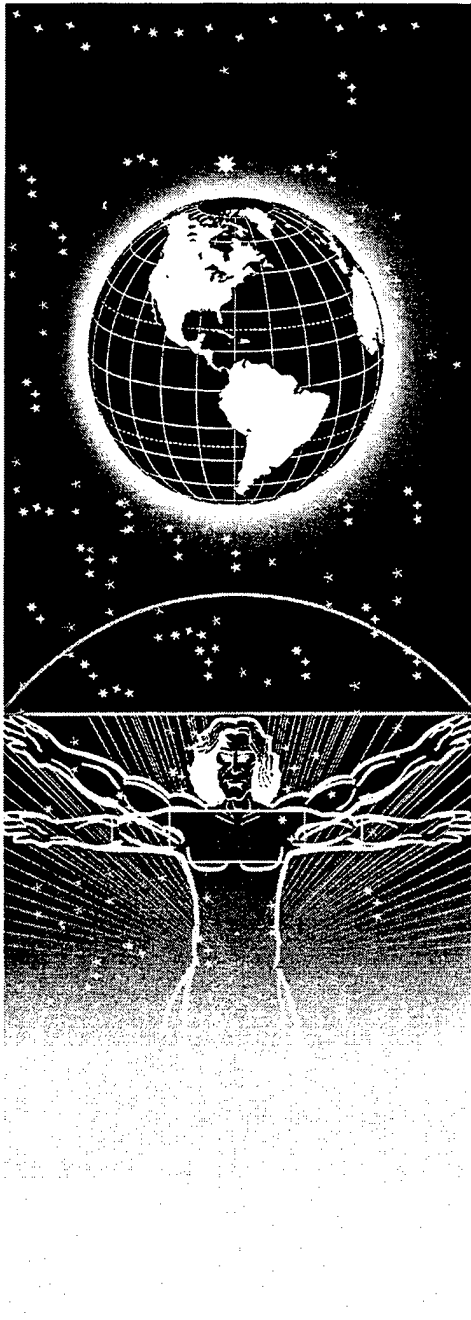


AL/HR-TP-1997-0023



# UNITED STATES AIR FORCE RESEARCH LABORATORY

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## DESKTOP DECISION TRAINER USER'S MANUAL

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The Office of Public Affairs has reviewed this paper, and it is releasable to the National Technical Information Service, where it will be available to the general public, including foreign nationals.

This report has been reviewed and is approved for publication.

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# 1. INTRODUCTION

## **1.1. Installing**

DDT is designed to run on Windows 3.1 or Windows95.

The set of DDT installation floppies contains eight numbered disks. To begin installing, insert the first disk (labeled disk #1) into floppy drive and begin install procedure. Replace each disk with the successive numbered disk as prompted.

Windows95 users need not have the setup program alter their "autoexec.bat" file. Windows95 users should answer "No" when the message box asks if they would like the setup program to alter the file.

When installation is complete, the DDT icon will appear on the desktop or in the specified drive.

**BOTH WINDOWS 95 AND WINDOWS 3.1 MUST REBOOT /RESTART BEFORE RUNNING THE DDT PROGRAM FROM THE HARD DRIVE.**

## **1.2. Purpose**

DDT, or Desktop Decision Trainer, is an interactive multimedia application. Designed to train users in decision making skills, the course details the elements of decisions, the decision-making process, optimal means of information gathering and assessing, and the most rational way to weigh options.

## **1.3. Premise**

The course is presented in a "role play" format. This format is used for two reasons: it is interesting, and removes the user from possible biases presented by more realistic situations. The scenario takes place in the future, in the year 2275.

According to the course's fictional account, the U.S. Air Force has become the Star Force, an interplanetary military force. The user is a logistician with the Star Force, and is enrolled in the Star Force Academy to take a course in decision making.. All information is presented as part of this scenario, and the user moves through the course in mock stages of the "Star Force Academy" course.

## **1.4. Method**

There are three major portions of the course. Lesson #1 covers the elements of a decision, Lesson #2 covers the decision-making process, and the third section has three simulations, or exercises, in decision making. The user demonstrates knowledge on the test portions of lessons #1 and #2, and in the simulation exercises of the third portion.

