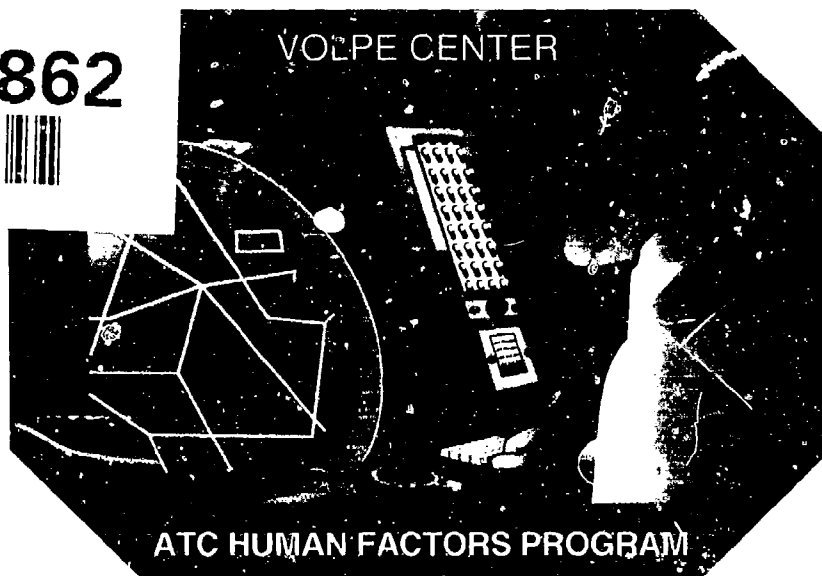




User's Manual for ATC Human Factors Checklist

Office of Aviation Research
Washington, DC 20591

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U.S. Department of Transportation
Research and Special Programs Administration
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Cambridge, MA 02142-1093

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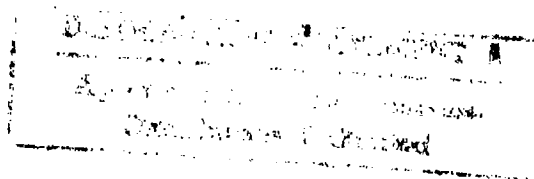
U.S. Department of Transportation
Federal Aviation Administration

NOTICE

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Acknowledgments

This document was written by Andy Semble, and painstakingly reviewed and edited by Stephanie J. Levy. We thank this talented and dedicated team for their many hours of effort and their quick response to the many revisions that were necessary as the electronic checklist evolved.



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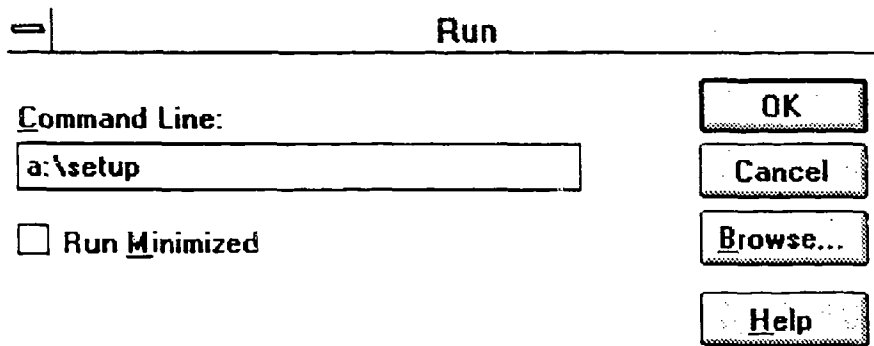
Requirements

In order to run the ATC Human Factors Electronic Checklist System, the following components are needed:

- 386 DX (486 preferred)
- A minimum of 8 MB RAM
- 3 1/2" diskette drive
- A minimum 15 MB free hard disk space
- Windows 3.1 or greater
- Windows compatible mouse
- VGA monitor

Installation Procedure

1. Insert the *ATC Checklist* disk labeled Disk 1-Setup into the 3.5 inch disk drive of your computer.
2. Ensure that Windows is running and the *Program Manager* is open on your desktop.
3. From the Windows *Program Manager*, select the **File** pull-down menu. From the **File** pull-down menu, select the **Run** menu choice. The *Run* window now appears.



4. At the **Command Line** prompt, enter the following command: **a:\setup** (substitute *a:* with *b:* if your 3.5 inch disk drive is designated as drive *b:*).

The *ATC Checklist Setup* welcome window now appears.

ATC Checklist Setup



Welcome to the ATC Checklist installation program.

Setup cannot install system files or update shared files if they are in use. Before proceeding, we recommend that you close any applications you may be running.

For information on closing applications without exiting Setup, choose Help.

WARNING: This program is protected by copyright law and international treaties.

Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.

OK

Exit Setup

Help

5. After you have read the information on this screen, select the **OK** button to continue with the setup.

The message **Setup is searching for installed components** appears on the screen, and then the next setup window appears.

ATC Checklist Setup

Setup will install ATC Checklist in the following destination directory.

To install to this directory, choose the OK button.

To install to a different directory, choose the Change Directory button.

You can choose not to install ATC Checklist, or to change its destination directory again later in this Setup program.

Directory:

C:\CHECKLST

Change Directory...

OK

Exit Setup

Help

6. The default directory that the ATC Checklist programs will be copied to is indicated on this window at the **Directory** field.

Do one of the following:

- If you want to accept this default directory, select the **OK** button; or
- If you want to change the directory, select the **Change Directory** button. The *Change Directory* window now appears.

Change Directory

Enter or select a destination directory.

Path:
C:\CHECKLST

Directories:

- c:\
- acoread
- anykey
- backup
- bin
- catools
- clipper5

Drives:
c: ms-dos_6

OK
Cancel
Help

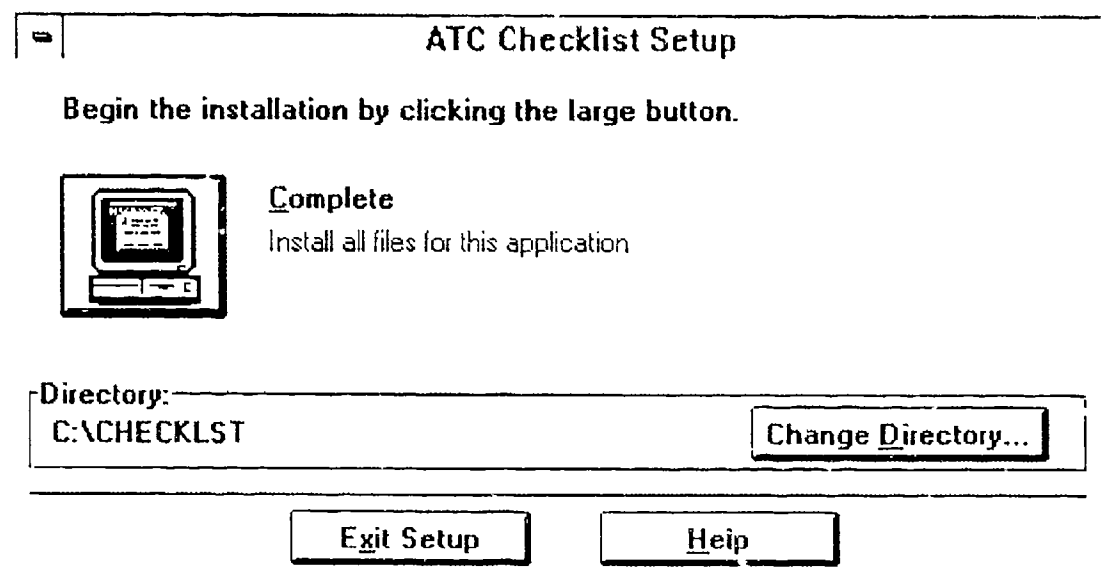
Use the following guidelines to change the directory you want to copy the ATC programs to:

