Questions and Graphics

Select this menu item if you want to print any or all of the question pool. In DEMO mode, you cannot use these functions, but by looking at the screen, you can see how straightforward this function is to use. The details of how to use this option are discussed in detail in section 8.

5.E Quit

Selecting Quit will terminate the program and put you back into Windows. This might take a few seconds, because some housekeeping has to be done. There are several files that are saved to disk so that when you restart the program later, you can pick up where you left off. The files that are saved are listed in section 12, "FILES THAT THE PROGRAM CREATES".

6 TESTING MENU

The testing menu is laid out to represent a logical sequence of events. In other words, when you make a selection, the testing menu screen will guide you to the next logical step. The first menu block involves either the automatic generation or manual creation or the loading from disk of a test. The center block indicates if there is a test in memory, and if so, what the name of the test is (which also indicates how the test was generated), along with the test class. The third block lets you select what to do with the test in memory: practice it, print it, or save it to disk. Each of these options will be explained in detail now.

6.A Loading a test

This block of options tells the program how to load a test into memory.

6.A.1 Generate Test

When you select an option to generate a test from the Main Menu, the program generates the test from the appropriate set of questions. It doesn't just randomly pick the questions out of the entire pool, but randomly chooses one question for each subelement. For instance, if a subelement has 20 questions in it, and one test question will come from that set, then the software will randomly pick one of those 20 questions to ask, etc. If two questions will be asked from the group, then the program will randomly pick two instead of just one.

This function simply selects the questions for your test. Later, you will have the option to shuffle the questions so they won't be in order, and you can also opt to have the answers jumbled, too, so you won't get used to the answer to a particular question being D each time, for instance.

If you let the computer generate a test for you, the Test Name block will indicate the name "NEW". Now you're ready to select Practice, Print, or Save. See section 6.6.B. for a discussion of those options.

6.A.2 Test Editor

The test editor is a utility to allow you to either create a test from scratch, or to modify an already existing test. This screen allows you to have total control over the questions in a test. The **[Test Editor]** button is placed in the test generator block on the Testing Menu because it is not necessary to create a test before you enter the test editor. The test editor can create a test from scratch, or it can modify a test that the computer has already generated. If you already have a test in memory (a test's name is displayed in the Test Name block), then the test editor will display the questions which make up the test already in memory, and you can change the question selections if you wish.

6.A.2.a Test Editor Operation

If you have a test in memory, the test editor will initially display the questions for the test in memory. If there is no test in memory, no question selections will be highlighted; you will need to select each question manually.

The screen consists of five columns (subelements), and in each column are listed the question codes for each subelement. To select a particular question in a subelement, just click on the code number. If there are too many questions in a subelement for them all to be displayed, a scroll bar to the right of the block will let you see the other questions. The number of questions that are drawn from each subelement are shown at the bottom of each column, as well as how many are currently selected. If a test is already in memory, the question codes will be highlighted in each subelement. If you want to select a different question, you must first **de**select a question, then select the new choice. If you try to highlight more questions than are allowed for a particular subelement, the program will remind you of the maximum number of questions you can select.

The buttons at the top of the screen will shift the columns to the left or the right either by one column or by five columns. The single arrows shift by one, the double arrows shift by five.

Once you have set up the test to your satisfaction, press the **[Make Test]** button at the bottom of the screen. (This function is not available in demo mode.) The questions which are currently selected in the test editor become the questions for the test in memory. Now when you return to the Testing Menu, the Status Block will show a Test Name of "MANUAL", since the test was manually created.

NOTE!! No changes which you make in the Test Editor become effective until the **[Make Test]** button is pressed.

If you press **[Make Test]** without the appropriate number of questions selected for each subelement, the program will tell you that the list of questions is incomplete. Complete the selection process for all subelements, and then click **[Make Test]**.

The **[Clear All Questions]** button is self explanatory.

6.A.3 Load Test

If any tests have been saved to disk, they can be reloaded into memory by selecting the **[Load Test from Disk]** option. All tests are saved with the filename extension ".xST", where the x denotes the Ham class the software is dealing with. For instance, Novice test extensions are ".NST", Technician extensions are ".TST", etc. See section 6.6.B.6.B.3. for more details. The box on the upper-left of the window will indicate the filename that you select to retrieve. If the test you wish to retrieve is located in another directory or on a different drive, then select the correct path using the subdirectory and drive selection boxes. Once the filename has been selected, either press ENTER or click **[OK]** to load the test. When the test is loaded, the filename will be displayed in the File Name box along with the test element designation underneath.

It should be noted that when a test is saved, any randomization of the question and answer order is not saved. If you want to have the questions and/or answers randomized, you will have to do that just prior to either practicing the test or printing the test. The randomization procedure is reaccomplished each time a test is practiced or printed.