The scores of the first two tests are recorded in the student database. Simulation scores are also recorded, and the student has a chance to view their score and the scoring criteria after completing the case exercises.

## **2. CONTROLS**

### **2.1. Logging On**

The title screen offers the viewer two choices: "LOG ON" or "QUIT." To begin the lesson, the user selects the "LOG ON" button by clicking the space with the left mouse button. On the following screen, the user must type his or her name and rank or select it from the student list in order to enter the lesson. If the student makes a mistake in the name selection, "CANCEL" erases the selection or new name entry. After completing either a name selection or new entry, the user selects the "OK" button to begin the lesson.

The user will be addressed by the selected name and rank throughout the lesson.

### **2.2. Menu**

If a user selects a name previously entered, a menu bar shows on the screen giving the user options for the course session starting point. The student has three options: to continue where the last lesson ended, to begin at a specific case or lesson, or to begin the course from the introduction.

A new user must begin from the course introduction.

### **2.2. Quitting**

The user may quit at any time by selecting the "QUIT" button in the upper left corner of the screen.

A user may move to a specific point in the lesson at any time by selecting the "QUIT" button, then choosing the course location on the menu box (e.g., quitting in the middle of lesson #1 and moving directly to lesson #2).

If "QUIT" is selected during the simulations in the "holosim", the lesson skips to the evaluation portion. "QUIT" must be selected again to move to a new course location, or to end the session.

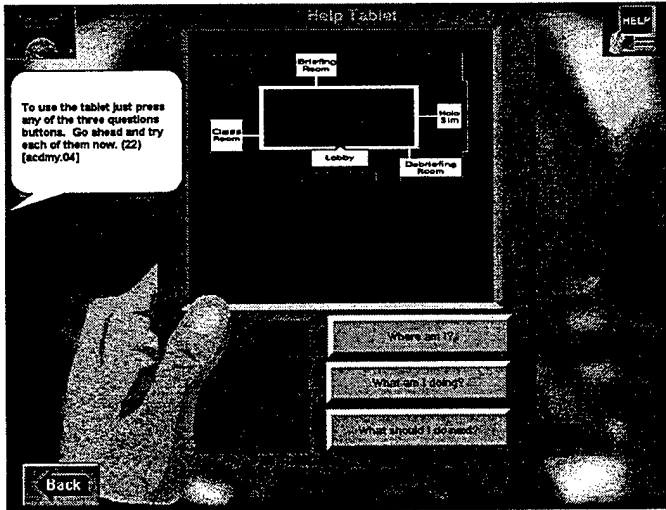
### **2.3. Navigating within the Lesson**

The user moves throughout the lesson via two alternatives: the "NEXT" and "BACK" buttons, located at the bottom left and right corners of the screen, and the various button options throughout the lesson. Each button in the lesson either progresses the student to the following screen or leads to a screen of information.

To move to a specific point in the lesson, the user may click on the "QUIT" button at any time, and select the desired location from the menu box.

### **2.4. HELP**

The help screen is introduced in the "Academy" portion of the lesson, and is visible at all times thereafter. It is used by the user as an orientation aid.



The help screen answers three questions: “Where am I?”; “What am I doing”; and “What should I do next?”. When the user is confused about their location or the activity in progress, he/she may select the help button at any time in the top right corner of the screen.

Once “HELP” has been selected, the answer to the question selected is displayed in the tablet screen. The user returns to the lesson by pushing the “RETURN” button.