- ⇒ To change the drive that contains the directory you want, click on the **Drives** pull-down arrow, and then highlight the drive you want.
- ⇒ To change the directory on the selected drive, travel through the directory tree in the **Directories** box, and highlight the directory you want the program to be copied to.

Note that any changes you make are reflected in the **Path** field at the top of the screen.

When you have chosen the drive and directory you want to copy the programs to, select the **OK** button (if you select the **Cancel** button, the path will be returned back to the default directory). If the directory you have selected does not yet exist, a message similar to the following appears: The destination directory C:\CHECKLIST does not exist. Do you want the directory to be created? If you select "yes", you are returned to the ATC Checklist window. If you select "no", you are returned to the change directory window. When you are returned to the *ATC Checklist* window, select the **OK** button to continue with the setup.

7. The message **Setup is searching for installed components** appears on the screen, and then the next setup window appears.



Do one of the following:

- If you want to change the directory, select the **Change Directory** button and follow the instructions in step 5 for changing the directory; or
- If you are ready to continue, select the **Complete** button. The *Choose Program Group* window appears:

ATC Checklist - Choose Program Group

Setup will add items to the group shown in the Program Group box. You can type a new group name, or select one from the Existing Groups list.

Program Group:
ATC Checklist

Existing Groups:

Adaptec SCSI	↑
ATC Checklist	
BTS - FoxPro	
Corel5	
Dataware Demo 8.00	
Delrina FormFlow	
EDIX/GS Demo	
English Wizard 1.0	
Forms Designer	
FormsPro	
Games	↓

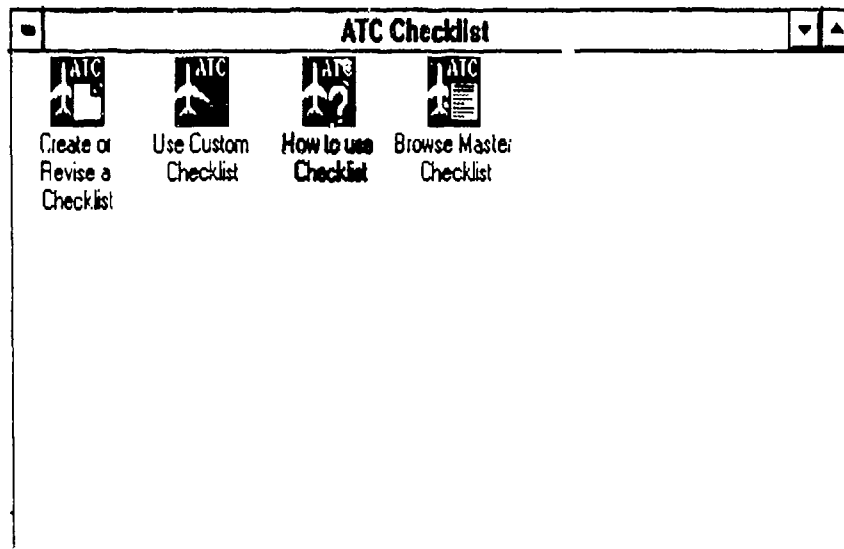
Continue **Cancel**

8. By default the ATC programs will be accessible from the *ATC Checklist* group. If you want the programs to be accessible from another group in your Program Manager, scroll-down the list of **Existing Groups** and highlight the different group name that you want.

When you are ready to continue, select the **Continue** button.

9. The message **Setup is checking for necessary disk space...** appears, and then begins copying the files from the installation diskette. A status bar displays the percentage of the files that have currently been copied.
10. When 100% of the files have been copied, the *ATC Checklist* icons will appear briefly, and then the message **ATC Checklist Setup completed successfully** appears.

To continue, select the **OK** button. The set of *ATC Checklist* icons now reappears.



11. Follow the appropriate instructions for running the *ATC Checklist* programs in the remaining sections of this User's Guide.

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1. Introduction

Intended Use

This electronic checklist is a companion to the paper document - *Human Factors in the Design and Evaluation of Air Traffic Control Systems*. The items contained in this checklist have been derived from this handbook. The primary purpose of the checklist is to point air traffic and other operations specialists to human factors issues that they may wish to include in their consideration of a new system, subsystem, or a new component of an existing system. The responses of operations specialists to the checklist items can help to focus group discussions and identify issues that should be addressed in every stage of the acquisition process, from the development of system requirements to formal operational testing. Checklist items can be used: to provide a basis for system requirements and specifications, as criteria for selection among potential vendors, or as part of an operational evaluation. However, in order to translate checklist items into requirements, specifications, or system performance criteria, knowledge of the system will be necessary to relate the items to specific system functions.

The checklist is intended to add structure and objectivity to the selection and evaluation of ATC systems and subsystems. It is not meant to serve as a comprehensive assessment or to replace usability testing. The checklist can only examine individual components of a system and point to broader issues (such as how these components fit together, the uses of automation, etc.). In many cases, the ability of the checklist to identify potential problems will be

entirely dependent on the person using the checklist. Where checklist items are general or broad, an intimate knowledge of the system and how the user will use the system, is required to make the connection between the intent of the item and specific system attributes or functions. Many of the checklist items are objective and precise and can be answered with observations alone (e.g., "the user can adjust symbol size"). However, other items are more general and the answer may require objective testing (e.g., "the meanings of auditory displays are readily apparent"). Also, some of the items are idealistic; they represent the ideal based on current human factors knowledge. They are not offered as system requirements or standards, nor do they preclude compromise; where compromises must be made, however, the implications should be clearly understood. This material is provided solely for guidance and is intended to be used by air traffic specialists as they see fit.

The numbers in parentheses at the end of each checklist item refer to the section in *Human Factors in the Design and Evaluation of Air Traffic Control Systems* that discusses the issue. This mapping allows the checklist user to learn about the basis for the item, why it is important, and the implications of compromise. Checklist items marked with an "E" indicate items that must be assessed with equipment and/or by referring to the specifications documentation.

Creating a Custom Checklist

This program allows users to construct a checklist that is customized to the system under consideration. The user can select the relevant checklist items from the entire set contained in the Master Checklist by one of two ways. Items can be selected through a keyword search that automatically selects the subset of items associated with one or more preselected keywords (e.g., visual displays, keyboards). Alternatively, checklist items can be selected directly from the Master Checklist by viewing the Master Checklist and selecting the items of interest. New items can also be entered as free text, when necessary. Details on how to create a custom checklist are provided in this manual.