Three sample test files should be in your default program subdirectory for illustration purposes, TEST1.xST, TEST2.xST and TEST3.xST, which can be loaded. These are just for illustration purposes. They are simply three tests which the program randomly generated.

6.B Test Actions

Once a test is loaded into memory, you can either practice taking the test, print the test, or save the test to disk for later. If you try to select one of these options before a test is loaded (no test name visible), the program will remind you to load a test first.

6.B.1 Practice

This is where you actually get to see how well you know the material. When this button is selected, a pop-up screen will show you how the program defaults are currently set as far as randomizing test questions and test answers. You have the chance at this screen to change the settings for the test that you are about to practice. Changing these options here will NOT change the DEFAULT SETTINGS as you have set them on the default option screen (see section 7), but it does provide a temporary override of the default options.

When the testing options are set, press **[Continue]** to practice the test. You can also press **[Cancel]** to abort the procedure.

A detailed explanation of the actual practice test is in Section 10, the "EXAMINATION SCREEN".

6.B.2 Print

If you want the test to be more realistic, print out the test and take it on paper. Also if you're a Volunteer Examiner, you need to be able to generate tests to administer. This function will print out the test for you. The test which will be printed out, of course, is the one in memory, the test whose name is currently showing in the Test Name window. You have complete control over which questions are on the test, too, as discussed in section 6.6.A.6.A.2.

Just as occurs when you select the option to practice a test, a pop-up screen will show your default randomization options, and you have the chance to change these options before printing. Make sure that your printer is ready to print before going on. When ready to print, select **[Continue]**.

The first printed page is a cover sheet for the test, with spaces for the examinee's name, the names of the Volunteer Examiners and the date. The pages following will list the questions and answers, presented as you selected with the randomization options. The last page is the answer sheet for the test, along with a scoring key.

Notice that at the top of each page, an ID number is printed in the upper right-hand corner. This number is a randomly generated ID for the purpose of keeping the test questions and answer sheets together in a test. If you print out several tests, you shouldn't run the risk of mixing up the answer sheets. The odds of getting two different tests with the same ID number are VERY low, but not non-existent.

6.B.3 Save

If there's a test in memory that you want to save to take again or to save for someone else to use later, for instance, select the **[Save Test]** option. A pop-up window will provide you with a save screen.

The upper-left box shows if you have selected a filename. Until you select a filename, this block will say "*.xST", where x represents the particular Ham class you're studying. The extension for all test files is ".xST". Furthermore, ".xST" is the only extension that is allowed. If you enter a filename with no extension, the program will add it for you. If you add the ".xST" extension, the program recognizes a correct extension. If you append an extension other than ".xST" the program will change the extension to ".xST". Underneath the filename block, all test files in the current subdirectory will be displayed. If you want to save the test with a filename that already exists, you can simply click on the filename itself. A message box will ask you to verify that you want to overwrite the existing file. If you want to save the test under a new filename, simply type that filename in the box. Once a filename is entered, the test can be saved either by pressing **ENTER** or by clicking on the **[OK]** button.

If you want to save the test in a different subdirectory or on a different drive, you can change the path by selecting the desired subdirectory and drive. The drive and subdirectory that the test will be saved to will be highlighted in their respective boxes.

When a test is saved, no question or answer randomization data is saved. However, when a test is reloaded, you can again have the questions and answers randomized prior to practicing or printing.

The Save action is not available in DEMO mode, but once registered, this function is completely enabled.

7 DEFAULT OPTION SCREEN

The Default Option Screen is available from the Main Menu and from the Question Review Screen. It is not available while practicing a test, however. This menu displays, and allows you to change, the default main options for the program. It also provides three functions for managing the "cards" in your "deck".

NOTE: This screen lets you set the DEFAULT options for the program. But each time you either practice a test or print a test, a window will pop up and offer you the chance to deviate from the defaults temporarily. Deviating from the defaults when practicing or printing a test will not change the DEFAULTS, though.

The options that you select will govern the program's operation while you're reviewing questions, but can be temporarily overridden before taking or printing a practice test.

These options will also be saved to a file on your disk called "DEFAULTS.xxx" when you exit the program, where xxx is an extension specific to the particular program you're using. This data is loaded whenever the program is run, allowing you to pick up where you left off -- you will find your options the same as when you left the program.

7.A Pull Cards From Deck When Answered Correctly

If you select **[Yes]**, when you answer a question correctly, that card will be removed from the deck, and you will not be asked that question again. If you answer a question incorrectly, that card will stay in the deck so that the question can be asked again later. This allows you to concentrate on the questions that you still haven't learned. As you answer questions correctly, the deck will begin to thin out. This is a good strategy to prevent wasting time on reviewing questions that you have already learned.

