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COURTNEY User's Guide

Gary A. Ropp

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Approved and released by
Dennis Schurmeir

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53335 Ryne Road
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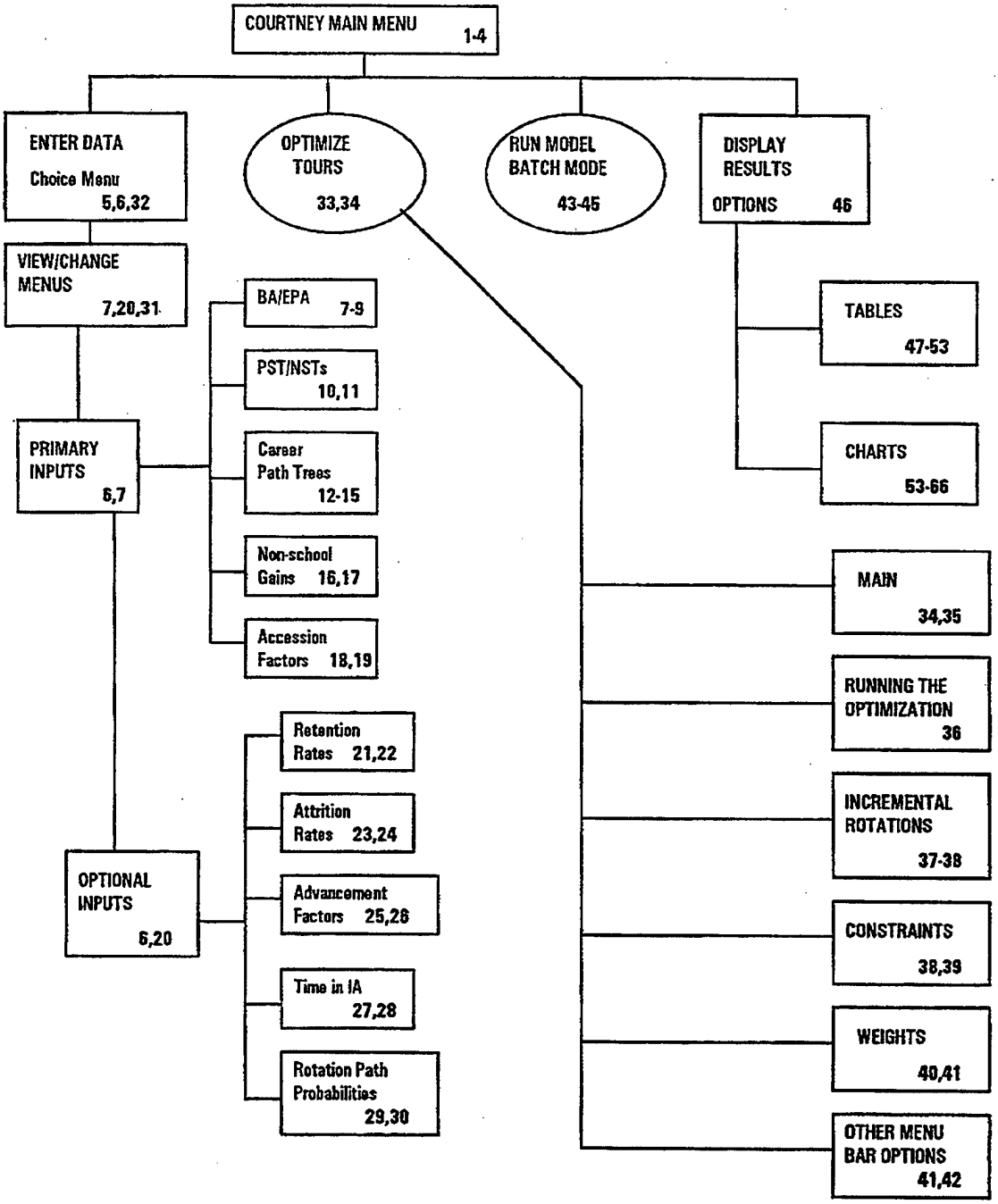

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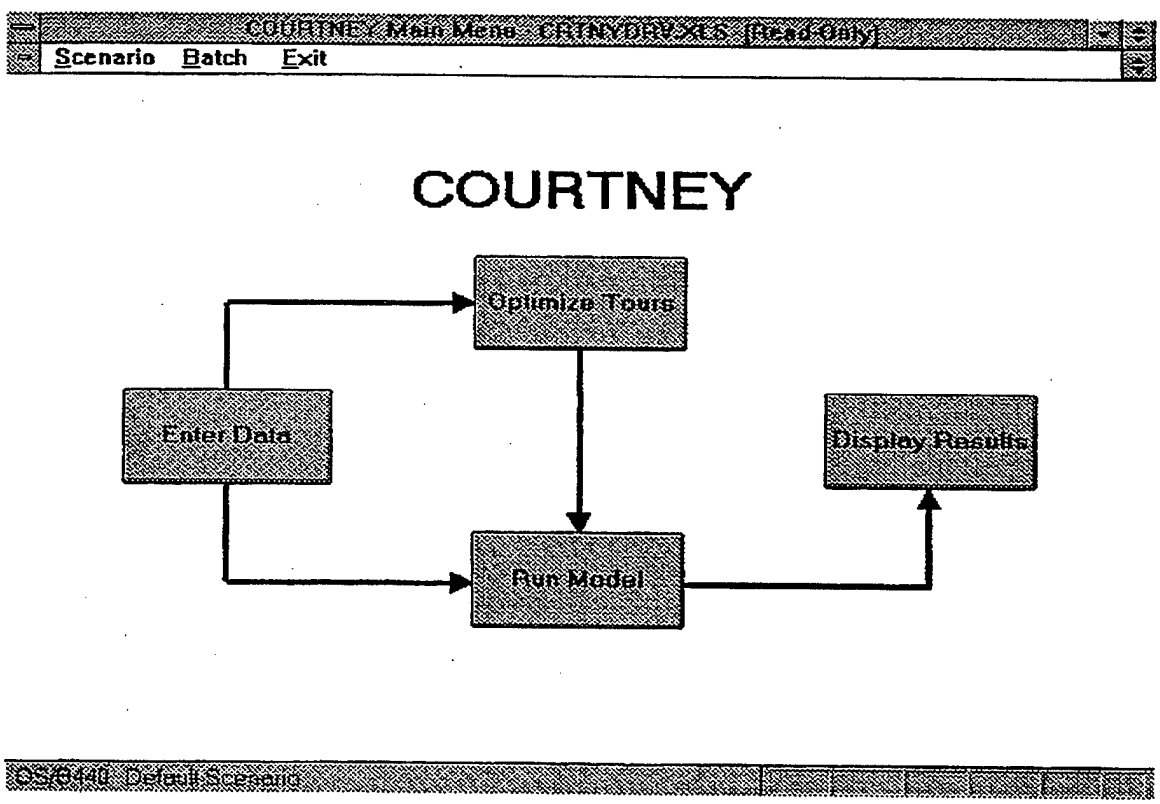
OVERVIEW

COURTNEY is a personnel inventory projection model used by Enlisted Community Managers (ECMs) in Pers-22. It employs a fractional flow simulation of personnel flows, and has the capability of projecting enlisted management community (EMC) inventories seven years into the future by length of service, paygrade, and type duty. It is used primarily to evaluate sea/shore tour length policy, and to determine when adjustments to tour lengths are advisable. It can also be used by ECMs to monitor inventory distribution factors such as first tour and retour percentages by duty type, and the numbers of community members in a non-duty (individuals account) status due to training or other factors. COURTNEY has a user-friendly prescriptive modeling capability which uses a linear optimization to recommend EMC tour lengths by paygrade and type duty subject to constraints supplied by the ECM.

COURTNEY **estimates future Enlisted Management Community (EMC) inventories** by various categories. The categories include: (1) **type duty**--sea, shore, neutral, and individuals account (IA); (2) **length of service**, in years (LOS); and (3) **paygrade** (pg). The Model projects future inventories based on the last known actual inventories, recent historical behavior, current policies, and expected future policies.

The COURTNEY system consists of four modules: (1) **Enter Data** (Frontend), (2) **Optimize Tours**, (3) **Run Model**, and (4) **Display Results** (Backend). Each module can be accessed by mouse-clicking on a button on the COURTNEY **Main Menu** screen:



1. In the **Enter Data** module, you can **review and change inputs** used by the Model to make personnel inventory projections.

2. The Optimize Tours module uses a linear optimization to find the set of sea/shore tour lengths that will result in a model projection that most closely matches sea/shore paygrade targets.

3. The Run Model module uses inputs to project personnel inventories by categories that include type duty (sea, shore, neutral, individuals account), paygrade, and years-of-service (LOS), up to seven years in the future.