Using a Custom Checklist

Once a custom checklist is created, this program allows the user to print the checklist for use or copy it to a file. The program also allows the user to enter responses to the checklist items directly onto the screen. In addition to a four-choice response (i.e., satisfactory, unsatisfactory, N/A, see notes), there is also a section for notes. Once completed, the checklist can be printed (with or without the notes) and/or stored in the program. Details on how to use a custom checklist are provided in this manual.

If you have comments on this material, or for additional copies of these diskettes, or *Human Factors in the Design and Evaluation of Air Traffic Control Systems*, please contact:

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email: cardosi@volpe1.dot.gov

For help in using the checklist or to report problems, please contact:

John Bonin: (617) 494-2157

email: bonin@volpe5.dot.gov

OR

John Bastow (617) 494-2154

email: bastow@volpe1.dot.gov

Master Checklist Outline

I. General

II. Visual Displays

A. General

B. Visual Alerts

III. Auditory Alerts

A. General

B. Speech Messages

IV. Cognitive Workload

A. General

B. Automation

V. Data Entry Procedures

A. General

B. Commands and Command Execution

C. Menus

D. Error Messages and User Guidance

VI. Data Entry and Control Devices

A. General

B. Keyboards

C. Touchscreens

D. Trackballs

E. Control Grip Devices

F. Mice

G. Graphics Tablets

H. Pushbuttons (Actual and Virtual)

I. Foot Switches and Pedals

Master Checklist Outline (cont'd)

VII. Ergonomics and Workstation Design

- A. User-Centered Workstation Design
- B. Design of Control Room Seating
- C. Design of Communications Equipment
- D. Environmental Design

VIII. Human Factors Planning and Evaluation

- A. Human Factors Plan
- B. Test Methods
- C. Analysis of Test Results

2. ATC Checklist Group and Icons

The following is a list and description of the icons in the *ATC Checklist* group:

Create/Revise Custom Checklist - The program where the *Create New Checklist*, *Revise Existing Checklist*, *Rename Checklist*, *Print Checklist* and *Copy Checklist to a File* functions are accessible off the *Create/Revise Custom Checklist Main Menu*. This allows the user to create a new checklist, revise or rename a checklist, print a checklist, or copy it to a file.



Use Custom Checklist - The program where the *Open Checklist*, *Edit Systems List*, *Evaluate System*, and the *View or Print Checklist* functions are accessible off the *Use Custom Checklist Main Menu*. This allows the user to use the customized checklist on the screen.



How to Use Checklist - This HELP file.



Browse Master Checklist - The program where the user can browse through the entire Master Checklist.



3. Create/Revise Custom Checklist

Create New Checklist

Creating a customized checklist

Revise Existing Checklist

Editing the active checklist

Rename Checklist

Renaming the active checklist

Print Checklist

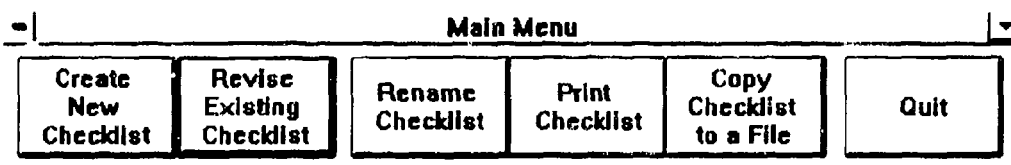
Printing the active checklist

Copy Checklist to a File

Copying the active checklist to a file of your choice

Create New Checklist

The following are the general procedures for creating or revising checklists:



1. Select the **Create New Checklist** button from the *Create/Revise Custom Checklist Main Menu*. The *Create New Checklist* window now appears.

Create New Checklist

☒ Create new checklist using keyword search

☐ Create new checklist by selecting items from Master checklist

Ok **Cancel**

2. Select one of the following two choices for creating a new Checklist:

Create new checklist using keyword search - This choice allows you to create a checklist by choosing one or more preselected keywords. The checklist items associated with these keywords will automatically be added to your checklist in the same sections in which they appear in the Master Checklist.

Create new checklist by selecting items from Master Checklist - This choice allows you to select individual items or groups of items directly from the Master Checklist. The selected items will be added to your checklist in the same sections in which they appear in the Master Checklist.

Create Custom Checklist from Keyword Search

1. When you create a new checklist from a keyword search, the *Select Keywords* window appears with a scroll-down list of all the keywords in the Master Checklist.

Select Keywords

Click on any keyword or phrase to select it; if you change your mind, click again to deselect it.

auditory alerts
automation
chair design
color
commands and command execution
communications equipment
controls
data analysis

The dialog box contains a list of keywords on the left and four buttons on the right. The buttons are: 'Select All Keywords' (highlighted with a dashed border), 'Unselect All Keywords', 'Ok', and 'Cancel'. There are also up and down arrow buttons on the left side of the button area.

2. Scroll-down and highlight each keyword as desired, OR select the **Select All Keywords** button to select all of the keywords in the list. To unselect all the keywords, select the **Unselect All Keywords** button.
3. When you have finished selecting the keywords you want for your new checklist, select the **OK** button. A message appears asking **“Do you wish to review the items marked in the Master Checklist before your checklist is created?”**
 - a. If you respond “Yes”, go to step b. If you respond “No”, go to step 4.
 - b. If you responded “Yes”, the *Create Checklist* window appears, starting with the first section you selected a keyword from.

Create Checklist

Mark Checklist Items to Copy

GENERAL

A. General

Marked	Test
☒	1. Separately developed subsystems are effectively integrated into the operational environment so that they are compatible with existing equipment and procedures (6.1.2).
☒	2. With this design, the controller can find the necessary information quickly so that the computer does not delay the controller in any way (6.1.2).

To keep an item in the checklist, click on the check box. To delete a marked item from the checklist, click on the 'X' in the check box.

- c. Mark each of the items you want for the new checklist in the *Marked* box to the left of the item, OR select the **Mark Sect** button to select all the items in the section (or select the **Unmark Sect** button to unselect all the items in the section).
- d. Scroll up or down through the items in the sections as needed using the **Prev Item** and **Next Item** buttons that are located directly underneath the currently displayed items. As you scroll through the items, note that the items associated with the keywords that you selected are automatically marked.

- e. If you want to go to the next section to select items, select the **Next Sect** button from the set of buttons located at the bottom of the screen, and perform the same actions as described in step c.
- f. You may also use the **Go To** button to view the entire section and go directly to any item in that section.
- g. When you are finished selecting all the items you want for your new checklist, select the **Done** button. The *Create New Checklist* screen now appears.

The screenshot shows a window titled "Create New Checklist". Inside the window, there is a text input field with the label "Enter the checklist name." to its left. Below the input field, there is a note: "NOTE: If you do not name this checklist, it will not be saved." To the right of the input field and note, there are two buttons: "OK" and "Cancel". At the bottom of the window, there is a horizontal line indicating a data entry field.