NOTE: You can always put a question back into the deck. When you pull a card from the deck, it isn't lost, it's just flagged that you've answered it correctly and have chosen not to leave it in the deck for now. The function to reinsert a card into the deck is on the Default Option Screen, and is explained in section 7.7.F.

If you select **[No]**, answering a question correctly will not pull the card from the deck. You can review the questions by either having the answers displayed all the time or after you attempting to correctly answer the questions, but cards will not be pulled while **[No]** is selected.

This option block is tied to the DISPLAY ANSWERS option block, described next. The relationship between the two option blocks is described in section 7.7.C.

7.B Display Answers

The answer to a question can be shown at the time that the question is first displayed, or it can be hidden until you attempt to answer the question.

If you select **[Always]**, the answer to a question will be visible to you when the question first pops onto the screen. This is good when you are first going through the questions to learn them.

Selecting **[After Attempt]** will hide the answer to each question until after you have pressed one of the answer buttons.

7.C Relationship Between Modifying the Deck and Displaying Answers

If you have selected the option to pull a question from the deck when you answer it correctly, it makes sense that the answer shouldn't be shown until after you try to answer.

So, if you select the option to Display Answers **[Always]**, the option to modify the deck will automatically change over to **[No]**. Likewise, if you select the option to modify the deck **[Yes]**, the option to display answers will change to **[After Attempt]**.

7.D Randomize Answers

If you select **[No]** for this option, the answers will always be in the same A, B, C, D order. By selecting **[Yes]**, as each question comes up on the screen, the answers will randomly be shuffled so that you won't necessarily get used to seeing the answer in the same place every time. This is how the FCC examination will be; they don't have to always list the answers in the same order.

Don't worry, the program still knows which answer is the correct one, no matter how they have been rearranged.

Before you practice or print a test you are also given an opportunity to temporarily override this default.

7.E Randomize Test Questions

This option is very similar to the Randomize Answers option, and it adds another level of reality to the testing environment. Don't expect to get the questions in the same order as they occur by subelement when you take your FCC exam. By selecting the option to randomize the test questions, you set the default condition to randomize the questions when you either practice a test or print a test. As was discussed in the last section, you are given the opportunity before practicing or printing a test to temporarily override the defaults without changing the defaults.

7.F Put One Question Back In Deck

If a question has been pulled from the deck and you decide that you want to put it back into the deck until you learn it better, it's very easy to do. Press the **[Put One Question Back In Deck]** button.

Once you press this command button, a smaller window will pop up and allow you to enter the question (card) number that you want to put back into the deck. The number that pops into the box automatically is the number of the next question with respect to the last question you looked at. Thus, if you were on question 50 and you selected this option, the number in the box would be 51. If this isn't the number you want to replace in the deck, simply type the number of the question that you do want.

If the card number that you enter is already in the deck, then no action will take place. The program will simply return to the option screen. If the card really has been pulled from the deck, it will be replaced, and when you return to the question screen, you will find that the card displayed is the one that you just put back into the deck.

If you have entered the option screen directly from the main menu after running the software for the first time, the number shown in the window when you select this option will be the number following the last question that you looked at when you last terminated the program. (The last question is one of the parameters saved to a data file when the program terminates.)

7.G Remove A Question From Deck

When you are reviewing questions, you can select the option to have the program automatically remove cards from the deck when you answer a question correctly (discussed previously). Aside from this automatic function, however, any time you decide that you would like to pull a particular question from the deck, you can do so by pressing the **[Remove a Question From Deck]** button.

When this option is selected, a smaller window pops up so that you can enter the question number that you would like to pull from the deck. By default, the number that appears in the window is the number of the question you last looked at. This even includes if you have just started the program. (The last question you looked at was saved to disk when you exited the program and automatically reloaded when you restarted the program.) The first time you run the software, if you have never looked at any questions, the number seen in the box will be 1.

If you have entered the Option Menu from the Question Review Screen, when you return to the Question Review Screen, the question displayed will be the one following the question you just pulled.

If you try to pull a question from the deck which has already been pulled, you will simply be returned to the Option Screen, and no action will be taken.

7.H Put All Questions Back In Deck

If you decide to start all over again, you can use the **[Put All Questions Back In Deck]** button. When you select this function, a WARNING window will ask you if you're REAL sure you want to do this. If you have pulled, for instance, half of the questions from the deck, whether it was done automatically by answering them correctly, or by pulling them manually, or both, you have narrowed the deck down to

only half of the questions left to study. If you select **[Yes]** from the warning screen, all of those pulled cards will go back into the deck, and you will be starting from scratch!