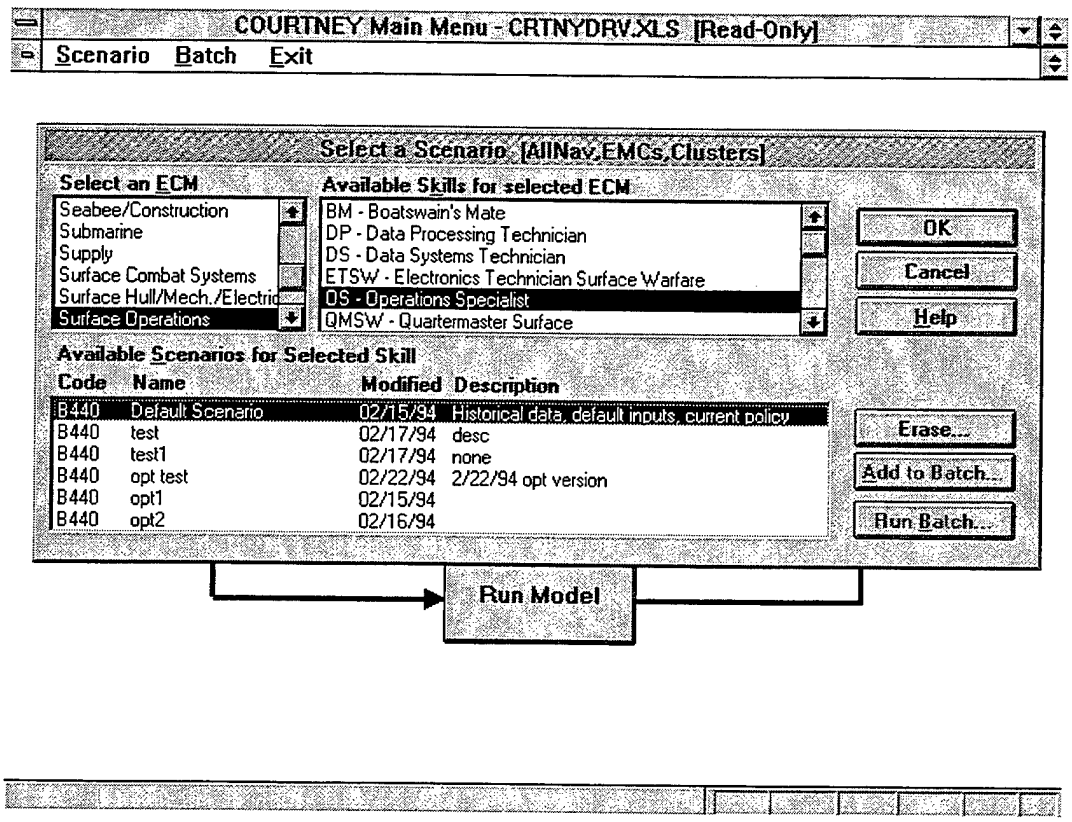
4. In the Display Results module, you can **view and print results** of the Model projections.

A set of inputs for a particular EMC may be saved in the **Enter Data** module as a **scenario**. You may then activate the **Run Model** module to generate projected inventories; **or** you may activate the **Optimize Tours** module to generate optimal tour lengths, save the optimization data as part of the current scenario or a new scenario, and then activate the **Run Model** module to generate projected inventories using the new tour lengths. If you have used the Run Model module to generate projected inventories for a scenario, you may see the results by activating the **Display Results** module. If you change any of the scenario inputs, you must activate the Run Model module again for the scenario to get new results.

COURTNEY is used in Enlisted Community Managers (ECMs) in Pers-22. It employs a stochastic simulation of personnel flows, and has the capability of projecting enlisted management community (EMC) inventories seven years into the future by length of service, paygrade, and type duty. It is used primarily to evaluate sea/shore tour length policy, and to determine when adjustments to tour lengths are advisable. It can also be used by ECMs to monitor inventory distribution factors such as first tour and retour percentages by duty type, and the numbers of community members in a non-duty (individual account) status due to training or other factors. COURTNEY has a user-friendly prescriptive modeling capability, which uses a linear optimization to recommend EMC tour lengths by paygrade and type duty subject to constraints supplied by the ECM.

SCENARIO SELECTION

When you first enter the COURTNEY system, you will see the **"Select a Scenario"** window superimposed on the COURTNEY Main Menu. You need to select a scenario (a given set of model inputs) to work with. There are three components to a scenario selection: (1) the Enlisted Community Manager (ECM); (2) the Skill (usually an Enlisted Management Community (EMC)) associated with the selected ECM; and (3) the set of inputs (scenario) which has been generated for the selected EMC. Each Skill modeled by COURTNEY will have at least one scenario available, the Default Scenario. The Default Scenario contains inputs that reflect historical continuation and rotation patterns, inputs used in COURTNEY the previous year, and current policy inputs.



When you see the "Select a Scenario" window, an ECM, Skill, and Scenario will be selected (highlighted). If this is the Skill and Scenario you want to work with, click on the "OK" button, and this will become the **current scenario**. If you want to select a different Skill and Scenario, first check to see if the correct ECM is selected. If not, click on the desired ECM in the "**Select an ECM**" section of the window. If the desired ECM is not visible, you may browse up and down the ECM list by clicking on the arrows at the right side of the "Select an ECM" section, or by clicking on the button in between the arrows and dragging the button up or down while holding the mouse button down. When the desired ECM is visible, you may then select it by clicking on it.

Then the "**Available Skills for selected ECM**" section will display the skills associated with the selected ECM. You can locate and select the desired Skill in the same manner as for the ECM. After you have selected the desired Skill, the "Available Scenarios for Selected Skill" section will display the scenarios which have been previously generated for the selected Skill, and you may select the desired scenario. Then click on the "OK" button, and the "Select a Scenario" window will disappear, and the selected scenario becomes the **current scenario**, and will be displayed on the **status bar** in the lower left corner of the COURTNEY Main Menu. Whenever you change scenarios, the current scenario will be displayed there.

If you want to **change scenarios** from the COURTNEY Main Menu, click on **"Scenario"** on the menu bar across the top of the screen, then click on "Select..." on the menu that drops down. The "Select a Scenario" window will again appear, and you may select a new scenario as explained above. You may also change scenarios from the "Enter Data" module. This procedure is explained in the "Enter Data" section of the User's Guide.

You may **erase** a selected scenario and associated optimization information and inventory projections by clicking on the "Erase" button in the "Select a Scenario" window. You will be given the chance to confirm that you really do want to erase the scenario.

ENTER DATA

Access the COURTNEY **Enter Data** module (Frontend) from the COURTNEY Main Menu by clicking on the "Enter Data" button. While the module is loading, you will see a message that says, "Setting up COURTNEY system..."; then, while the current scenario is loading, you will see a message that says, "Loading [*Scenario Name*] Scenario for *Skill* ...". If there are newer BA or EPA files available for import, an informational message will appear (see BA/EPA section). Then **View/Change Menu 1** will be displayed.

```
                Skill: DS
          Scenario: Default Scenario
              View/Change Menu 1
------------------------------------------
 A.   BA/EPA
 B.   PST/NSTs
 C.   Career Path Trees
 D.   Non-School Gains
 E.   Accession Factors
 F.   Other Factors (Menu 2)
------------------------------------------
 G.   Save to Current Scenario
 H.   Save to New Scenario
 I.   Print Active Scenario
 J.   Load New Scenario
------------------------------------------
 K.   Exit to COURTNEY Main Menu
 L.   Exit COURTNEY System
```

OVERVIEW OF INPUT SCREENS

PRIMARY INPUTS

BA/EPA—-Import new BA or EPA data.

PST/NSTs—Adjust tour lengths as part of a what-if drill.

Career Path Trees—Review EMC information that will be used by the Model.

Non-School Gains—Enter non-school gain information, if the SKIPPER accession plan is not imported

Accession Factors—Import the SKIPPER accession plan. If the user wants to let COURTNEY estimate accessions, minimum and maximum accession limits can be entered in this screen.

OPTIONAL INPUTS (Other Factors)

The user may review and adjust other Model inputs by accessing the **RETENTION RATES** screen, the **ATTRITION RATES**, and **ADVANCEMENT FACTORS** screen, the **TIME IN IA** screen, or the **ROTATION PATH PROBABILITIES** screen.

THE VIEW/CHANGE MENUS

NOTE: Some of the screens described below consist of two or more sections. When you are in one of the sections, you cannot go to an entry in another section using your mouse without first exiting the section you are in. You can exit the section you are in by pressing the F2 key, or by pressing "TAB" or "ENTER" when the cursor is positioned at the last entry in the section. Anytime below where the F2 key is given as the means of exiting a section or screen, these other methods may be used. If you use the "ESC" key to exit an input screen, the entries made in the section or screen you are exiting may or may not be lost when you exit the screen. Because of this unpredictability, do not use the "ESC" key. The other exit methods will save your changes. If you do not want changes saved, you can select "Quit Without Saving" from View/Change Menu 1.