### 3. LESSON #1

#### 3.1. Lesson Setting

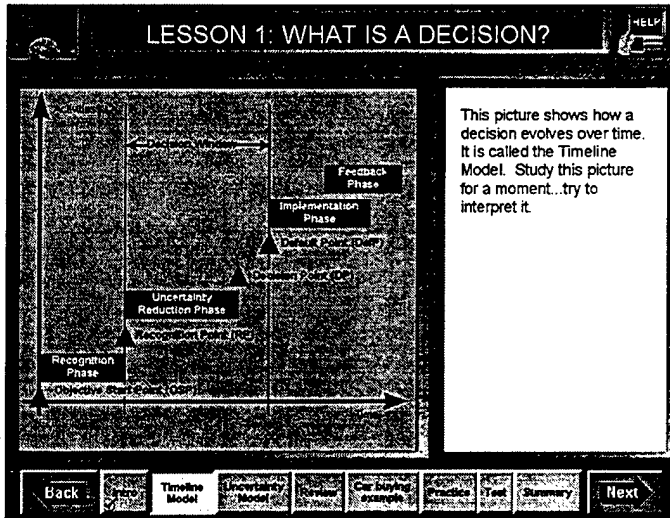
The user begins the first lesson of the course in the classroom setting at the Academy. Lesson #1 is entitled “What is a Decision?”, and is given through the “cyberdesk” at the Academy classroom.

As the first screens detail, the user may move through the lesson by the “Next” and “Back” buttons, or by selecting the titles in the outline at the bottom of the lesson screen. The user is encouraged to move freely throughout the lesson to fully understand the content.

Completed portions of the lesson will show a check mark on the outline. All portions of the section must be viewed and/or completed in order for a check mark to appear. The user may return to previous sections to complete them. Completed sections may also be reviewed.

#### 3.2. Introduction

The introduction considers the difficulties decision making can present. It introduces two conceptual models which will be the guidelines for lesson#1: The Timeline Model, and the Uncertainty Model.



### 3.3. *Timeline Model*

The model shows how a decision evolves over time. The illustration helps the user understand that the decision process is a reasonable, comprehensible series of events.

To move through the model, each individual element may be selected by clicking on the title, or the Next and Back buttons may be used.

### 3.4. *Uncertainty Model*

This model is a chart, or tree, showing the different types of uncertainty involved in decision making.

The user moves through this model via the “Next” and “Back” buttons, or via clicking on the titles in the chart itself.

### 3.5. *Review*

The review links the two models together. The user navigates via the “Next” button only.

### 3.6. *Car Buying Example*

The example uses a familiar situation, buying a car, to illustrate the concepts presented in the two models. The user navigates via the Next and Back buttons only.

### 3.7. *Practice*

Practice questions are presented to the student at their “cyberdesk”, and are a review for the test. Instructions for each question are presented, where necessary. Feedback for the user is immediate, illustrating the correct and incorrect responses in the right-hand box on the screen. The Practice score is not recorded in the database.

The answer choices are selected by clicking on their titles within the models. The red arrows on the Timeline model are not selectable; for these answer choices, the user must click on the title which corresponds to the arrow.

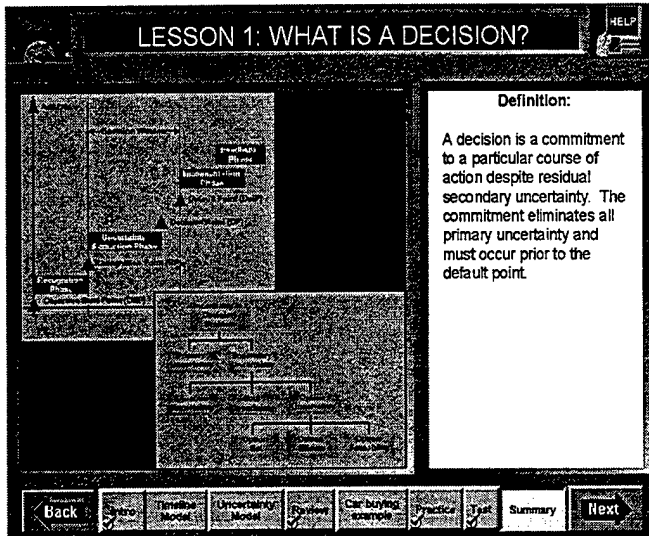
### 3.8. Test

Test questions come from the timeline and uncertainty models, and are similar to the review questions. The student does not receive feedback for responses, but views their final score after completing the test. The score is recorded in the student database.

The test may be repeated for an improved score.

### 3.9. Summary

The summary defines a decision and summarizes the contents of Lesson #1.



At this point, the student is encouraged to review any portion of the lesson that remains unclear. This can be done by clicking on the outline to the appropriate title, or by using the “Back” button.