7.I Done

When you have selected the options you want to use, select **[Done]**. If you entered the Option Screen from the Main Menu, you will be returned to the Main Menu. If you entered the Option Screen from the Question Review Screen, then that is the screen you will be returned to.

8 PRINT QUESTIONS AND GRAPHICS

The situation may arise where you just want to print out questions from the question pool. This screen lets you print out questions, with or without the answers. You can also print a sheet of the graphics, if any are included for this class. The **[Options]** button also allows you to select the font you wish to use when printing.

First of all, the question pool identifies questions by their codes, such as G9A01 in the General Class Pool. However, the program manages the questions by assigning them numbers, 1 through however many questions are in the question pool. To make it easy to relate the question codes with the program's question card numbers, you can print out a cross reference sheet. Click on the **[Print Cross-Reference Sheets]** on the Menu Bar.

Once you decide which questions you want to print out, fill in the appropriate areas with the program question card numbers. You can enter only five ranges of numbers to print out at a time, but it only takes one range to specify all the questions and print out the entire pool! If you only specify one number to print and you don't enter anything in the second box, the second box will automatically be set to the same question number as box one. The same is true if you only enter a number in the second box.

If you enter a number in the second entry box which is smaller than the first entry box, the program will indicate an error and ask you to correct the entries.

When you have selected the questions to print, you may opt to have the answers printed, too. The answers will be printed right after each question and it's 4 answers.

Now select **[Print]**, and the questions will be printed out. If you need to print more, you can press the **[Clear Entries]** button and all numeric entries will be cleared.

NOTE: As a DEMO, the ability to print is not enabled. Once you register your copy, though, this function and all others will be totally enabled.

8.A Options Button

The **[Options]** button allows you to select and store the font and font size you wish to use. The current font and font size is shown on the screen. When you select **[Options]**, the program scans your system configuration to determine which fonts you have available in your machine which are common to the screen and printer. You can select the font of your choice. You can also select the font size, but you are limited to between 10 and 14 points. Pressing **[OK]** will save your selections (it will NOT change your Windows defaults).

8.B Print Graphics Sheet

If you want to print a sheet(s) of the graphics which accompany the question pool, select the **[Print Graphic Sheet]** option from the menu bar.

9 QUESTION REVIEW SCREEN

This is the screen where you will probably spend most of your time. The Question Review Screen is a very versatile tool for learning the questions, especially coupled with the Option Screen which was discussed in the last section.

The Question Review Screen can be controlled by using the "hot" keys shown on the command buttons, by tabbing to the button and pressing ENTER, or by using a mouse.

The features of this screen are discussed in detail in the following sections.

9.A Displayed Information

The information which is displayed at the top of the Question Review Screen is discussed in the following sections.

9.A.1 Question Code

Every question is assigned a code by the FCC Question Pool Committee. As each question is reviewed, the code assigned to each question is shown in this box.

9.A.2 Card Number

The card number for the question displayed is shown in the box. The card number will probably give you a better idea of where you are in the deck than the Question Code will.

9.A.3 Cards in Deck

When you run the program the first time, this number will be the same as the total number of questions in the question pool. It indicates how many cards are left in the deck. As you learn the questions, you can choose to pull cards from the deck, so that you only have questions remaining that you still need to work on. As cards are pulled from the deck, the number will decrease, showing you how many questions you still have to work on. To find out how to pull cards from the deck, either automatically or manually, refer to the Option Screen, sections 7.7.A. and 7.7.G.

9.A.4 Pull Cards

One of this program's more attractive features is that if you answer a question correctly, it will automatically remove that question from the deck.. if you have that option selected, of course. Section 7.7.A. describes how to turn this option on and off. The Pull Cards window on the Question Review Screen indicates whether or not the option to modify the deck when a question has been answered correctly is selected or not.

You can also change the Pull Cards option from the Question Review Screen by pressing **[Options]**, accessing the Option Screen (section 9.9.B.9.B.5).

9.A.5 Question Block

The first large block below the top information line is the Question Block. It is here that the questions will always be displayed.

9.A.6 Answer Blocks

Typically there are four answer blocks displayed below the question block, and the answers shown in the blocks are labeled A, B, C, and D. These blocks are for display of the possible answers. To select an answer, you must use the Answer Buttons described in section 9.9.B.9.B.1.

9.A.7 Correct Answer Block

Whether or not the Correct Answer Block is displayed when the question is first displayed depends on how you have selected your options (section 7.7.B).

If you have selected the option to Display Answers **[Always]**, the Correct Answer Block will be visible at all times. The Answer buttons will also be disabled in this case.