VIEW/CHANGE MENU 1 (shown on page 5)

BA/EPA

```
                    BA/EPA (Activation Months and Counts)                DS 000
Up/Down:  ↑/↓, PgUp/PgDn                                  Left/Right:  F3/F4
   Help:  F1                          Enter/Exit Browse: Carriage Return/F2
```

```
                Last updated   BA  02/93        EPA  08/92
```

FY	TYPE	B3	E4	E5	E6	E7	E8	E9	TOTAL
92	SEA	6	561	512	311	70	16	2	1478
	SHORE	6	49	197	277	106	18	17	670
	NEUTRAL	0	10	26	20	19	3	1	79
92	TOT EPA	10	935	833	668	243	44	24	2757
	IA EPA	2	296	56	32	6	1	1	394
93	SEA	4	565	487	330	107	21	6	1520
	SHORE	3	78	249	277	113	18	14	752
	NEUTRAL	0	16	34	21	28	4	4	107

```
Press Enter-Browse, F7-import BA, F8-import EPA, F10-Save and Quit
```

The screen consists of **two sections**. You start out in the upper section, where you can import **new BA or EPA files**, or save and exit the screen. The user can follow instructions at the bottom of the screen to import the new BA or EPA data. Alternately, there is a universal BA and EPA loading facility which a system administrator can use to load new BA or EPA files for many users.

You can tell you are in the upper section by locating the blinking cursor. If the cursor is in a gray or black area of the screen, the computer is in the middle of an operation. You should wait until the blinking cursor appears in the upper section or until an entry in the lower section is highlighted, because any keystrokes entered while the computer is "busy" will be saved and executed when the operation is complete.

After a BA or EPA import you are put in the lower section. Also, you can go to the lower section by pressing "ENTER." In the lower section you can edit the BA and EPA numbers. You can scroll down past the seventh projection year. You can't import BA or EPA while in the lower section.

This section displays numbers for BA SEA, BA SHORE, BA NEUTRAL, TOT EPA (Force Structure + IA), and **IA EPA,** by paygrade and FY for the previous FY and ten years in the future. B-3 refers to the bottom three paygrades, E-1-E-3.

The BA SEA + BA SHORE + BA NEUTRAL should be approximately equal to the TOT EPA - IA EPA. They won't be exactly equal because the BA is generated differently from the EPA.

The BA numbers do not affect Model projections, they are used only in the backend displays to compare with Model projections. Also, the IA EPA is used only for display.

The TOT EPA numbers may affect Model projections in two ways:

1. If accessions are not fixed (see ACCESSIONS information), the Model will adjust accessions each year to try to meet the total EPA. Then, if the total EPA is changed, accessions, total inventory, and low paygrade and low LOS inventories will be affected.

2. Each year the Model will attempt to advance personnel to a user-determined percentage of paygrade EPA (see ADVANCEMENT FACTORS). If the EPA number for a specific paygrade is changed, generally the inventory for that paygrade will be affected.

The BA and EPA data are imported separately from files residing on the PERS-22 LAN. These files are updated periodically. The dates for the most recently imported files are displayed. If more current files are available for import from the LAN, the user will be given a message when the scenario is loaded.

To exit the screen, you have to return to the upper section by pressing F2. Then you can exit by pressing F10.

User editing of BA/EPA numbers is not recommended, since these numbers are determined at organizational levels beyond the user's control.

BA/EPA

KEY

F1	Help

In upper section:

F10	Save and quit
F8	Import EPA
F7	Import BA
Enter	Go to lower section

In lower section:

F2	Save and exit to upper section
↑ / ↓	Up / Down
PgUp / PgDn	Page up / Page down
F3 / F4	Left / Right

IMPACTS

	BA changes	IA EPA changes	Tot EPA changes
Total Inventory (accessions, low pg, low LOS):			
Accessions fixed	—	—	—
Accessions not fixed	—	—	♦
Paygrade Distribution	—	—	♦
Sea/Shore/Neutral/IA Dist	—	—	—

♦ = significant impact

DATA SOURCE

EPA	Pers-5
BA	Pers-10

PST/NSTs

```
                          PST/NSTS (in Months)                    DS 000
Next Field:  Tab or Enter                          Previous Field:  ↑
      Help:  F1                                    Save and Exit:  F2
```

		B3	E4	E5	E6	E7	E8	E9
CURRENT TOURS	SEA	48	48	48	36	36	36	36
	SHORE	24	24	36	36	48	48	72

Activation Date 10/93

		B3	E4	E5	E6	E7	E8	E9
REVISED TOURS	SEA	48	48	48	36	36	36	36
	SHORE	24	24	36	36	48	48	72

This screen displays **current and proposed sea and shore tours** by paygrade, and an activation date. When the Model reaches the activation date, it will adjust PRD's in accordance with the proposed tours and the Model's phase-in logic.

The current tours are as of the beginning of the first projection year. These cannot be edited because they are historical data. The user can enter any activation date in the form mm/yy. The user can also enter any proposed tour length of less than 72 months, but a length of less than 24 months is not recommended. The Model will round the tour length to the nearest number of months that is divisible by three. Hit F2 to exit the screen.

Changing tour lengths should not have much of an effect on total inventories by paygrade or LOS, but will affect the sea/shore/neutral/IA distribution of the paygrade inventories.

The effect of changing tour lengths for a particular paygrade may be difficult to predict. For example, a longer B-3 (bottom 3) sea tour probably won't have much effect on B-3 sea, shore, neutral or IA staffing, since most of the bottom 3 people will be E-4s near the end of their first tour. These effects can be explored in the "Optimize Tours" module.

This screen, the **TIME IN IA** screen, and the **ROTATION PATH PROBABILITIES** screen are linked to the **CAREER PATH TREES** screen. The primary **CAREER PATH TREE** must be reconfigured if there is a change to any of the other three screens, and it must use the data from all three screens to do the configuration. Because of this, it may take a long time to load or save changes to any of the four screens. When you exit any of these screens, you will receive messages indicating if changes you have made affect the data in any of the other screens. If this is the case, the data in the other screen is automatically updated to be consistent with the changes.

PST/NSTs

KEY

F1	Help
F2	Save and exit
Tab	Next field
↑	Previous field

IMPACTS

Total Inventory	—
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	♦

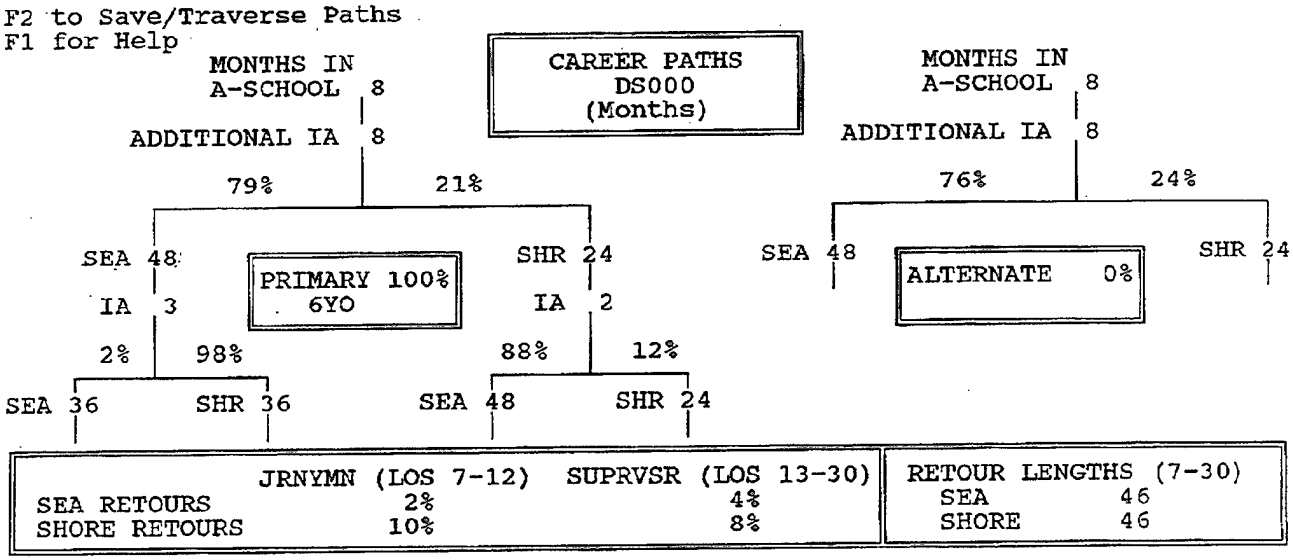
♦ = significant impact

DATA SOURCE

Published tour lengths

Default Activation Date is beginning of second projection year

CAREER PATH TREES



This screen gives a **graphic display of career path information** for typical sailors in your EMC. It is the most convenient place to review the general accuracy of EMC information used by the Model. Generally, the career path information will have more effect on the sea/shore/neutral/IA distribution of EMC inventory than the total inventory.

The screen consists of **three sections**. You start out in the left section, the **Primary Career Path**. You can find out which section you are in by locating the blinking cursor. If the cursor is blinking near the bottom left of the screen, the computer is in the middle of an operation. You should wait until the cursor is in one of the three sections, because any keystrokes entered while the computer is "busy" will be saved and executed when the operation is complete.

You can use the TAB key, ENTER key, or mouse to move around within the section. (Shift)TAB allows you to go backward. Information can be entered in this section in the following order:

1. **Percentage of EMC in primary path**. Less than 50 percent is allowed, but not recommended.