### 3.10. Lounge

The lounge area is a resting screen between lessons #1 and #2. There is no activity in the lounge.



## 4. LESSON #2

### 4.1. Lesson Setting

Lesson #2 is titled “How To Make A Decision”. The Lesson begins as the student reenters the Academy classroom.

The lesson activities takes place in the “holosim”, a workstation simulator presenting the student with a realistic control panel, problem, and environment. The lesson involves an increased level of interactivity, and prepares the user for the decision-making test: the simulation exercises of cases 1, 2, and 3, which follow.

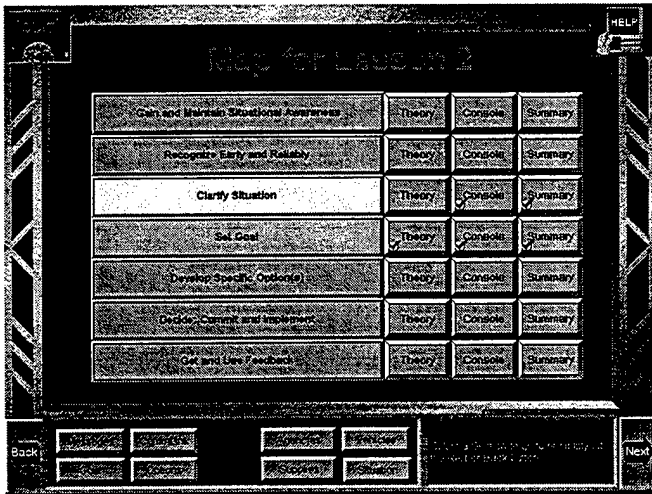
The navigation for this lesson includes the “Next” and “Back” buttons, the Lesson Map, and the control buttons of the workstation.

### 4.2. Lesson Map: How to Make A Decision

The elements of Lesson #2 are displayed in the Lesson Map. Though it is best to complete Lesson #2 in sequence, the student can access and review any portion of the lesson by clicking on the various sections of the map.

Completed portions of the lesson will show a check mark on the Lesson Map. In addition, completed lesson topics will be colored green while partially completed lesson topics will be colored yellow.

Each topic of Lesson #2 has three sections: “Theory”, “Console”, and “Summary”.



#### 4.2.1. "Theory"

"Theory" is an introduction to the topic by the Academy Guide. This portion is navigated by the "Next" button.

#### 4.2.2. "Console"

The "Console" section introduces the student to the workstation simulator as a practice environment. The functions of the buttons on the workstation console are discussed, and their relation to each lesson topic.

#### 4.2.3. "Summary"

The "Summary" section reviews the theory of the section topic, and relates the topic to the student's job as a logistician.

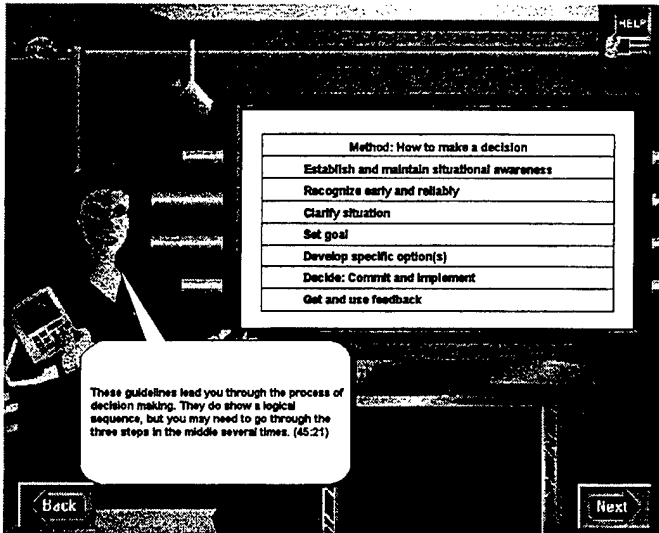
### 4.3. *Establish and Maintain Situational Awareness*

This topic addresses the importance of understanding the "Big Picture" and overall objectives.

The "Theory" section uses the "Next" button as the only navigation.