On the other hand, if you have opted to have the answers displayed only after you attempt to answer the question, then the Answer Block will not be visible when the question is first displayed and the Answer buttons will be enabled. If you press any one of the Answer Buttons, the Answer block will pop up and show the correct answer, and a message of YES! or SORRY. will pop up over the answer buttons to indicate if your selected answer was the correct one or not.

9.B Controls

9.B.1 Answer Buttons

The answer buttons are used to select an answer to the displayed questions, but they are not always enabled. You can tell if the buttons are enabled by the color of the caption print on the buttons.

If you have selected the option to display the correct answer all the time (section 7.7.B), the answer buttons will be disabled. You can see in this case that the "A", "B", "C", and "D" on the buttons are not black, but are dimmed, and the correct answer block is visible, showing the answer to the displayed question.

If you have selected the option to display answers only after you attempt to answer the question (section 7.7.B), the answer buttons will be enabled and the "A", "B", "C", and "D" on the buttons will be black. Since you are going to try to answer the question, the answer block will not be visible until after you select one of the answer buttons.

9.B.2 Next and Back Buttons

9.B.2.a Next Button

When you were at the Main Menu, you chose which question you wanted to begin with in your review. The **[Next]** button lets you move on from the displayed question to the next question even if you don't want to try to answer the question displayed.

If you have pulled cards from the deck, then the next card in the deck will be retrieved. For example, if you are currently looking at question 50 and you have already pulled questions 51 and 52, when you select **[Next]**, question 53 will be displayed.

The **[Next]** button can also function differently. As long as the **[Back]** button is displayed beside the **[Next]** button, pressing **[Next]** will move sequentially through the deck as just described. However, if you don't want to review the questions in order, you can review them randomly (see section 9.2.3). In random mode, the **[Back]** button will not be shown on the screen, and the **[Next]** button will be the only control for moving to a different question. In this case, pressing **[Next]** will pick a card randomly from those cards still in the deck. You can see, by watching the Card Number Block at the top of the screen, how you really are randomly jumping around in the deck!

If you are reviewing the questions sequentially, and you reach the last card in the deck, the **[Next]** button will be disabled. You can tell this by the **[Next]** on the button changing from black to gray. As soon as you go back to a different card, the button will become enabled once again. If you are reviewing the questions randomly, the **[Next]** key will disable when there is only one card left in the deck.

9.B.2.b Back Button

When you are reviewing questions sequentially, the **[Back]** button will be visible beside the **[Next]** button. Pressing **[Back]** will bring up the first question found in the deck which is before the card that you're currently looking at. In other words, if cards just in front of the current card have been pulled, the next question will be the first question (toward the front of the deck) that it finds that hasn't been pulled.

If there are no cards in front of the one you're looking at, for example, if you are looking at question 1, the **[Back]** button will be disabled. As soon as you go to a card that is not at the very front of the deck, the **[Back]** button will be enabled again.

Like the **[Next]** button, you can use the **[Back]** button to flip through the cards in reverse order without having to try to answer the questions.

9.B.2.c More on the Next/Back Buttons

Pressing the **[Next]** or **[Back]** button also causes some housekeeping to be done. Specifically, if you have selected the option to Pull Cards when you correctly answer a question (you can tell by looking at the Status Line at the top of the screen), and you do correctly answer the question, the card will be pulled from the deck when you press the **[Next]** or **[Back]** button. So if you have answered a question correctly and decide that you don't want it pulled from the deck yet, before you press **[Next]** or **[Back]**, you can press the **[Option]** button and change the Pull Cards From Deck When Answered Correctly option to **[No]**. When you return to the Question Review Screen, you can press **[Next]** or **[Back]**, and the card will not be pulled from the deck. (If you want the Pull Card option turned back on, go back to the option screen and change it back.)

9.B.3 Random/Sequence Buttons

While studying with this software, if you want to progress through the questions in sequential order, you can do that. If you would like to go through them in random order, you can do that, too.

Below the **[Next]** and **[Back]** buttons, you will see a button labeled **[Rnd]**. Pressing this button will switch the program from sequential mode to random mode and the **[Back]** button will disappear. The **[Back]** button disappears because there is no forward or backward anymore, just the random selection of cards from the deck. If you want to go back to a previous question, you will need to exit to the Main Menu, reselect Review Questions and Answers and then select the question you want to look at. There is another way. Switch from random mode to sequential mode and then use **[Next]** or **[Back]** to get to the question that you want to see. The only hangup here is that if the question is a long way off in the deck from where you are, it might take awhile!

The option to pull cards on correct answers still functions in random mode.

If you are in random mode and you want to get back to sequential mode, just press the **[Seq]** button, and the **[Back]** button will come back onto the screen, indicating that you're back in sequential mode.