2. **Obligor type**. You cannot type in this block, but you can toggle between the 4YO, 6YO, and NUC obligor types by pressing the space bar. You should use the 4YO obligor type unless your EMC has automatic advancement to E-4.

3. **Months in "A" School**. This is expected to be the number of months after completion of boot camp (boot camp is presumed to be three months) until a person becomes a rated member of the EMC. Values from 1 to 12 are allowed.

4. **Additional IA**. This is expected to be the number of months after becoming a rated member of the EMC until a person is serving on sea or shore duty. Values from 1 to 18 are allowed.

5. **Percentage of First Tour people going to Sea Duty**. This is derived from recent data of people in low LOS status serving on sea and shore duty. You cannot access the shore duty portion, because it is determined entirely by the sea percentage. It will be updated when you exit the Primary Path section.

6. **Length of First Sea Tour**. This should be the same as the B-3 Sea Tour from the PST/NSTs screen. For Nuclear EMCs it should be the same as the E-4 Sea Tour.

7. **Length of First Shore Tour**. This should be the same as the B-3 Shore Tour from the **PST/NSTs** screen. For Nuclear EMCs it should be the same as the E-4 Shore Tour.

8. **Time in IA after First Sea Tour**. This value should be the same as the value for the corresponding LOS in the Time in IA screen. To compute the LOS, first find the months-of-service by adding 3 months (for boot camp) plus the months in "A" school plus the additional IA time plus the first sea tour. Divide the months-of-service by 12 and round up to get the LOS. Example: 63 months-of-service. 63/12 = 5.25 Rounding up gives LOS 6.

9. **Time in IA after the First Shore Tour**. This is similar to (8) above.

10. **Percentage of First Tour Sea Duty people who have a Sea Retour**. This is the percentage of people doing back-to-back sea tours in the LOS corresponding to the end of the previous IA time. The LOS is calculated similarly as in (8) above, only you also add the IA time in finding the months-of-service. The value should be the same as the one found for the corresponding LOS in the Rotation Path Probabilities screen. Example: Suppose you add 3 plus the months in "A" school plus the additional IA time plus the first sea tour and get 63 months as in the example in 8) above. If the IA time after the sea tour is 3 months, 3 + 63 = 66. 66/12 = 5.5 Rounding up gives LOS 6.

11. **Percentage of First Tour Shore Duty people who alternate to Sea Duty**. This is similar to (10).

12. **First Sea Retour Length**. Retour lengths do not correspond to Tour Lengths on the **PST/NSTs** screen. There is a presumption that the second of back-to-back tours may not be full length. The retour value is calculated based on historical behavior from the previous year. The value is calculated individually for LOS 1-6, and as a group for LOS 7-30.

The rest of the entries follow a similar pattern. When you are finished with the Primary Section, you have to go to the Alternate Path Section on the right side of the screen. Hit F2 to do this. **The Alternate Path Section** has an abbreviated path tree that is similar to the Primary tree. The differences are:

You can't enter the Percentage of the EMC in the Alternate Path. This is determined by the percentage entered on the Primary side. If the percentage in the Primary Path is 100 percent, values entered in the Alternate Path section will have no effect.

Values entered in the Alternate Path Section are not linked to values in the PST/NSTs screen, the Rotation Path Probabilities screen, or the Time in IA screen. In this sense, people in the Alternate Path do not follow the general career path in effect for the EMC. Once they finish the first tour, they are then subject to the general path rules.

When you are finished with the Alternate Section, you have to go to the **Retour Section** at the bottom of the screen. Hit F2 to do this. Here you can review **retour percentages** from the **Rotation Path Probabilities** screen for the LOS 7-12 and 13-30 groups. This will determine the percentage of people in each LOS group that the Model gives back-to-back tours (and, indirectly, the percentage the Model gives alternating tours). If you see asterisks in one of these entries, it means that all of the values for the LOS group in the Rotation Path Probabilities screen are not the same.

The Retours for people in LOS 1-6 are taken care of in the Primary Path section of the screen. The **length of all retours** not handled in the Primary Path section are shown at the far right side of the screen. The default values for retour percentages and lengths are calculated based on behavior from the previous year.

When you are finished with the Retour section, hit F2, and you will be asked at the bottom of the screen if you want to exit the screen. If you do, you must press "y" on your keyboard. If you press "n" or F2 or "Enter," you will be thrown back to the Primary Path section on the left side of the screen. If this happens, hit F2 three times to cycle back through to the exit prompt. Again, if you hit F2 too many times, you will cycle past the exit prompt. If this happens, you need to slow down and carefully hit F2 once each time as you watch the cursor cycle from the left side of the screen, to the right side, to the bottom, and finally to the exit prompt. Then press "y."

As you exit, you will be advised if changes you made in the Career Path Screen have resulted in changes to the PST/NSTs screen, the Time in IA screen, or the Rotation Path Probabilities screen.

CAREER PATH TREES

KEY

F1	Help
F2	Save and move to next section
Tab	Next field
(shift)Tab	Previous field
To exit:	Press "y" after leaving third section

IMPACTS

Total Inventory	—
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	♦

♦ = significant impact

DATA SOURCE

Percentage in Primary/Alternate path, Obligor type, Months in "A" school, Additional IA, and all Alternate path info:	ECM info from previous year
Percentage going to a particular type duty:	Previous year's actual percentage b LOS, averaged for LOS 7-12 and LOS 13-30
Length of a regular tour:	Published PST/NST
Length of a retour:	Actual tour length of people who rotated off a retour in the previous year by LOS at beginning of tour, averaged for LOS 7-30

NON-SCHOOL GAINS

```
F2 to Save/Traverse Paths
F1 for Help

                    NON-SCHOOL
                      GAINS
                      DS000

                   Minimum
         GENDET Training    21  Months
                    Time

                 Annual Non-School Gains

FY93     FY94     FY95     FY96     FY97     FY98     FY99
====     ====     ====     ====     ====     ====     ====
   0        0        0        0        0        0        0

                 Exit Screen? (Y/N): N
```

This screen is divided into **two sections**. In the top section you can enter the **minimum number of months of service required to be rated as a gendet** in your EMC. This is used when the Model distributes non-school gains for the year corresponding to the month entered. Gains coming in to the EMC in that year will be distributed among months of service starting with the month entered. For example, if 21 is entered, non-school gains to LOS 2 will be distributed among months-of-service 21-24. 21 is the default value for this entry. For an EMC that sometimes has non-school gains, but never has gendets, you should enter 0 here.

Hit F2 to move to the bottom section. Here you can enter the total **number of non-school gains** you expect to access to your EMC by FY. This number should include gendets and transfers from other EMC's. The values entered here will affect the total EMC inventory projections, particularly in lower LOS and paygrade categories. These numbers can be **imported from SKIPPER** by using the SKIPPER import option in the Accession Factors screen. Hit F2 again and you will be prompted to press "y" to exit the screen.

NON-SCHOOL GAINS

KEY

F1	Help
F2	Save and move to next section
Tab	Next field
(shift)Tab	Previous field
To exit:	Press "y" after leaving second section

IMPACTS

Total Inventory (low pg/LOS)	♦
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	—

♦ = significant impact

DATA SOURCE

Minimum training time:	ECM info from previous year
Non-school gains:	user must input or import from SKIPPER

ACCESSION FACTORS

```
                          ACCESSION FACTORS                          DS 000
Next Field:  Tab or Enter                          Previous Field:  ↑
Help: F1        Save and Exit: F2        Import SKIPPER Accessions: F9
```

Last Year's A-School Input: 161

Annual A-School Limits

	FY93	FY94	FY95	FY96	FY97	FY98	FY99
Minimum	220	295	370	320	320	320	320
Maximum	220	295	370	320	320	320	320
Target EPA %	100	100	100	100	100	100	100

A-School Attrition Rates

	FY92	FY93-99
4YO	0%	0%
6YO	7%	7%

The values entered here will affect the total EMC inventory projections, particularly in lower LOS and paygrade categories. The first entry on this screen is the **number of people accessed into "A" school in the year before the Model starts**. The Model will use this number, the "A" school lengths, the "A" school attrition rates, and the percentage of people going into the primary and alternate career paths to calculate the number of people who are already in "A" school that will be accessed into the EMC during the first year of the Model run.

You may **import accession information from SKIPPER** by pressing F9. If you do this, all entries on the Accession Factors screen, and the annual non-school gains on the **Non-School Gains** screen will be provided with data from your SKIPPER accession plan.

For the **annual accessions**, you have a choice of fixing the annual "A" school accessions by entering the same number for the minimum and maximum, or letting the Model estimate the number of accessions within a given range required to meet the percentage of EPA you specify. When you import accession data from SKIPPER, the accessions are fixed. When the accessions are fixed, the number entered for percentage of EPA has no effect.

The "A" school **attrition rates** are filled by the SKIPPER data import, or you may enter them individually. If there is no 6YO career path, the values entered under 6YO have no effect. The same applies for the 4YO values. To exit hit F2.