The "Console" section directs the user to select the blue holosim button titled "Situation". "Situation" has three subsections: history, briefing and orders. All three subsections may be viewed at this time.

The user may click on any subsection to "Situation" before continuing with the lesson, or he/she may click on "Next" immediately to return to the lesson introduction.



#### **4.4. Recognize Early and Reliably**

This topic addresses the importance of properly interpreting the importance of messages, and taking action where necessary.

The “Theory” section uses the “Next” button as the only navigation.

The “Console” section directs the user to select the yellow holosim button titled “Messages.” A flashing “Messages” button indicates that new mail has arrived. Clicking on the “Messages” button reveals the message icons and subjects, and clicking on the icons then reveals the entire message in the right-hand side of the screen.

The user must read the message and decide whether it requires forwarding or an immediate decision, or if it belongs in the trash. Each of these three choices is selected by clicking the box next to the selection. An incorrect choice will illicit feedback correcting the user.

#### **4.5. Clarify Situation**

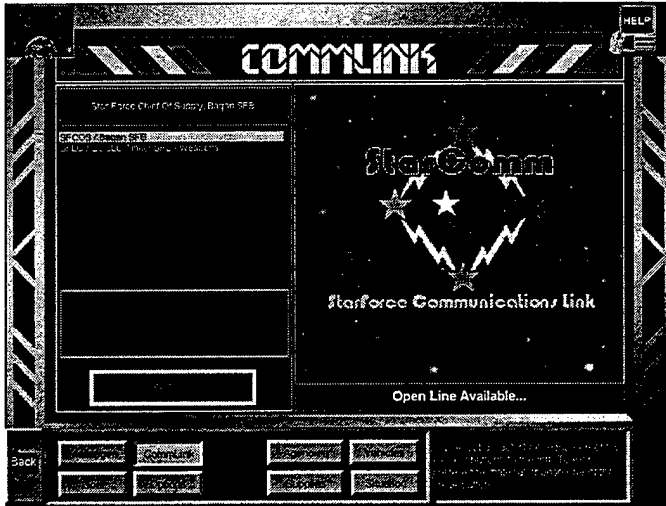
This topic addresses the importance of communicating with proper personnel and revealing all relevant information when making a decision. Consulting individuals and reviewing reference material are two important ways of clarifying a situation.

The “Theory” section uses the “Next” button as the only navigation.

The “Console” section directs the user to select the yellow “CommLink” button. Clicking on this reveals the choices of personnel that the user may call. He/she can then consult with the personnel contacted about the problem at hand.

### 4.5.1. Calling

To complete a call, the user selects one of the personnel options, then clicks on the “connect” button. Once a call has been placed, the user then selects a query, or a topic for discussion, with the personnel contacted. Each contact has different information, according to their station and position.



Once a query has been answered, a new query may be selected, or the user may select “disconnect” and terminate the call. At this point, a new contact may be called.

Once calls are complete, the user selects the “Next” button to continue the console section of the lesson topic.

### 4.5.2. Reference

The second part of the console section directs the user to select the blue holosim Reference buttons. These Reference buttons are used to clarify the messages received on the CommLink communication.

First, the user is directed to select the blue “Supplies” button, where all supplies are listed and may be clicked on to reveal information and statistics. This reference material helps the user to decipher the importance of messages concerning supply problems.

Next, the user is directed to select the blue “vehicles” button, where all possible transportation vehicles are listed. Clicking on the vehicle name reveals its information and statistics. This reference material helps the user to understand the options for transporting supplies.

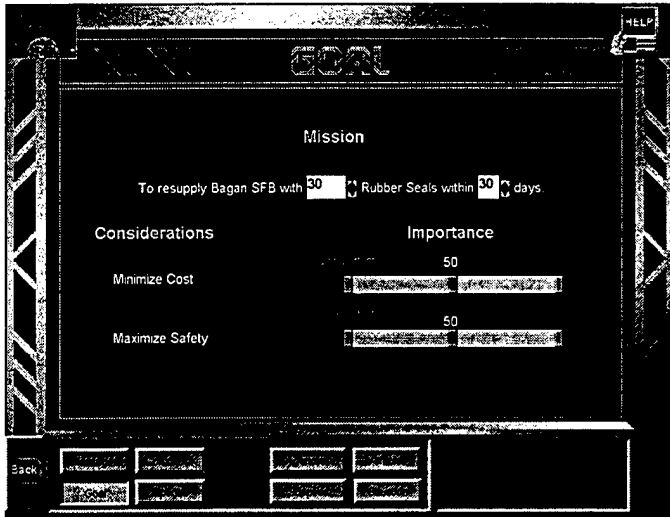
The user may view any transportation or supply information, and continues to the “Summary” section by selecting the “Next” button at any time.