9.B.4 Calculator Button

Tab to, click on, or press **[Calc]**, and a calculator will pop up onto the lower right of the screen to help you with those questions where you need to use one, or even if you just need to balance your checkbook while you're studying questions!

The calculator can be controlled by the mouse or the keyboard. If you use the keypad on your computer, make sure that your NUMLOCK is on. The ENTER key on your keypad can be used for " = " as well as by using the " = " itself.

When you are finished with the calculator, use the **[Exit]** button to close the calculator and go back to the Question Review Screen.

9.B.5 Options Button

If you want to change your options while you are reviewing questions, select **[Option]**. You will be taken to the main Option Screen, where you can make changes as described in section 7.

When you're done on the Option Screen, press **[Done]** and you will be returned to the Question Review Screen, with the appropriate functions modified in accordance with the options you selected.

9.B.6 Main Menu Button

When you are ready to exit the Question Review Screen, press **[Main Menu]**. The program will remember which question you are looking at when you leave the Question Review Screen and even save it to disk when you completely exit back to Windows. When you restart the program, the question number that will pop into the screen will be the first question in the deck following the one that you left off with. Even if you decide to take a test, when you want to come back to the Question Review Screen, the program will remember your place!

10 EXAMINATION SCREEN

The Examination Screen is very similar to the Question Review Screen, but one of the main differences is that access to the Option Screen is not allowed during a test. The There is no Option button on the Examination Screen. The reason is that the options are set for a genuine test environment.

The options that are set when you take a test are as follows:

1. The option to pull cards from the deck during a test is disabled.

2. The answers will only be shown to you after you try to correctly answer the questions.

You do have the option just before taking a practice test to select whether or not the questions and the answers are randomized.

The obvious changes which were made to the Question Review Screen to create the Examination Screen are:

1. The "card" number is no longer displayed.

2. The Pull Card status window is no longer shown.

3. The Random/Sequence button is removed.

4. The Option button has been removed.

Other changes will be discussed in detail when the Examination Screen is explained in the following sections.

NOTE: In DEMO mode, you will only be able to advance through the first three questions on practice exams. This is to let you see how the program works and decide if it will help you practice for your Ham examination. Because you aren't allowed to answer all the questions on a practice test, you cannot see the Test Results Screen, discussed in section 10.10.C. As soon as you register your copy of the software, your registration number will completely unlock all the features in the program for you.

10.A Displayed Information

10.A.1 Question Code

The Question Code block is the same as the Question Review Screen; it shows the code for the question that is displayed on the screen.

10.A.2 Question Number

The Question Number box shows you the question number as it would appear on a test. It has no reference to the "card number" in the deck, or to the Question Code.

10.A.3 Score So Far

This is where you find out how you're doing as you take the test. It calculates your score as you go, based on the number of questions that you have correctly answered so far. For instance, if you correctly answer 4 of the first 5 questions correctly, your Score So Far would be 80(%). If you go on to answer all of the remaining questions correctly, that means that you answered 24 out of 25 correctly, and your score would be 96.

When you answer the last question, the score block will say FINAL SCORE:, showing how well you did.

10.A.4 Question Block

The Question Block is the same as discussed for the Question Review Screen. You will see the test questions displayed here.

10.A.5 Answer Blocks

The answer blocks are the same as on the Question Review Screen.

10.A.6 Correct Answer Block

This block which shows the correct answer is identical to that found on the Question Review Screen. The only difference is that while you are taking a test, you don't have the option of displaying the answer all the time. The answer is only shown to you after you answer the question.

In connection with the correct answer, after you answer a question by selecting one of the answer buttons, "A", "B", "C", or "D", a box will pop up over the answer buttons saying either YES! if you answered correctly, or SORRY! if you answered incorrectly.

10.B Controls

There aren't as many controls available to you while your taking the test because, well, you're taking a test! As discussed before, you can either press/select the controls (buttons) by either tabbing to them, and then pressing ENTER, by using the "hot" keys, or by using a mouse. The controls that you have available during an examination are discussed below.

10.B.1 Answer Buttons

The answer buttons are used to select the answer for each question. The characters, "A", "B", "C", and "D", will be black (enabled) on questions that you have not yet answered. When you press an answer button, a message will cover the buttons, telling you if you answered the question correctly or not. When you proceed to the next question, the characters will again be enabled. But if you back up to the question that you just answered, you will find that the characters are now gray, indicating that the answer buttons are disabled. Sorry, you're only allowed one attempt to answer each question. You are allowed to browse backward and forward through the test, but once you answer a question, either right or wrong, you can't answer the question again.