ACCESSION FACTORS

KEY

F1	Help
F2	Save and exit
Tab	Next field
↑	Previous field
F9	Import SKIPPER Accessions

IMPACTS

Total Inventory (low pg/LOS)	♦
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	—

♦ = significant impact

DATA SOURCE

Last Year's "A" school Input, Annual "A" school limits:	user must input or import from SKIPPER
Target EPA%	default is 100%
"A" school Attrition Rates:	ECM data from previous year or SKIPPER import

OTHER FACTORS

This takes you to View/Change Menu 2.

Other selections from View/Change Menu 1 are described after the discussion of View/Change Menu 2.

VIEW/CHANGE MENU 2

```
                Skill: DS
        Scenario: Default Scenario
            View/Change Menu 2
=================================================
  A.  Retention Rates
  B.  Attrition Rates
  C.  Advancement Factors
  D.  Time in IA
  E.  Rotation Path Probabilities
  Q.  Return to View/Change Menu 1
```

NOTE: Except for the Advancement Factors screen, data found on the screens in Menu 2 is based on recent historical behavior, and generally should not be changed.

RETENTION RATES

```
                    RETENT. RATES-PERSONNEL AT EAOS (0-100%)          DS 000
Up, Down:  PgUp,PgDn, ↑,↓                          Left, Right:  F3, F4
    Help:  F1                                      Save and Exit:  F2
```

LOS	B3	E4	E5	E6	E7	E8	E9
6	30	24	29	69	70	70	70
7	12	88	61	45	70	70	70
8	30	19	63	81	70	70	70
9	30	22	51	46	70	70	70
10	30	30	50	42	91	70	70
11	30	30	82	25	70	70	70
12	30	30	62	77	70	70	70
13	30	30	88	91	70	70	70
14	30	30	30	93	97	70	70
15	63	63	63	63	63	63	63

The retention rate is the percentage of people who were at EAOS during the year that remained in the EMC at the end of the year. The historical retention rates from the previous year are given by years-of-service (LOS) and paygrade. For example, suppose the data was based on FY92. Suppose that 100 of the E-6's who were in their 12th year of service at the beginning of FY92 reached their EAOS during FY92, and that 77 of them remained in the EMC at the end of FY92. The E-6, LOS 12 retention rate would be 77 percent.

The Model will use recent historical data and projected inventories to determine the number of people at EAOS by LOS and paygrade for each projection year, and apply the appropriate retention rate to these (projected) people. The retention rates will affect the overall inventory projections for the LOS involved, and usually for the lowest paygrade (since people are advanced to fill vacancies).

In cases where no data was available, values of 70 are put in for high paygrade/low LOS, and values of 30 are put in for low paygrade/high LOS. In cases where the available data was small, there may be values of 0 or 100. A limited smoothing process is applied to provide some continuity from one cell to another. For LOS 15-20 the rates are not broken down by paygrade, except for some EMCs that advance into different EMCs at high paygrades.

For 100 percent 6YO EMCs, the display starts with LOS 6. This is because it is presumed that few people will be at EAOS in LOS 1-5. But often people do reenlist "early" in LOS 2-5, so a special display for LOS 2-5 is given after LOS 29. This display gives retention rates as a percentage of the entire LOS (not restricted to those at EAOS). These rates are currently displayed for information purposes only—they are not used by the Model.

Hit F2 to exit.

RETENTION RATES

KEY

F1	Help
F2	Save and exit
↑ / ↓	Up / Down
PgUp / PgDn	Page up / Page down
F3 / F4	Left / Right

IMPACTS

Total Inventory (low pg, applicable LOS)	♦
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	—

♦ = significant impact

DATA SOURCE

Actual retention from previous year by LOS and pg

ATTRITION RATES

```
                ATTRIT. RATES-PERSONNEL NOT AT EAOS (0-100%)        DS 000
Up, Down:  PgUp,PgDn, ↑,↓                          Left, Right:  F3, F4
    Help:  F1                                      Save and Exit:  F2
```

LOS	B3	E4	E5	E6	E7	E8	E9
6	70	8	7	1	5	5	5
7	85	10	6	2	5	5	5
8	85	3	5	1	5	5	5
9	70	16	7	2	5	5	5
10	70	43	10	15	5	5	5
11	70	43	16	7	3	5	5
12	70	70	10	5	1	5	5
13	70	42	12	7	1	5	5
14	70	70	8	8	9	3	5
15	39	39	4	4	4	4	4

The attrition rate is the percentage of people who were not at EAOS during the year who were no longer in the EMC at the end of the year. The historical attrition rates from the previous year are given by years-of-service (LOS) and paygrade. For example, suppose the data was based on FY92. Suppose that 100 of the E-6's who were in their 12th year of service at the beginning of FY92 did not reach their EAOS during FY92, and that 5 of them were no longer in the EMC at the end of FY92. The E-6, LOS 12 attrition rate would be 5 percent.

The Model will use recent historical data and projected inventories to determine the number of people not at EAOS by LOS and paygrade for each projection year, and apply the appropriate attrition rate to these (projected) people. The attrition rates will affect the overall inventory projections for the LOS involved, and usually for the lowest paygrade (since people are advanced to fill vacancies).

In cases where no data was available, values of 5 are put in for high paygrade/low LOS, and values of 70 are put in for low paygrades/high LOS. In cases where the available data was small, there may be values of 0 or 100. A limited smoothing process is applied to provide some continuity from one cell to another.

For 100 percent 6YO EMCs, the display for LOS 1-5 can be found after LOS 29 (see discussion under Retention Rates). For these EMCs, all losses in LOS 1-5 are considered to be attrition.

Hit F2 to exit.

ATTRITION RATES

KEY

F1	Help
F2	Save and exit
↑ / ↓	Up / Down
PgUp / PgDn	Page up / Page down
F3 / F4	Left / Right

IMPACTS

Total Inventory (low pg, applicable LOS)	♦
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	—

♦ = significant impact

DATA SOURCE

Actual attrition from previous year by LOS and pg

ADVANCEMENT FACTORS

```
                    ADVANCEMENT FACTORS                          DS 000
                 Advance to Fill Percent of EPA
Help: F1        Save/Quit: F10          Save/Change windows: F2
```

Advancement Percents

FY	E4	E5	E6	E7	E8	E9
FY93	100	100	100	100	100	100
FY94	100	100	100	100	100	100
FY95	100	100	100	100	100	100
FY96	100	100	100	100	100	100

Minimum Requirement	B3	E4	E5	E6	E7	E8	E9
Years-of-Service		2	3	7	11	16	19
Years-in-Grade		1	1	3	3	3	3
Maximum Allowable Years-of-Service	6	10	20	20	24	26	30

This screen is in **two sections**. In the top section you can set the **percentage of EPA by paygrade for advancements**. This will affect the way the inventory is distributed by paygrade, particularly at the paygrade where the change is made, and at the lowest paygrade (because people are advanced to fill vacancies). It will not have much effect on the overall total inventory.

The default values are 100 percent, which causes the Model to advance to meet EPA. You may change these percentages if you want to limit advancements or if you want to force advancements although EPA is filled. Values greater than 100 percent are allowed. Hit F2 to move to the bottom section.

In the bottom section you can set **minimum years-of-service and time-in-grade for advancement**. This also will affect the way the inventory is distributed by paygrade, particularly at the paygrade where the change is made, and at the lowest paygrade (because people are advanced to fill vacancies), but will not have much effect on the overall total inventory. You can also set the **high-year tenure limits**. Since these limits will cause people to be removed from the EMC if not advanced, they will affect total inventory, and usually the inventory for the lowest paygrade (since people are advanced to fill vacancies). The default values are determined by current general Navy policy. If you hit F2 here, you will cycle back to the top section.

From either section you can exit the screen by pressing F10.

ADVANCEMENT FACTORS

KEY

F1	Help
F2	Save and toggle to other section
F10	Save and quit
Tab	Next entry
(shift)Tab	Previous entry

IMPACTS

	Adv Percents	Min TIS/TIG	Max years (HYT)
Total Inventory (low pg)	—	—	♦
Paygrade Distribution	♦	♦	—
Sea/Shore/Neutral/IA Dist	—	—	—

♦ = significant impact

DATA SOURCE

Advancement Percents	Default is 100%
Min/Max years	Published

TIME IN IA

```
                MONTHS SPENT IN IA AFTER SEA/SHORE DUTY                DS
Up, Down:  PgUp,PgDn, ↑,↓                        Left, Right:  F3, F4
    Help:  F1                                    Save and Exit:  F2
```

LOS	SEA	SHORE
1	1	8
2	1	8
3	1	1
4	1	2
5	1	2
6	2	5
7	2	4
8	3	4
9	2	5
10	3	4

This screen gives the **average time in the Individuals Account** for people rotating between sea/shore assignments. There is a value for each year-of-service (LOS) and type duty at the time of rotation. The value for LOS 1 and LOS 2 from shore duty should be equal to the additional IA time after "A" school from the **Career Path** screen.