- 4. In the data entry field at the bottom of the window, enter the name of the checklist (you may wish to use the name of the system being evaluated). If you do not enter a name, the list will not be saved. When you are finished, select the **OK** button. After a few moments,

the new checklist is created and you are returned to the *Create/Revise Custom Checklist Main Menu*.

Note that the name of the new checklist now appears at the top of *Create/Revise Custom Checklist Main Menu* window. It is now the *active* checklist.

5. To add additional items to your custom checklist, either directly from the Master Checklist or as new text, you must return to the Main Menu and select the *Revise a Checklist* choice.

Create Custom Checklist from Master Checklist

1. As you begin to create a new checklist using the Master Checklist, the *Create Checklist* screen will appear.

Create Checklist

Mark Checklist Items to Copy

GENERAL

A. General

Marked	Text
No items were selected in this section.	
☐	1. Separately developed subsystems are effectively integrated into the operational environment so that they are compatible with existing equipment and procedures (6.1.2).
☐	2. With this design, the controller can find the necessary information quickly so that the computer does not delay the controller in any way (6.1.2).

To keep an item in the checklist, click on the check box. To delete a marked item from the checklist, click on the 'x' in the check box.

Mark Sect.

Unmark Sect.

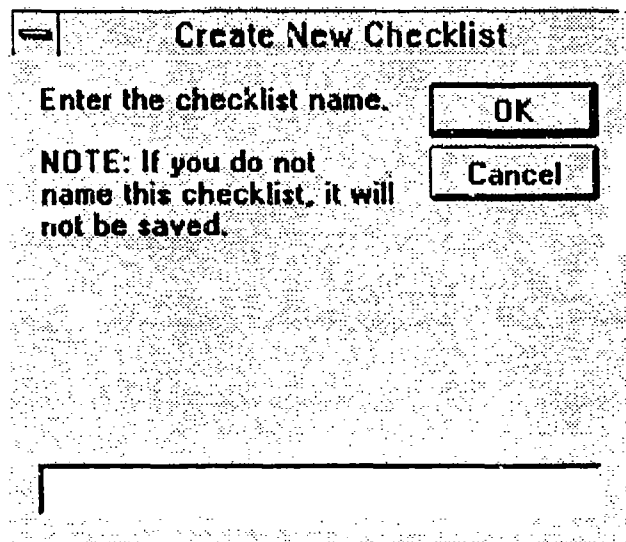
<<Prev Sect. Next Sect.>>

Done

- Scroll up or down through the items in the sections as needed using the **Prev Item** and **Next Item** buttons that are located directly underneath the currently displayed items.
- If you want to go to the next section to select items, select the **Next Sect** button from the set of buttons located at the bottom of the screen.
- Mark each of the items you want for the custom checklist in the *Marked* box to the left of the item, OR select the **Mark Sect** button to select all the items in the section.

To unselect all the items in the section, select the **Unmark Sect** button.

- d. When you are finished selecting all the items you want for your new checklist, select the **Done** button. The *Create New Checklist* screen now appears.

A screenshot of a software dialog box titled "Create New Checklist". The dialog box has a standard Windows-style title bar with a minimize button. Inside the dialog, the text "Enter the checklist name." is followed by a large, empty text input field. To the right of the input field are two buttons: "OK" and "Cancel". Below the input field, there is a note: "NOTE: If you do not name this checklist, it will not be saved." At the bottom of the dialog box, there is a long, empty rectangular field, likely for a data entry or a secondary name.

2. In the data entry field at the bottom of the window, enter the name of your checklist. **If you do not enter a name, the checklist will not be saved.** When you are finished, select the **OK** button. After a few moments, the new checklist is created and you are returned to the *Create/Revise Custom Checklist Main Menu*. The name of the new checklist now appears at the top of the *Create/Revise Custom Checklist Main Menu* window. It is now the active checklist. **Note that there is no protection against using the same name for more than one checklist.** If you name a new checklist using the same name of

an existing checklist, the following message will appear: "There is another checklist with that name. Do you want to use that name?" If you select "yes", then you will have two different checklists with the same name. If you select "no", then you will be prompted to enter another checklist name.

Revise or Delete Existing Checklist

If you want to change any of the items on a checklist or delete a checklist, use the following procedures:

Available Checklists

Choose one of the following checklists to edit by highlighting the checklist and selecting "Continue".

checklist name

Delete **Cancel** **Continue**

1. Select the **Revise Existing Checklist** button from the *Create/Revise Custom Checklist Main Menu*. The *Available Checklists* window now appears.

2. Highlight and select the checklist you want to edit or delete.
3. To edit a checklist:
 - a. Highlight the checklist you want to edit.
 - b. Select the **Continue** button to make that checklist the active checklist. After a few moments you receive a message similar to the following: Checklist (checklist name) has been opened. Do you want to edit this checklist now?

If you select "yes", the *Edit Checklist Items for checklist name* screen appears, where "checklist name" is the name of the *active checklist*.

If you select "no", you are returned to the *Create/Revise Custom Checklist Main Menu*.

Edit Checklist Items for checklist name

Edit Checklist Items

GENERAL

A. General

Order	Text
1 Master	1. Separately developed subsystems are effectively integrated into the operational environment so that they are compatible with existing equipment and procedures (6.1.2).
2 Master	2. With this design, the controller can find the necessary information quickly so that the computer does not delay the controller in any way (6.1.2).

- c. The items you can scroll through on this screen are those items that exist in the active checklist. You can either **Add Items from Master Checklist** using the button at the bottom left of this window, or use the various functions performed by the other buttons at the bottom of the screen. For example, you can create your own checklist item and insert it into your checklist by using the **Insert** button.

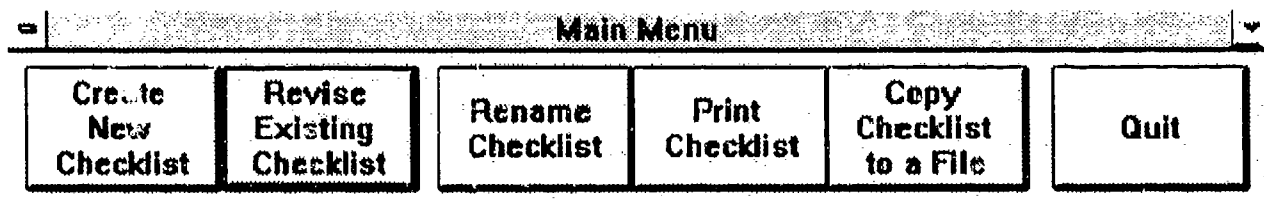
4. To delete a checklist:

- a. From the *Available Checklists* window select the **Delete** button to delete the currently highlighted checklist. The following prompt

appears: **Are you sure you want to delete this checklist?**

- b. If you select "No", you are returned to the *Available Checklists* window. If you select "Yes", the checklist is deleted, and you are returned to the *Available Checklists* window. Select either **Delete**, **Cancel**, or **Continue**, as desired.
- c. Select the **Cancel** button to cancel this operation and return to the *Create/Revise Custom Checklist Main Menu*.