If you do browse forward and backward through the questions (and you can answer the questions in any order that you prefer), the condition of the answer buttons (enabled or disabled/black or gray) is your indication of whether or not you have answered that question; if the buttons are black, that's a question that you still haven't answered. After you answer the last question, you will know it because your score will be indicated as a FINAL SCORE.

10.B.2 Next Button

After you answer a question, press **[Next]** to go to the next one. You can use **[Next]** to skip a question if you want to; but you will have to come back to it before you will get a final score. The **[Next]** button is disabled on the last question of the test.

10.B.3 Back Button

You can go back and look at questions you have either answered or skipped by pressing the **[Back]** button. You will have to answer all the questions before you get a final score. Remember, if the answer buttons are black, that's a question that you still haven't answered. The **[Back]** button will be disabled anytime you are on question 1.

10.B.4 Calculator Button

You are probably going to need the calculator during the test, and you're allowed to use one when you actually take your test. Press the **[Calc]** button at any time, and the calculator will pop up onto the screen just like on the Question Review Screen. For more details on using the calculator, refer to the section 9.9.B.9.B.4.

10.B.5 Main Menu Button

When you are finished with the test, or if you just want to exit the Examination Screen, press the **[Main Menu]** button, and you will be returned to the Main Menu.

If you exit the Examination Screen, you can come back to the same test, but you'll have to start over.

10.C Test Results

After you answer the last question on a practice test, not only is your score shown as the Final Score, but a control button appears just to the right of the score box, labeled **[Test Info]**. Press this button to get the results of your test.

A window will pop-up on the screen that tells you the number of questions you missed and whether you passed or failed the test. It will also show you each subelement in which you missed each question, along with the question numbers that you need to study for each subelement. If you want to print this information out, just press the **[Print]** button.

Once the test is completed, you can go back through the questions, and the correct answers will be shown to you.

11 FILES INCLUDED IN ZIPPED FILE

The program files which are included in the official PRACTICAL-ly Software zipped files are listed for you in the text file appropriate for this program as listed below:

```
        NTFILES.TXT  -  Novice/Technician Class
        FILES.TXT    -  General Class
        AFILES.TXT   -  Advanced Class
        XFILES.TXT   -  Extra Class
```

A description of the files follows. When a filename contains x's, this means that these characters will vary to specify the particular class program to which they belong.

README.1ST - Information on how to get started.

AVEXTRA.TXT - ANSI character file that is attached to the ZIP file which contains information on the program and PRACTICAL-ly Software. This file can be viewed again from DOS by typing "TYPE AVEXTRA.TXT".

MANUAL.DOC - This documentation file in Microsoft Word for Windows format.

xxxYY.EXE - The main program. (YY is the year this program was released.)

xxxYY.DAT - is a random access file that contains the question pool and all the information related to each question that the software needs. (YY is the year the *question pool* was released.)

THREED.VBX, SPIN.VBX, RESIZE.VBX - Function libraries to allow additional features to be incorporated into the program. These files are installed into the WINDOWS/SYSTEM subdirectory.

REGISTER.FRM - is a modified ASCII text file which the program reads to print out the registration form from within the program on the Print From Question Pool screen. It may also be printed by typing "PRINT REGISTER.FRM", but doing so will also print the quotes (") which delimit each line.

REGISTER.TXT - is a standard ASCII test file of the registration form. It may be sent directly to the printer by typing "PRINT REGISTER.TXT" from the DOS command line.

CUSTOMxx.DAT - is an ASCII file which contains data necessary for the program to manage its internal databases.

GRAFXRFx.DAT - is an ASCII file which contains the crossreference table for the program's question card numbers and the bitmap graphic files.

HISTORY.xxx - List of changes which have been implemented in different versions of this software.

VBRUN300.DLL - is a dynamically-linked library, written by Microsoft for Visual Basic-created .EXE files, which enables the program to link to Windows. It can be in the same directory as the program files, but is better placed in the WINDOWS\SYSTEM subdirectory. Doing so will make it available to any Visual Basic for Windows Applications you may get. See section 16, Acknowledgements for restrictions on the distribution of this file.

12 FILES THAT THE PROGRAM CREATES

After the program has been run once and then exited, three files are created: DEFAULTS.xxx, DECK.xxx, and CROSDECK.xxx, where the xxx extension denotes the specific program for which the data applies. These files together keep track of all the parameters necessary to let you pick up where you left off when you restart the program each time. The program loads them when the Title Screen comes up.

DEFAULTS.xxx: Stores the values of Option Screen variables.

DECK.xxx: This is a sequential file which lists the questions that are in the deck. Do not attempt to modify this file. It is synchronized with the data in the CROSDECK.xxx file, and changing it will certainly cause the program to malfunction sooner or later (probably sooner!).