## 4.6. Set Goal

This topic addresses the importance of having a set goal from the outset of the decision process, to guide any action that takes place.

The “Theory” section uses the “Next” button as the only navigation.

The “Console” section directs the user to select the yellow holosim button titled “Goal”.



#### 4.6.1. Setting the Goal Statement

Once the user selects the “Goal” button, he/she must determine both the number of items to send and the days within which to send them. A default amount has been entered into the goal statement, but the user must change these to fit the case problem before continuing with the lesson.

The numbers of each counter can be changed by clicking on the counter arrows, or by directly typing the desired number.

#### 4.6.2. Considerations

After selecting a goal, the user must select the “considerations”. Both cost and safety are constraints, or considerations, which will influence the way the goal is carried out. The user must decide the importance of cost and safety, on a scale of 1-100, based on the nature of the problem. The number value on the considerations scale is adjusted by clicking on the scale marker and dragging it to the proper location, or by clicking on the counter arrows.

### 4.7. Develop Specific Options

This topic addresses the most complex part of the decision-making process: determining specific options for action.

The “Theory” section reviews the previous lesson #2 topics, then discusses the various elements of determining options. The “Next” and “Back” button are used for navigation.

The “Console” section directs the user to select the yellow holosim button titled “Options”.

Clicking on “Options” reveals a map of the Star Force’s earth and planetary bases, and the supply routes between them.

#### 4.7.1. Shipment Request Form

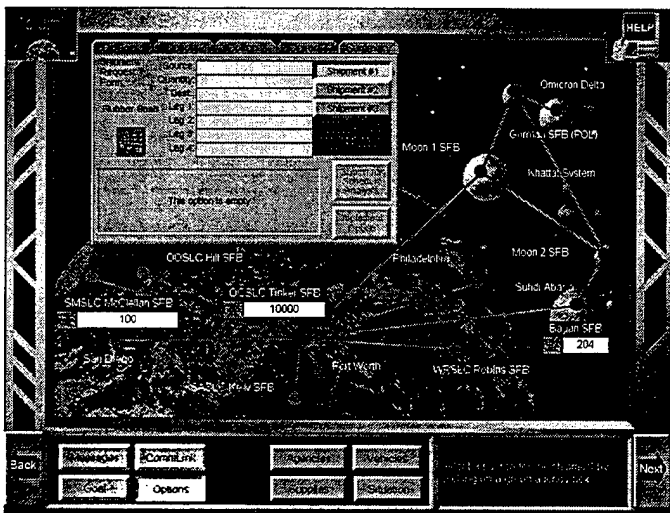
After clicking on “Options”, a tabbed box labeled “Shipment Request Form” appears in the center of the screen. The user will list the options for the decision here, and the paths to achieve the goal identified in the “Set Goal” section.

The tabs at the top of the form are labeled “Option 1”, “Option 2”, “Option 3”, “Option 4”, and “Summary”. The item or supply to be shipped is listed and pictured on the left-hand side of the card. The shipment information will be filled-in in sequence, beginning with supply source.

#### 4.7.2. Source

The first option choice the user determines is the source for the needed supply. The bases with a surplus supply of the case item are listed in individual boxes on the map, along with the number of supplies each has available. The user is directed to select one of the possible sources by clicking on it.

Selecting a source automatically inserts the selection into the “Source” slot on the shipment request form.



#### 4.7.3. Quantity

The user then determines the proper quantity to ship. This is done by typing in or using the counter arrow keys to show the number of units in the box next to the source. The number of units should correspond with the number needed according to the exercise goal.