Rename a Checklist



1. If you wish to rename the checklist you are working on (i.e., the active checklist), select the **Rename Checklist** button from the *Create/Revise Custom Checklist Main Menu*. The *Rename Checklist* window appears.

 Rename checklist name Checklist

**Enter New Checklist
Name**

OK

Cancel

2. In the data entry field at the bottom of the window, enter the name of the new checklist (e.g., use the name of the system being evaluated). **If you do not enter a name, the checklist will not be saved.** When you are finished, select the **OK** button.

After a few moments, the new checklist is created and you are returned to the *Create/Revise Custom Checklist Main Menu*. Note that the name of the new checklist now appears at the top of *Create/Revise Custom Checklist Main Menu* window. It is now the *active* checklist. The old checklist name will be automatically deleted.

Print Checklist

Main Menu					
Create New Checklist	Revise Exdisting Checklist	Rename Checklist	Print Checklist	Copy Checklist to a File	Quit

To print a checklist:

Print

Enter number of copies to be printed.

OK

Cancel

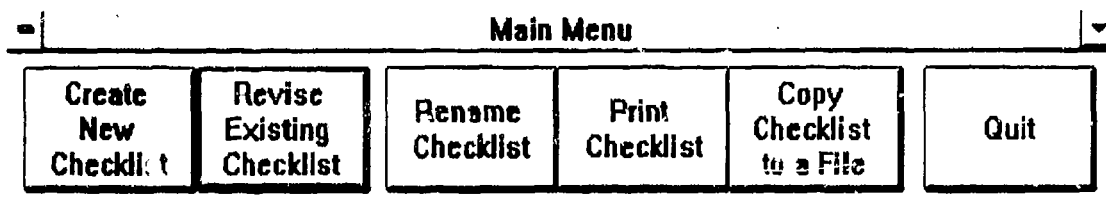
1

1. From the *Create/Revise Custom Checklist Main Menu*, select the **Print Checklist** button. The *Print* window appears, asking you for the number of copies you want to print. By default, the value is *1*, but you can change that to another number.
2. If you select **Cancel**, you are returned to the Main Menu. If you select **OK**, a window appears telling you the status of the print job. The output for this report is the default printer as defined by your

Windows environment. Refer to *Windows Help* facilities for assistance on selecting and defining printers.

3. After the checklist is printed, select the **Return to the Main Menu** button. This returns you to the *Create/Revise Custom Checklist Main Menu*. To generate another copy of a checklist, select the **Print Checklist** button and perform the above steps again.

Copy Checklist to a File



You may wish to store the active checklist in a file of your choice. Note that this step is not necessary to store your created checklist in the system. (The checklist is automatically stored in the system as soon as it is named.) However, it provides a way to store your checklist in a separate file or to give electronic copies of your checklists to others. Note that only the active checklist may be copied or printed. If you are starting "cold," you must first activate your checklist, by selecting the **Revise Existing Checklist** button, highlighting the checklist and selecting the **Continue** button.

1. From the *Create/Revise Custom Checklist Main Menu*, select the **Copy Checklist to a File** button. The following message appears: **Are you sure you want to copy this checklist?**

If you select "No", you are returned to the *Create/Revise Custom Checklist Main Menu*. If you select "Yes", the following window appears:

The screenshot shows a file dialog box with the title "Where do you want to copy this checklist to?". It contains several fields and buttons:

- File Name:** A text field containing "checklis.mdb".
- Directories:** A list box showing "c:\", "c:\checklist", and "data".
- Save File as Type:** A dropdown menu showing "Database (*.mdb)".
- Drives:** A dropdown menu showing "c: ms-dos_6".
- Buttons:** "OK", "Cancel", and "Network..." buttons are on the right.
- Read Only:** A checkbox labeled "Read Only" is checked.

2. If you select **Cancel** from this window, the message **User Aborted Copy Command** appears. Select the **OK** button, and you are returned to the *Create/Revise Custom Checklist Main Menu*.

If you want to continue copying the checklist to a file, select a drive, directory, and filename using the following guidelines:

- ⇒ If you want to change the drive that contains the directory you want, click on the **Drives** pull-down arrow, and then highlight the drive you want.
- ⇒ If you want to change the directory on the selected drive, travel through the directory tree in the **Directories** box, and highlight the directory you want the program to be copied to.
- ⇒ If you select a **Filename** that already exists in the drive and directory combination that you have selected, you will receive the error message **Database Already Exists**. If you receive this message, select the **OK** button. This will return you to the main menu where you can begin again from step 1.

When you have chosen the drive, directory, and file name you want to copy the checklist to, select the **OK** button. You are returned to the *Create/Revise Custom Checklist Main Menu*.

Add Items From Master Checklist

Items added from the Master Checklist will appear in the same section from which they were selected. For example, if you select an item from the "Visual Alerts" section of the Master Checklist, while you are in the "Auditory Alerts" section of your custom checklist, the item will appear only in the "Visual Alerts" section of your custom checklist.

1. When you select the **Add Items From Master Checklist** button from within the *Revise Checklist* function, the *Add Items* screen appears.

Add Items Checklist

Mark Checklist Items to Copy

I. GENERAL

A. General

Marked	Text
☐	1. Separately developed subsystems are effectively integrated into the operational environment so that they are compatible with existing equipment and procedures (6.1.2).
☐	2. With this design, the controller can find the necessary information quickly so that the computer does not delay the controller in any way (6.1.2).

Check Marked check box to add item in checklist

<<Prev

Next >>

Go To...

Mark Section

Unmark Section

<<Prev Section

Next Section>>

Done

- a. Scroll up or down through the items in the sections as needed using the **Prev** and **Next** buttons that are located directly underneath the currently displayed items. As you scroll through the items, you will note that the items that you already selected (either with the keywords or from the Master Checklist) are marked.

- b. If you want to go to the next section to select items, select the **Next Section** button from the set of buttons located at the bottom of the screen.
 - c. Mark each of the items you want for the new checklist in the *Marked* box to the left of the item, OR select the **Mark Section** button to select all the items in the section (or select the **Unmark Section** button to unselect all the items in the section).
 - d. When you are finished selecting all the items you want for your new checklist, select the **Done** button. The *Create New Checklist* screen now appears.
2. When you select the **Done** button, you are returned to the *Add Items Checklist* screen.

Other Buttons on Edit Checklist Screen

These functions are used to edit the custom checklist by:

- 1.) adding items from the Master Checklist;
- 2.) adding checklist items that you have created; and,
- 3.) by deleting or rearranging items in your checklist.

Insert

Copy

Delete

Set Order

Add Items From Master Checklist

Go To

Insert Item

This option is to be used for free text only, as when you wish to create your own checklist item. To insert a new item (i.e. that is not in the Master Checklist) to a checklist that you have created:

1. Select the item that will appear directly **AFTER** the new item you are going to insert.
2. Select the **Insert** button. A new, blank item appears before the currently highlighted item.
3. In the *Text* field, type in the new item as desired.
4. Use the **Copy, Delete, Set Order to Items, Add Items From Master Checklist, Go To** buttons, as desired.
5. When you are finished, select the **Close** button to return to the *Create/Revise Custom Checklist Main Menu*.