Changing IA times will affect the sea/shore/neutral/IA distribution of the paygrade inventories. It should not have much of an effect on total inventories by paygrade or LOS. Values from 1 to 18 are allowed.

The default IA times were derived by taking the average number of months between sea/shore assignments in the previous year. For LOS 1-6, this average was computed separately for each LOS. The averages for LOS 7-12 and 13-30 were computed as groups and then spread out over the LOS group. For example, if the average for LOS 7-12 was 1.5 months, LOS 7,9, and 11 could get a value of 1, and LOS 10 and 12 could get a value of 2.

If the values for LOS 2 from sea duty seem strange, it is because there are few people rotating off of sea duty in their second year, so there is little data to base the values on. Since the Model won't be rotating many people in LOS 2, it shouldn't make much difference what values are entered there.

Hit F2 to exit.

TIME IN IA

KEY

F1	Help
F2	Save and exit
↑ / ↓	Up / Down
PgUp / PgDn	Page up / Page down
F3 / F4	Left / Right

IMPACTS

Total Inventory	—
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	♦

♦ = significant **impact**

DATA SOURCE

Actual average months between duty assignments in the previous year by LOS, averaged for LOS 7-12 and LOS 13-30, then distributed over the LOS group

LOS 1 and 2 value from shore is the average actual months between finishing "A" school and reporting to first duty assignment

ROTATION PATH PROBABILITIES

```
                    ROTATION PATH PROBABILITIES (0-100%)            DS 000
Up, Down:  PgUp,PgDn, ↑,↓                          Left, Right:  F3, F4
    Help:  F1                                      Save and Exit:  F2
```

LOS	SEA_TO_SEA	SEA_TO_SHR	SHR_TO_SEA	SHR_TO_SHR
1	100	0	79	21
2	100	0	79	21
3	100	0	100	0
4	100	0	88	12
5	0	100	87	13
6	2	98	100	0
7	2	98	90	10
8	2	98	90	10
9	2	98	90	10
10	2	98	90	10

This screen displays **sea and shore retour and alternate tour percentages** by years-of-service (LOS). Since each retour/alternate tour pair must add up to 100 percent, you can only change the sea-to-sea and the shore-to-sea values. The corresponding sea-to-shore and shore-to-shore values are changed automatically. The default values are derived from actual behavior from the previous year, individually for LOS 1-6, and as a group for LOS 7-12 and LOS 13-30.

Changing rotation path probabilities will affect the sea/shore/neutral/IA distribution of the paygrade inventories. It should not have much of an effect on total inventories by paygrade or LOS.

Because few rotations from sea duty generally occur in the low LOS categories, historical data does not give a reliable default value there. For this reason, sea retours are set to 100 percent for LOS 1-3. Depending on the length of the first sea tour, sea retours for LOS 4 may be set to 100 percent or 50 percent.

The shore-to-sea percentage for LOS 1 and 2 will be the percentage of people who go to sea from A-school.

Hit F2 to exit.

ROTATION PATH PROBABILITIES

KEY

F1	Help
F2	Save and exit
↑ / ↓	Up / Down
PgUp / PgDn	Page up / Page down
F3 / F4	Left / Right

IMPACTS

Total Inventory	—
Paygrade Distribution	—
Sea/Shore/Neutral/IA Dist	♦

♦ = significant impact

DATA SOURCE

Previous year's actual retour/non-retour percentages by LOS, averaged for LOS 7-12 and LOS 13-30

LOS 1-3 sea retour values are defaulted to 100 percent.

LOS 4 sea retours are defaulted to 100 percent if the first sea tour is long, otherwise this value is defaulted to 50 percent

The shore-to-sea percentage for LOS 1 and 2 is the previous year's percentage of people who went to sea from "A" school

RETURN TO VIEW/CHANGE MENU 1

Self explanatory.

SAVE TO CURRENT SCENARIO

This will **overwrite** the scenario you originally loaded with the changes you have made during the current session. The **original scenario will be lost, including optimization data and inventory projections (output)**. There is generally a lockout in effect that will not permit you to do this to the Default Scenario. First, you will be given a chance to change your mind, then a chance to change the scenario description. Just press "ENTER" if you want to keep the same description. Otherwise, type in a new description and press "ENTER." Please wait patiently for the "Hit any key to continue" message. Keystrokes entered while waiting will be executed when the operation is complete.

SAVE TO NEW SCENARIO

This option allows you to save the new scenario you have created, as well as preserving the scenario you started with. You will be prompted to give the new scenario a name and a description. After typing in the name, press "ENTER." Do the same after typing in the description. Then press "ENTER" again to proceed with the save. While the save is taking place, please wait patiently for the "Hit any key to continue" message. Keystrokes entered while waiting will be executed when the operation is complete.

PRINT ACTIVE SCENARIO

This will produce a seven page printout containing all of the information in all of the input screens. **It is useful to have this hard copy information for analyzing inventory projections**. Please wait until the print operation is completely finished before entering any new keystrokes.

LOAD NEW SCENARIO

This will bring up the **Choice Menu**, which allows you to select a different EMC/ scenario for viewing/changing inputs. This menu is described in the following section.

EXIT TO COURTNEY MAIN MENU

This will return you to the COURTNEY Main Menu. If you have not saved any changes, the scenario you originally loaded will remain unchanged.

EXIT COURTNEY SYSTEM

This will return you to the **Windows environment. If you have not saved any changes, the scenario you originally loaded will remain unchanged**.

CHOICE MENU

```
Choice Menu
A.  Choose Community to Model
B.  Choose ECM
C.  Return to Edit Menu
```

CHOOSE COMMUNITY TO MODEL

Use this to select another EMC and scenario to view/change inputs for.

Select **"Choose Community to Model"** by double-clicking on it with your mouse, or by highlighting it and pressing "ENTER," or by pressing "a" on your keyboard. If you press "a," do not follow it by pressing "ENTER." If you do, the "ENTER" will be executed immediately upon entry to the next screen.

You will next see a list of available communities for a selected ECM (if you want to change the selected ECM, press "Esc" to return to the Main Menu, and then select "Choose ECM"). Select the community you want to model using the mouse double-clicking or the highlight and "ENTER" technique. Then you will see a **list of available scenarios** for the community you selected. Select the scenario you want to load. Be patient while the **"Loading scenario..."** message appears.

The loading operation will be done when the "Hit any key to continue" message appears. Any keystrokes entered during the loading operation will be saved and executed when the operation is finished. At this time you may get messages advising that newer BA or EPA data is available (see BA/EPA screen). The next screen will be **View/Change Menu 1**.

CHOOSE ECM

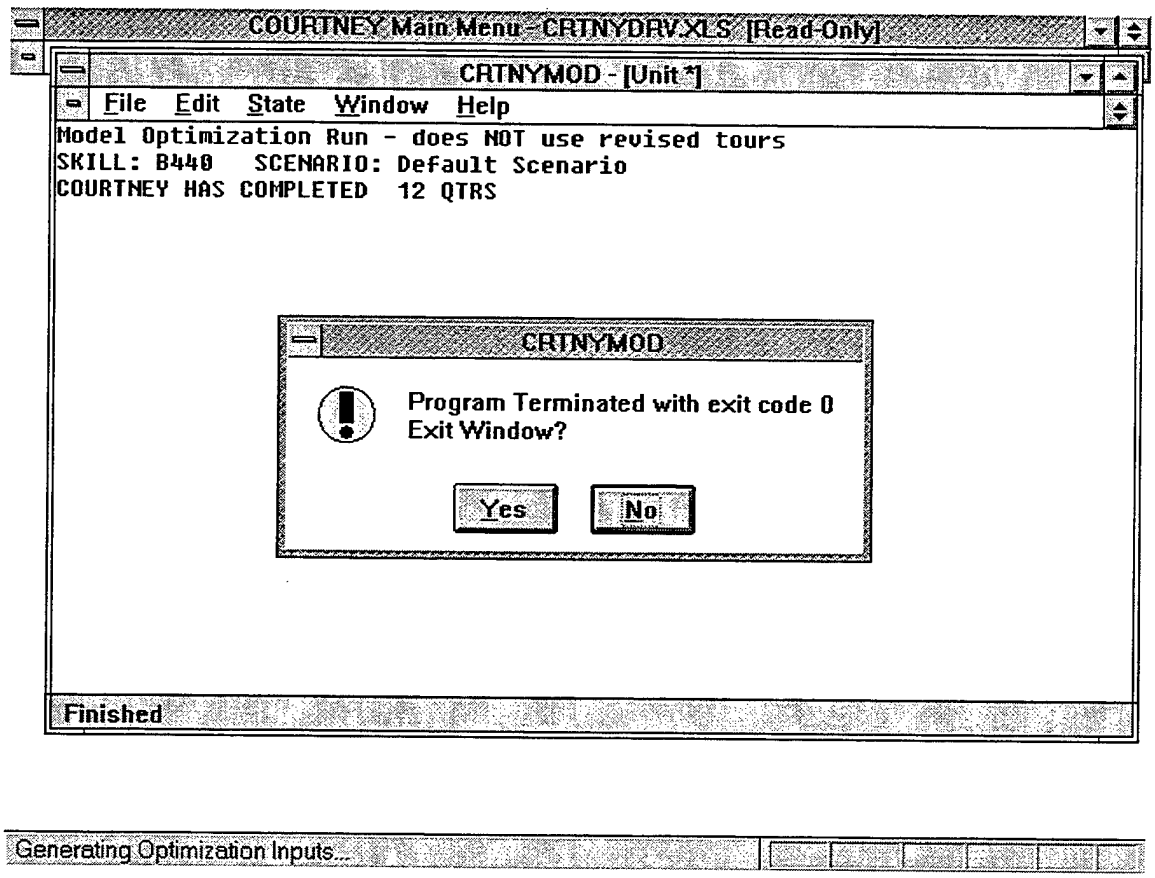
The list of EMC's that comes up when you select "Choose Community to Model" depends on which ECM is selected for the system. This is where you change the selected ECM.