CROSDECK.xxx: This sequential file holds the contents of two arrays in the program which are used to cross-reference the deck.

13 WHAT DO YOU GET BY REGISTERING?

When you register, PRACTICAL-ly Software will issue to you a registration number which will transform your DEMO into the full-featured program. There's no waiting; you already have the software up and running on your system!

You get free technical support (between 8:00 a.m. and 10:00 p.m. EST). If no one is available to take your call, leave a message on the answering machine, and your call will be returned as soon as possible.

You get free unlimited upgrades. As PRACTICAL-ly Software makes improvements to the software, the upgraded programs will be maintained on the PRACTICAL-ly Software BBS, as well as distributed through other channels. Your registration number will "turn on" these new versions of the software, too.

The program will be made available at a minimum on PRACTICAL-ly Software's BBS, Compuserve, and America Online. However, the most direct place for you to get the software is straight from the PRACTICAL-ly Software BBS.

14 HOW TO REGISTER!!

FIRST, what's the COST? If this is the *first* Ham software for Windows that you've thought about registering with PRACTICAL-ly Software, the cost is $25.00. If you want to register a second program for another Class, the cost is only $10 more. The third is $10, and the fourth is only $5. That way, you can get the entire set, Novice/Technician, General, Advanced, and Extra for only $50. But you're not required to get them all at once if you don't want to. If you only register one now, you'll still get the discount on the next.

There are three ways to register:

1. By mailing a check, money order, or credit card information along with the registration form. Go into the program's Main Menu and click onto Program Info on the menu bar, and then select **[Print Registration Form]** to print out a form from within the program.

    If you register by mail, your registration number will be sent to you by mail, or if you specify on the registration form, we'll send it by fax. Or if you're in a hurry, give us a telephone number, and we'll call you.

2. By faxing the registration form to PRACTICAL-ly Software with the appropriate credit card information filled out. As soon as we can process your order, we will send your registration number back to you by fax, or by mail if you prefer, or by phone. You specify which.

3. By logging onto the PRACTICAL-ly Software Bulletin Board Service (BBS) with your computer and using the credit card registration door. Follow the directions in the registration door. After your order is processed, PRACTICAL-ly Software will leave your registration number in a private message to you on the BBS and mail you hard copies of the transaction.

15 TROUBLESHOOTING

Most of the problems that are encountered with PRACTICAL-ly Software products are easily fixed. The most common problems and their solutions are listed below. If you have a problem which is not listed, or of the recommended solution just doesn't help you, you can call the PRACTICAL-ly Software BBS at (513) 523-8712 and leave a Comment to the Sysop, or call PRACTICAL-ly Software at (513) 523-8612. Either way, we will help you resolve your problem as soon as we can.

A. I can't get my software to register.

This usually due to the registration data not being typed into the program EXACTLY as it was given to you. Every character is important, including each space and upper/lower case. Make sure both the name and registration number are correct and try again.

Do you (still) use Norton Desktop? Make sure that the icon which Norton set up for your program specifies the Startup Directory as the subdirectory that your program is in.

B. For some reason, questions and answers are getting jumbled up.

This manual has made numerous references to the fact that the program saves various kinds of data to the disk to allow the program to "pick up where it left off". This is a very handy feature to have in this sort of program, but if those files should become corrupted in some way, the program will likely malfunction in some way or another. (Note: 99.9% of the time, this error is the result of tampering with the files outsode of the program parameters.)

This can easily be corrected in one of two ways.

1. First and easiest is to enter the Option Menu as soon as you start the program and press the **[Put All Questions Back In Deck]** button. This will reinitialize all the arrays which reference and cross-reference the question card deck.

   or

2. Go into DOS into the subdirectory in which you have your software. Delete DEFAULT.xxx, DECK.xxx, and CROSDECK.xxx. When you start the program now, it will automatically reinitialize all of its archival files when it sees that they aren't on the disk.

16 ACKNOWLEDGEMENTS

This program was written with Microsoft's Visual Basic 3.0 Professional.

The VBRUN300.DLL file, a dynamically-linked library, is a product of Microsoft which allows the program to run under Windows without Visual Basic. Microsoft requires no license or payment for the use of this run-time file. However, Microsoft specifies that VBRUN300.DLL can only be distributed with Visual Basic .EXE files; it cannot be distributed by itself.

The THREED.VBX file enables three-dimensional objects in Visual Basic Professional applications. This program is written by Sheridan Software Systems, Inc., of Melville, NY. This file requires no payment or license, but should only be distributed with Visual Basic applications.

The RESIZE.VBX file enables automatic resizing of all screen objects to match any monitor resolution. The program is a product of Larcom and Young, Compuserve 70555,312.

Windows is a trademark of MicroSoft.