Copy Item

The *Copy Item* function allows you to copy an item within the active checklist. You may wish to use this function when a single item applies to more than one component of a system. For example, you may wish to copy items concerning auditory alerts for each of the individual auditory alerts contained in a system. Copying these items would allow you to address checklist items for each auditory alert.

1. Select the item to be copied. (The arrow will be pointing to the item to be copied.)
2. Select the **Copy** button. A new item with the same information as the copied item appears after the currently highlighted item.
3. In the *Text* field, edit the text for the new item as desired (in the example of the auditory alert above, you might add the name of the function or alert into whose section you copied this item). Note that you cannot edit the text for an item from the Master Checklist (marked master below the number) without first copying it.
4. Use the **Insert, Delete, Set Order to Items, Add Items From Master Checklist, Go To** buttons, as desired.
5. When you are finished, select the **Close** button to return to the *Create/Revise Custom Checklist Main Menu*.

Delete Item

To delete an item from the active checklist:

1. Select the item that will be deleted.
2. Select the **Delete** button. A message appears asking "Are you sure you want to delete this item?"

If you select **Cancel**, you are returned to the Main Menu. If you select **OK**, the item is now deleted from the checklist.

3. Use the **Insert, Copy, Set Order to Items, Add Items From Master Checklist, Go To** buttons, as desired.
4. When you are finished, select the **Close** button to return to the *Create/Revise Custom Checklist Main Menu*.

Set Order to Items

This function automatically reorders the items in the checklist by the numbers that you have assigned to them in ascending order. If you do not reorder the items using this function, the items will be displayed "out of order" when you print the list. To reorder the checklist items:

1. Within a given section of the checklist, number items as desired by putting the appropriate number in the *Order* field to the left of the item.
2. Select the **Set Order** button. The items are set in the order you determined numerically.
3. Use the **Insert, Copy, Delete, Add Items From Master Checklist, Go To** buttons, as desired.

4. When you are finished, select the **Close** button to return to the *Create/Revise Custom Checklist Main Menu*.

Go To

If you want to go to a different item **within the currently selected section** without having to go through each of the items using either the **Next Item** or **Prev Item** buttons, do the following:

1. Select the **Go To** button. The *Search* window appears with the list of the items in the currently selected section.
2. To select the item you wish to go to, highlight the item, then select the **Return to Checklist** button. You are returned to the *Edit Checklist* screen, and the item you selected is now displayed. (You must still mark the item to add it to your custom checklist.)
3. Use the **Insert, Copy, Delete, Set Order to Items, Add Items From Master Checklist** buttons, as desired.
4. When you are finished, select the **Close** button to return to the *Create/Revise Custom Checklist Main Menu*.

4. Use Custom Checklist

This section tells you how to use (i.e., fill out) a custom checklist that you have created. To use a checklist, you must both open a checklist and enter a system name in the systems list. If you wish to use the Master Checklist as is, you must first create a copy of it using the *Create/Revise Custom Checklist* program.

Open Checklist

Opening an existing checklist

Edit Systems List

Adding or deleting a system from the systems list

Evaluate System

Using the custom checklist by filling in responses to checklist items

View or Print Checklist

Viewing or printing the active checklist

Open Checklist

You must first open a checklist in order to perform any of the other functions in the *Use Custom Checklist Main Menu*.

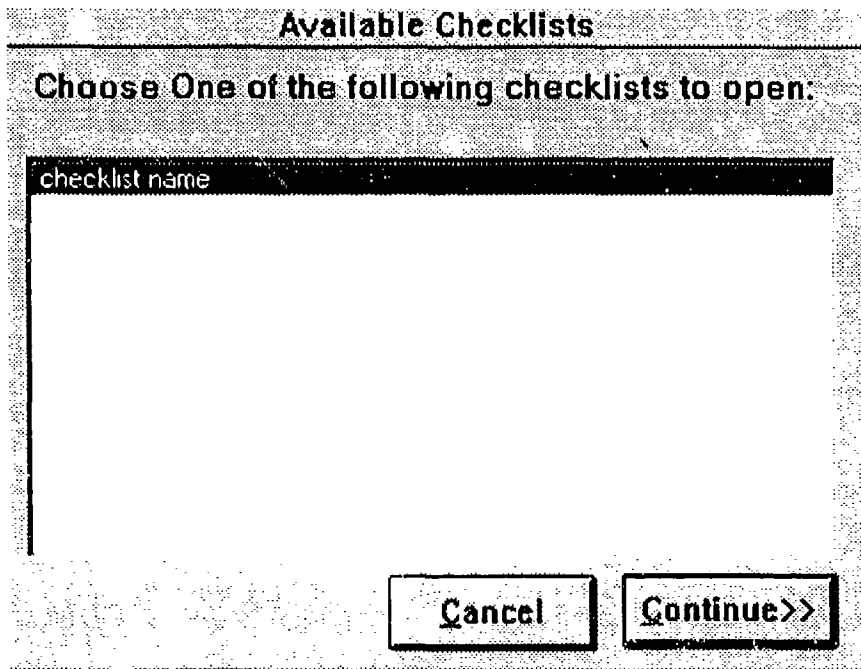
The image shows a graphical user interface window titled "Main Menu". The window has a title bar with a minus sign on the left and a dropdown arrow on the right. Below the title bar, there are five rectangular buttons arranged horizontally. Each button contains text describing a function: "Open Checklist", "Edit Systems List", "Evaluate System", "View or Print Checklist", and "Quit".

Main Menu				
Open Checklist	Edit Systems List	Evaluate System	View or Print Checklist	Quit

If you want to use a checklist other than the currently selected (*active*) checklist, you may open a new checklist and the previously selected checklist will be closed. If a checklist does not yet exist that you would like to use, you must first create the checklist using the *Create/Revise Custom Checklist* program.

To open a checklist, do the following:

1. Select the **Open Checklist** button from the *Use Custom Checklist Main Menu*. The *Available Checklist* window appears.



2. Select the checklist from the scroll-down list by highlighting the checklist and selecting the **Continue** button. If you want to cancel this operation, select the **Cancel** button and you are returned to the *Use Custom Checklist Main Menu*.
3. If you choose to open a checklist, after a few moments of processing you receive a message similar to the following: Checklist (checklist name) has been opened. You may now continue.

Select the **OK** button to continue. You are now returned to the *Use Custom Checklist Main Menu* with the name of the checklist you selected appearing at the top of the *Use Custom Checklist Main Menu*. This checklist is now the *active* checklist.

Edit Systems List

Using the *Edit Systems List* function, you can either add a new system to be evaluated to the current checklist, or delete an existing system from association with the current checklist. Any system that you add or delete will be linked only to the active checklist.

To edit the *Systems List*, do the following:

1. Select the **Edit Systems List** button from the *Use Custom Checklist Main Menu*. The *Systems* screen appears with the following menu button choices:
Add New System, Delete System.