Since this is a practice section, incorrect choices illicit feedback correcting the user.

#### 4.7.4. Destination

Destination is shortened to “Dest.” on the request form. To select the destination, the user clicks on the base location where the supplies are needed.

In Lesson #2, since it is a practice lesson, a destination that does not correspond with the destination listed in the goal will be corrected with feedback.

#### 4.7.5. Legs

There are 4 “Legs” of transportation possible for each shipment, because a shipment may need to transfer a few times before reaching its destination. Multiple legs may be necessary to transport the item from its source to the destination.

Each stop requires a vehicle selection. Vehicles vary in speed, cost, and available cargo space. All information is listed under the transportation options for each leg, as well as under the blue “vehicle” reference button (accessible during the case exercises).

The selection process is repeated for each leg.

#### 4.7.6. Shipments

An option can be composed of multiple shipments; this may be necessary if the goal amount is large, since limited numbers of supplies can be transported per vehicle. Therefore, both the vehicles selected for transportation and the goal amount will determine how many shipments are necessary for each option.

#### 4.7.7. Submit for Schedule Analysis

Once an option has a shipment that properly reaches its destination, the “Schedule for Submit Analysis” button may be selected. This summarizes the number of units that will reach the destination in each shipment, the cost, and the time it will take for the first shipment to arrive.

This button can not be clicked unless the option is composed of a viable shipment (e.g., one that reaches the destination listed on the shipment Request Form).

In the case exercises of the workstation simulator (the holosim), once an option has been analyzed, it can be implemented, even if it is the only option developed and does not meet the goal amount.

### **4.8. Decide: Commit and Implement**

This topic addresses the importance of choosing among the options and making a decision.

The “theory” section uses the “Next” button as the only navigation.

The “console” section directs the user to select one of the options determined in the “Develop Specific Option(s)” section by clicking on the option tab. An option must be selected/highlighted to be fully visible, and to be implemented.

#### 4.8.1. Option

To review the Options for shipping before implementing one of them, the user may click on any “Option #” tab to view that option.

#### 4.8.2. Summary

The user can click on the “Summary” tab to see the total cost of each shipment within the option, and how all the completed and submitted options compare. This summary and comparison helps the user to determine the best option for implementation.

#### 4.8.3. Implementing

Once the best option for implementation has been decided upon, the user clicks on the “Implement Option” button on the lower right-hand corner of the form. This ends the decision-making portion of the exercise.

Since Lesson #2 is a practice exercise, feedback for the selected option is immediate.

### **4.9. Get and Use Feedback**

This topic addresses the importance of listening to feedback once a decision has been implemented. Determining if the decision made was the best one, or if it could have been improved with more referencing, better communications, or more options, is an important last step in decision making.

The “theory” section uses the “Next” button as the only navigation.

The “Console” section recaps the Lesson Map, and allows the user to review any portion of the lesson by clicking on the map.

## **5. SIMULATIONS**

Following Lesson #2, the student attends a briefing in the Academy classroom. This briefing sets the stage for the holosim simulation exercises that are to follow.

### **5.1. Control Panel**

The control panel remains the same as the Lesson #2 example illustrated, with the following exceptions:

#### 5.1.1. References

The blue button labeled “Situation” now reflects the briefing given before the case exercises begin. The “History”, “Briefing” and “Orders” correspond with the briefing.

The “Agencies” button accesses further information about the agencies and officers who can be reached through the CommLink.

#### 5.1.2. CommLink

The user may select from among all twelve contact personnel when using the CommLink.

### 5.1.3. Options

The “Options” button, where the user determines the shipment options and implements a course of action, is not accessible until the goal has been determined.

The blue reference buttons and the yellow case information buttons can be accessed at any time and in any order throughout the simulation exercise.

### 5.2. Case 1

The premise of the case exercise is a targeting systems failure due to faulty C-2 cards. The supply of functioning cards is now dwindling on an essential Star Force base. As the logistician, the user must decide on the best course of action in the situation.