RETURN TO EDIT MENU

This choice will return you to View/Change Menu 1. If you had already entered the "Choose Community to Model" screen, and then backed out, this choice is no longer active. Then you must go back into the "Choose Community to Model" screen and choose a Skill and Scenario to return to View/Change Menu 1.

OPTIMIZE TOURS

When you select "Optimize Tours" from the Main Menu, the system will check to see if inputs for the optimization module have previously been generated for the current scenario. If so, the Optimization module will be loaded immediately. If not, you will be prompted for the number of years you want the model to project. A three year projection is necessary to generate inputs required for the Optimization module. Any previous projection results for the current scenario will be deleted. If you select a longer projection, it will have no additional effect on the Optimization module, but the results of the projection will be available for viewing in the "Display Results" module of the system. If the current scenario has revised tours that are different from the current tours, these revised tours will **not** be implemented when the model is run in Optimization mode. When the model is finished with the projection, the following screen will be displayed:



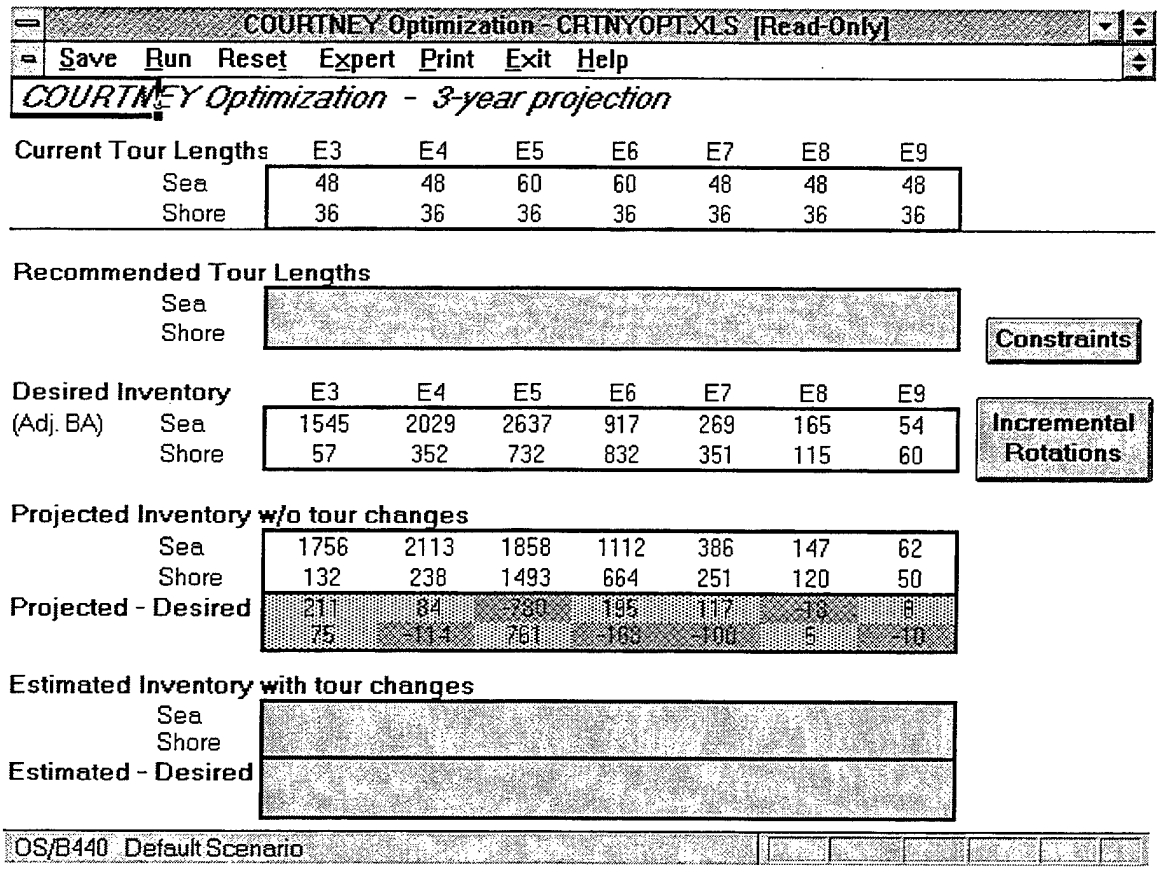
The "Program Terminated with exit code 0" message means that the model run completed without errors. Click on the "Yes" button to continue. (Unfortunately, the default choice here is "No," so if you happen to press the "Enter" key the window will be left open. You must then close it by double-clicking on the small bar in the upper left corner of the "CRTNYMOD" window.) A window informing you that "Model Execution has completed" will pop up. Click on the "OK" button to continue.

The purpose of the three year optimization projection is to generate inputs for the Optimization Module. The Model projects what the sea/shore staffing will be in three years if tours are unchanged, and it also estimates the incremental effect that a three month tour change implemented for a particular paygrade and type duty at the beginning of the second year will have on all of the paygrades and types of duty by the end of the three year period. Also, the Model generates default tour constraints based on the current tours.

You can get context-sensitive help by double-clicking on green text.

Main Screen

Next, the COURTNEY Optimization module Main screen appears. Initially it displays the following:



Current Tour Lengths

These are the actual tours in effect at the beginning of the projection period. You may not edit them. The Optimization uses these tours to project what the sea/shore staffing would be in three years if tours remained unchanged.

Recommended Tour Lengths

Initially this is a blank (gray) area. After the Optimization is run, it will be filled in with the tour lengths which the Optimization has determined will result in the best sea/shore staffing, according to conditions specified by the user. If you double-click on one of these tours, you will receive context-sensitive help, which explains the constraints (if any) acting to limit the tour length.

Desired Inventory (Adjusted BA at the end of the three year projection)

The Billets Authorized (BA) at the end of the three year projection is represented here by converting Neutral billets to sea or shore billets (type 5 billets are converted to sea, type 6 are converted to shore), then proportionally adjusting each value so that the total BA for each paygrade is equal to the total distributable (excluding IA) paygrade EPA.

Projected Inventory without tour changes

These are the sea and shore inventories projected by the COURTNEY Model at the end of three years. Neutral inventories have not been broken out from the sea and shore projections yet (they are broken out in the "Display Results" module).

Projected - Desired

The difference between Projected and Desired Inventory (when overstaffing is projected, the number is shaded blue, and when understaffing is projected the number is shaded salmon).

Estimated Inventory with tour changes

Initially this is a blank (gray) area. After the Optimization is run, it will be filled in with the sea and shore inventories estimated by the Optimization to result from implementing the recommended tour changes. This is based on the **change** in the projected inventories that is expected to occur as a result of the change in the tour lengths. It is calculated using the Incremental Rotations. It will differ somewhat from the projected inventories obtained by running the Model using the recommended tours because the Model will use the **actual** number of people rotating while the Optimization uses the **average** number of people rotating (also, when you look at the Model results, the Neutral projections will be broken out from the sea and shore projections).

Estimated - Desired

Initially this is a blank (gray) area. After the Optimization is run, it will be filled in with the difference between Estimated and Desired Inventory (when overstaffing is projected, the number is shaded blue, and when understaffing is projected the number is shaded salmon). Double-clicking on one of these values will give a context-sensitive explanation of which tours (if any) affect the value.

None of the values on the Main Screen may be changed by the user.

Running the Optimization

If you click on the "Run" item from the menu bar along the top of the screen, and then click on "Run Optimization" from the menu that drops down, the module will perform a tour length optimization. This will take about 45 seconds. When the optimization is done, the results will pop into the blank areas in the Main optimization screen. Recommended Tours that differ from the current tours will be shaded yellow, and so will the new Estimated Inventory when it differs from the originally projected inventory. When overstaffing is estimated, the box is shaded blue, and when understaffing is estimated the box is shaded salmon. If you double-click on any of the Recommended Tours, you will be provided with a context-sensitive explanation of constraints that prevent the tour from increasing or decreasing.