Systems		
checklist name		
List of systems currently in the checklist database:		
new system		
Add New System	Delete System	Return to Main Menu

2. Select one of these menu choices as desired.

Add New System

When you select the **Add New System** button, the *Enter Name* window appears.

1. At the field at the bottom of the window, enter the name of the new system.

Enter name of new system to be ev:

New System

OK

Cancel

2. If you want to keep this name for the new system, select the **OK** button. If you want to cancel this operation, select the **Cancel** button. You are returned to the *Use Custom Checklist Main Menu*.
3. If you chose **OK**, a new system is added to the systems list for the active checklist.
4. Perform an action on another system, or select the **Return to Main Menu** button to return to the *Use Custom Checklist Main Menu*.

Delete System

1. To delete a system from the active checklist, highlight the system you want to delete.
2. Select the **Delete System** button. The system now disappears from the list.

3. Perform an action on another system, or select the **Return to Main Menu** button to return to the *Use Custom Checklist Main Menu*.

Evaluate System

To enter responses to custom checklist items:

1. Select the **Evaluate System** button from the *Use Custom Checklist Main Menu*. The *Evaluate System* window appears.

Evaluate Systems

Choose a system from the following list:
Highlight the system that you wish to evaluate and select "Continue". If the system does not appear on this list, go back to the main menu to edit systems list.

new system

Main Menu

Continue>>

Note the following message at the top of the window: "If the system you wish to evaluate does not appear on this list, go back to the main menu to edit system list." If you need to create a new

system, select the **Edit Systems List** button off of the *Use Custom Checklist Main Menu*.

2. On the *Evaluate System* window, either select the **Main Menu** button to return to the *Use Custom Checklist Main Menu*, or select the system to evaluate by highlighting it and pressing the **Continue** button. The *System Evaluation* screen appears.

System Evaluation - new system											
I. GENERAL A. General											
1. Separately developed subsystems are effectively integrated into the operational environment so that they are compatible with existing equipment and procedures (6.1.2).											
Response: ☐ 1-Satisfactory ☐ 2-Unsatisfactory ☐ 3-Not Applicable ☐ 4-See Notes	Notes: Last Modified on 										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 5px;"><<Prev Section</td> <td style="width: 20%; padding: 5px;">Next Section>></td> <td style="width: 20%; padding: 5px;"><<Prev Item</td> <td style="width: 20%; padding: 5px;">Next Item>></td> <td style="width: 20%; padding: 5px;">Return to Main Menu</td> </tr> <tr> <td colspan="2" style="padding: 5px;">Contents</td> <td style="padding: 5px;">View Section</td> <td style="padding: 5px;">Check Spelling</td> <td></td> </tr> </table>		<<Prev Section	Next Section>>	<<Prev Item	Next Item>>	Return to Main Menu	Contents		View Section	Check Spelling	
<<Prev Section	Next Section>>	<<Prev Item	Next Item>>	Return to Main Menu							
Contents		View Section	Check Spelling								

3. The *System Evaluation* data entry window has the first section and sub-section of the active checklist displayed in the top section of the screen, and has the first checklist item for the first section displayed in the middle portion of the screen.

4. You can scroll through the checklist items in a number of ways, as summarized below:
- a. Scroll through sections using the **Prev Section** and **Next Section** buttons, and/or by selecting the **Contents** button and choosing a section or sub-section from the **Contents** scroll-down menu. All three buttons are located at the top right-hand corner of the screen.
 - b. Scroll through the checklist items using the **Prev Item** and **Next Item** buttons, and/or the **View Section** button and selecting a checklist item from the list of items in the currently selected section. These three buttons are located at the bottom of the screen.
 - c. Select the **Prev Item** and/or **Next Item** buttons, as appropriate, until the section or subsection you want appears in the *Section* display area.
 - d. *Note:* The **Prev Section**, **Next Section**, **Prev Item**, and **Next Item** buttons are only functional if they are highlighted. If one or the other in these pairs of buttons are not highlighted, it means that you have reached either the beginning or the end of the checklist contents.

5. When you display a checklist item you want to work with, note the following:
 - a. If you have already answered a checklist item, the date you last entered a response appears in the *Last Modified On* field. For any item that you have already selected a response for, an asterisk (*) appears to the left of that item.
 - b. If the checklist item displayed by the *View Checklist* function is longer than the *Item List* window, a scroll-down bar appears on the right side of the list.
6. For the current checklist item, provide a response value in the *Response* area, or modify a previously entered response, as necessary. Select one of the four choices by clicking on the circle next to the choice: **1) Satisfactory, 2) Unsatisfactory, 3) Not Applicable, 4) See Notes.**
7. After you have selected a response, you can write free-form notes for the current checklist item in the *Notes* field. **You must select a response to be able to use the Notes field.** You can run the **Check Spelling** function when you have finished entering the *Notes* text.
8. When you are finished using the checklist, select the **Return to Main Menu** button to return to the *Use Custom Checklist Main Menu*.

9. When you have completed all the checklist items for this system, you can display or print your responses. Refer to the next section *View or Print Checklist* for instructions on how to display or print your completed checklist.

View or Print Checklist

To view or print the active checklist, do the following:

1. Select the **View or Print Checklist** button on the *Main Menu*. The *Report* window appears with one of the following choices: *Completed items with notes*, *Completed items without notes*.

Report

Choose a report from the following list:

☒ Completed Items With Notes

☐ Completed Items Without Notes

Main Menu **Continue>>**

2. Select the report type that you want by either highlighting the report and selecting the **Continue** button. The next *Report* window now appears.

Report		
Choose a system from the following list:		
[All Systems] new system		
Main Menu	<<Back	Continue>>

Note that for this and all subsequent windows for this function that you can go back to the previous screen using the **Back** button if you feel you need to change any previous selections.

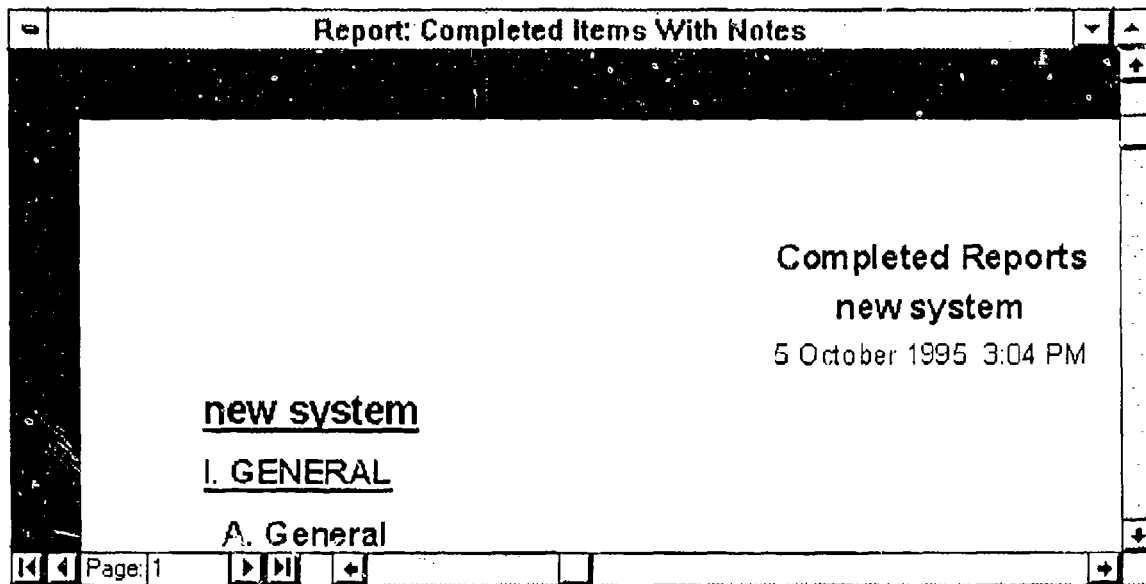
3. Select the system you want to view or print. The next *Report* window now appears.