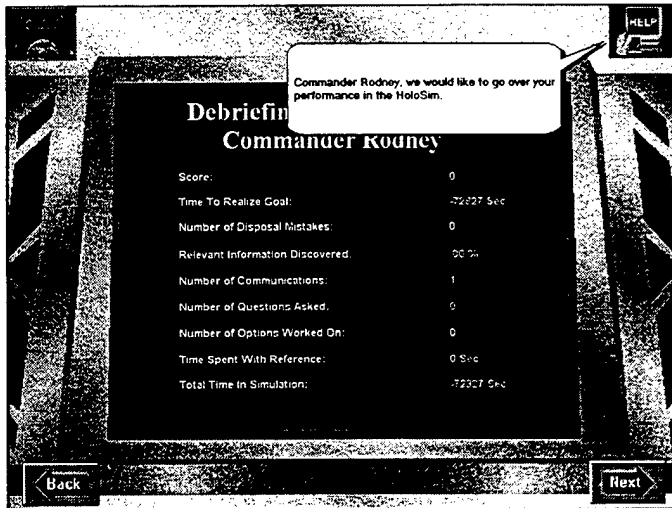
### 5.3. Case 2

The premise of the case exercise is a fuel canister supply shortage. As the logistician, the user must decide on the best course of action in the situation.

### 5.4. Case 3

The premise of the case exercise is a food kit contamination problem. As the logistician, the user must decide on the best course of action in the situation.

## 6. Debriefing and Evaluation



After each of the three simulation exercises in the holosim, the user’s performance is evaluated in the official “Debriefing”. The decision made by the user on handling the case is scored according to a set of criteria.

- **Time To Realize Goal:**

The amount of time spent after formulating goal.

- **Number of Disposal Mistakes:**

The messages received and read by the user can be either thrown in the trash, forwarded, or marked "urgent: decision required". This scoring number refers to the number of errors made by the user in assigning importance to the incoming messages.

- **Relevant Information Discovered:**

This is a percentage of the amount of information available to be learned during the exercise.

- **Number of Communications:**

How many personnel were contacted via CommLink. If the same individual was contacted more than once, all contact instances are counted.

- **Number of Questions Asked:**

Total number of queries/questions asked of contacts. Each contact may be asked several questions.

- **Number of Options Worked On:**

Total number of Options, from 1-4, completed on the Shipping Request Form.

- **Time Spent With Reference:**

Amount of time the user spent viewing reference material listed under "Agencies", "Supplies", "Vehicles" and "Situation" buttons.

- **Total Time in Simulation:**

Total time spent in the holosim case exercise, from entering until completing or quitting case.

- **Overall Score**

The user is given an overall score based on the criteria, and is then sent back to the hallway of the Academy. The overall score is recorded in the student database. At this point, the user may continue with another case exercise or select "QUIT".

Once all three cases have been completed, the student is led to the academy exit and the lesson is finished.

## **7. Scoring Tips**

- **SAFETY:**

The safety of the supply delivery is effected by the route for transportation. The briefing and/or messages detail which areas may be considered safety risks, since they have a higher amount of warfare activity and/or hostile presence.

- **SPEED:**

Speed counts. Taking the time to analyze all options is necessary, but not unduly so. Implement your option as soon as you feel reasonably confident.

- **COST:**

Generally, the more stops or “legs” a shipment has between the source and the destination, the more costly the transportation will be.

- **COMMLINK:**

Personnel can be contacted more than once on the same case, particularly following the receipt of additional messages, and they may have further information. This can increase the amount of relevant information obtained.

- **GOAL:**

The proper number of units to ship and days in which to send them can be determined based on the information in the messages, the personnel reports and the reference information. Exact numbers are not always specified, and determining this is part of the exercise, since it demonstrates decision-making skill.

- **IMPROVING YOUR SCORE:**

Any lesson can be repeated, and the score will be recorded. A repeated case will record both the initial and subsequent scores if the user logs off between attempts. If the user repeats the same case within the same session, the second score overwrites the initial score.

The user should not quit in the middle of a case exercise. If he/she selects “QUIT” during a case exercise, the exercise terminates and leads to the evaluation screen. The exercise score, generally a “0” overall, is recorded, as is the time elapsed. Therefore, once a lesson is begun, it is best to complete it before logging off.