Report				
checklist				
<<Back	View Report On Screen	Print Report on Printer	Save Report to File	Return to Main Menu

4. From the menu on this last *Report* window, follow the instructions for one of the following choices:
View Report on Screen, Print Report on Printer, Save Report to File.

View Report on Screen

The output for this report appears in a new window.



1. You can manipulate the size and position of this window as with any standard window (for example: the top right-hand button of the new window increases the size of the window; clicking once on the body of the window decreases the size of the image). Refer to *Windows Help* facilities for assistance in manipulating windows.
2. After the report is printed on the screen, read through the report as necessary, then close the report using the standard procedure for closing a *Microsoft Windows* window.
3. At the final *Report* window which now appears, select the **Return to the Main Menu** button to

return to the *Use Custom Checklist Main Menu*, or select the appropriate button to generate another report.

Print Report on Printer

1. The output for this report is the default printer as defined by your *Windows* environment. Refer to *Windows Help* facilities for assistance on selecting and defining printers.
2. When you select this choice, a window appears telling you the status of the print job.
3. After the report is printed, select the **Return to the Main Menu** button. This returns you to the *Use Custom Checklist Main Menu*. To generate another report, select the **Report** button and perform the above steps again.

Save Report to File

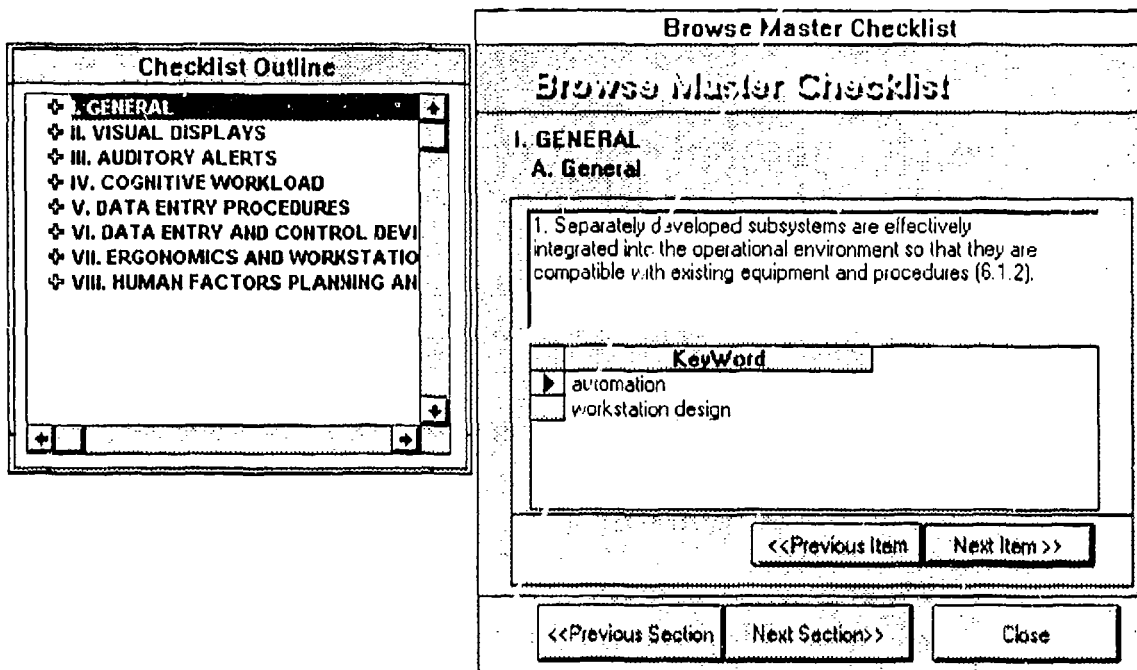
When you select this choice, a list of file formats appears in the *Output To* window. Do the following:

1. Select the output format you want. A standard *Windows* file selection screen appears, with the following fields: *File Name*, *List Files of Type*, *Directories*, *Drives*.
2. Select the appropriate drive, directory, and file name you want for the output.

3. When you are ready to send the output to the selected file, select the **OK** button. A message appears telling you that the printing is proceeding. When it is done, you are returned to the *Report* menu.
4. Select the **Return to the Main Menu** button. This returns you the *Use Custom Checklist Main Menu*. To generate another report, select the **Report** button and perform the above steps again.

5. Browse Master Checklist

1. When you select the *Browse Master Checklist* icon, the *Checklist Outline* and *Browse Master Checklist* screens appear. The *Checklist Outline* screen contains a list of the sections in the Master Checklist. The *Browse Master Checklist* screen displays the first item in the Master Checklist displayed in the *Section*, *Text*, and *Keyword* fields.



2. You can scroll through the Master Checklist using a combination of the *Checklist Outline* and the *Browse Master Checklist* screens, as described on the following page:

Checklist Outline - Use the scroll-down menu in this screen according to the following guidelines:

- To begin displaying the checklist items in a given section, highlight that section on the scroll-down menu. The first item for the selected section appears in the fields in the *Browse Master Checklist* screen.
- To select a subsection within a section:
 - a. Double-click on the section name in the scroll-down menu. The subsections for that section appear on the scroll-down menu.
 - b. Highlight the subsection you want to view. The first item for that subsection appears in the fields on the *Browse Master Checklist* screen.
- If you want to collapse the list of subsections that have been revealed, double-click on the section name.

Browse Master Checklist - You can move through the Master Checklist using a combination of the following four buttons at the bottom of the screen:

Previous Item	Go to the previous item in the currently selected section
Next Item	Go to the next item in the currently selected section

Previous Section Go to the previous section in the Master Checklist

Next Section Go to the next section in the Master Checklist

Note the following guidelines when using this screen:

- When you arrive at a new section or subsection, the section name on the *Checklist Outline* scroll-down menu becomes highlighted.
 - When the first item in a section or subsection is the current item, the **Previous Item** button brings you to the first item of the *Previous Section or Subsection*.
3. After you are finished browsing through the Master Checklist, select the **Close** button. This returns you to the *ATC Electronic Checklist* group.