COURTNEY Optimization - CRTNYOPT.XLS [Read-Only]

Save Run Reset Expert Print Exit Help

COURTNEY Optimization - 3-year projection

Current Tour Lengths	E3	E4	E5	E6	E7	E8	E9
Sea	48	48	60	60	48	48	48
Shore	36	36	36	36	36	36	36

Recommended Tour Lengths							
Sea	48	57	60	48	57	48	36
Shore	36	24	24	36	36	36	48

Constraints

Desired Inventory (Adj. BA)	E3	E4	E5	E6	E7	E8	E9
Sea	1545	2029	2637	917	269	165	54
Shore	57	352	732	832	351	115	60

Incremental Rotations

Projected Inventory w/o tour changes							
Sea	1756	2113	1858	1112	386	147	62
Shore	132	238	1493	664	251	120	50
Projected - Desired	211	84	780	195	117	-18	8
	75	-114	761	-168	-100	5	-10

Estimated Inventory with tour changes							
Sea	1756	2134	2335	1112	337	157	60
Shore	132	217	1016	664	300	110	52
Estimated - Desired	211	105	-302	195	68	-8	6
	75	-135	284	-168	-52	-5	-9

OS/B440 Default Scenario

If you make changes to the optimization inputs after running the optimization, you may select "Run Optimization" again, and the results of the new optimization run will replace the old results.

Incremental Rotations

You may view the incremental effect that a three month tour change implemented for a particular paygrade and type duty at the beginning of the second year will have on all of the paygrades and types of duty by the end of the three year period by clicking on the Incremental Rotations button.

COURTNEY Optimization - CRTNYOPT.XLS [Read-Only]

Save Run Reset Expert Print Exit Help

COURTNEY Optimization - 3-year projection

Current Tour Lengths	E3	E4	E5	E6	E7	E8	E9
Sea	48	48	60	60	48	48	48
Shore	36	36	36	36	36	36	36

Incremental Rotation Changes

Unit change in personnel due to a unit change (consisting of 3 months) in Tour Length.

Main

Constraints

Tour Change PG		Affected PG E3	E4	E5	E6	E7	E8	E9
Sea	E3	0	12.8	64.6	0.5	0	0	0
	E4	0	1.6	12.1	0.9	0	0	0
	E5	0	0	15	17.5	1.5	0	0
	E6	0	0	0	28.1	15.7	1.7	0
	E7	0	0	0	0	3.4	5.7	0.6
	E8	0	0	0	0	0	0.5	1.7
	E9	0	0	0	0	0	0	0.3
Shore	E3	0	7.6	3.6	0.1	0	0	0
	E4	0	4.1	17.8	1.5	0	0	0
	E5	0	0	92.4	26	1	0	0
	E6	0	0	0	23	10.2	1.5	0
	E7	0	0	0	0	3.7	5.6	0.6
	E8	0	0	0	0	0	1.1	2.3
	E9	0	0	0	0	0	0	0.6

OS/B440 Default Scenario

A tour change for a type duty and paygrade listed along the left side of the table has effects at paygrades listed across the top of the table. The effect given is the number of people estimated to be affected by a three month tour length change. If a tour for a particular type of duty is increased, the number is added to the projection for that type of duty and subtracted from the projection for the opposite type of duty. If a tour for a particular type of duty is decreased, the number is subtracted from the projection for that type of duty and added to the projection for the opposite type of duty.

For example, suppose the E-4 sea tour were increased by 6 months (2 increments). Refer to the table to see that the incremental values for an E-4 sea tour change are 1.6 for E-4, 12.1 for E-5, 0.9 for E-6, and 0 for all other paygrades. As a result of implementing the 6 month E-4 sea change, we would expect to see an increase in the E-4 projected sea staffing of 2 * 1.6 = 3 people, and a corresponding decrease in projected E-4 shore staffing of 3 people.

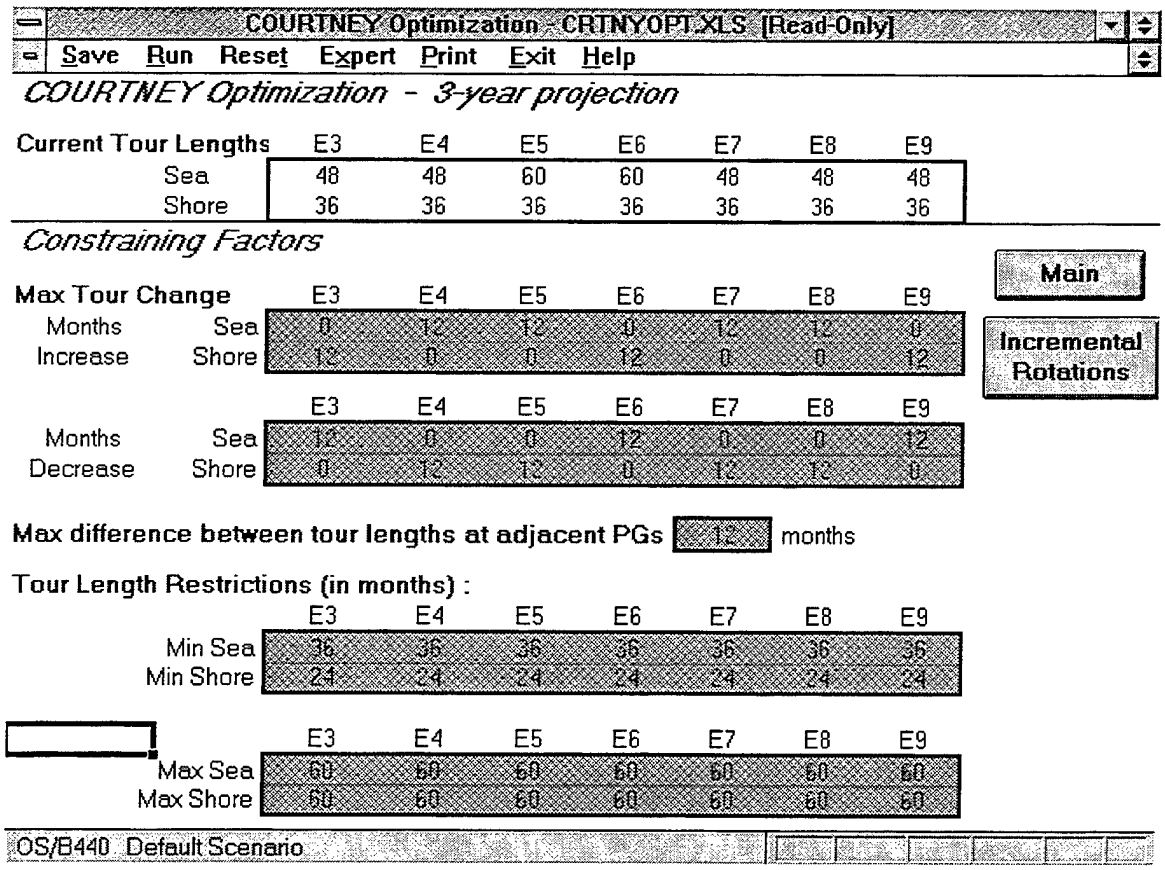
Similarly, we would expect an E-5 sea increase of 2 * 12.1 = 24 and an E-5 shore decrease of 24; and an E-6 sea increase of 2 * .9 = 2 and an E-6 shore decrease of 2.

Referring to this table can be very useful for anticipating the degree to which a change in rotation policy is likely to affect sea and shore staffing for each paygrade. The actual change projected by the COURTNEY model may be slightly different because the optimization module uses the average number of people rotating to estimate inventory while the COURTNEY model projects the actual number rotating. For this reason, the COURTNEY model projection should be a little more accurate.

Constraints

If you click on the Constraints button, a screen defining the limits placed by the Optimization module on the tour lengths will be displayed. This screen shows the Maximum Tour Change allowed in the Optimization, the Maximum difference between tour lengths at adjacent paygrades allowed in the Optimization, and the Maximum and Minimum Tour Lengths allowed in the Optimization (the Tour Length Restrictions).

You may adjust any of the default constraints. When changing them, use numbers that are multiples of three.



Max Tour Change

The default maximum increase or decrease in a tour for a particular paygrade and type of duty will be either twelve months or zero months, depending on the difference between projected inventory and desired inventory for the subject paygrade and the next higher paygrade (except E-9 uses the subject paygrade only).

For sea duty, if either paygrade is understaffed, the maximum decrease for the subject paygrade sea tour is set to zero, and so is the maximum increase for the subject paygrade shore tour. If both paygrades are overstaffed, the maximum increase for the subject paygrade sea tour is set to zero, and so is the maximum decrease for the subject paygrade shore tour. For shore duty, if both paygrades are understaffed, the maximum decrease for the subject paygrade shore tour is set to zero, and so is the maximum increase for the subject paygrade sea tour. If both paygrades are overstaffed, the maximum increase for the subject paygrade shore tour is set to zero, and so is the maximum decrease for the subject paygrade sea tour.

Maximum difference between tour lengths at adjacent PGs

The default maximum difference between tour lengths at adjacent paygrades will be twelve months, unless the current tours have a larger difference between adjacent paygrades. In this case, the largest difference existing among the current tour lengths will be used.

Tour Length Restrictions

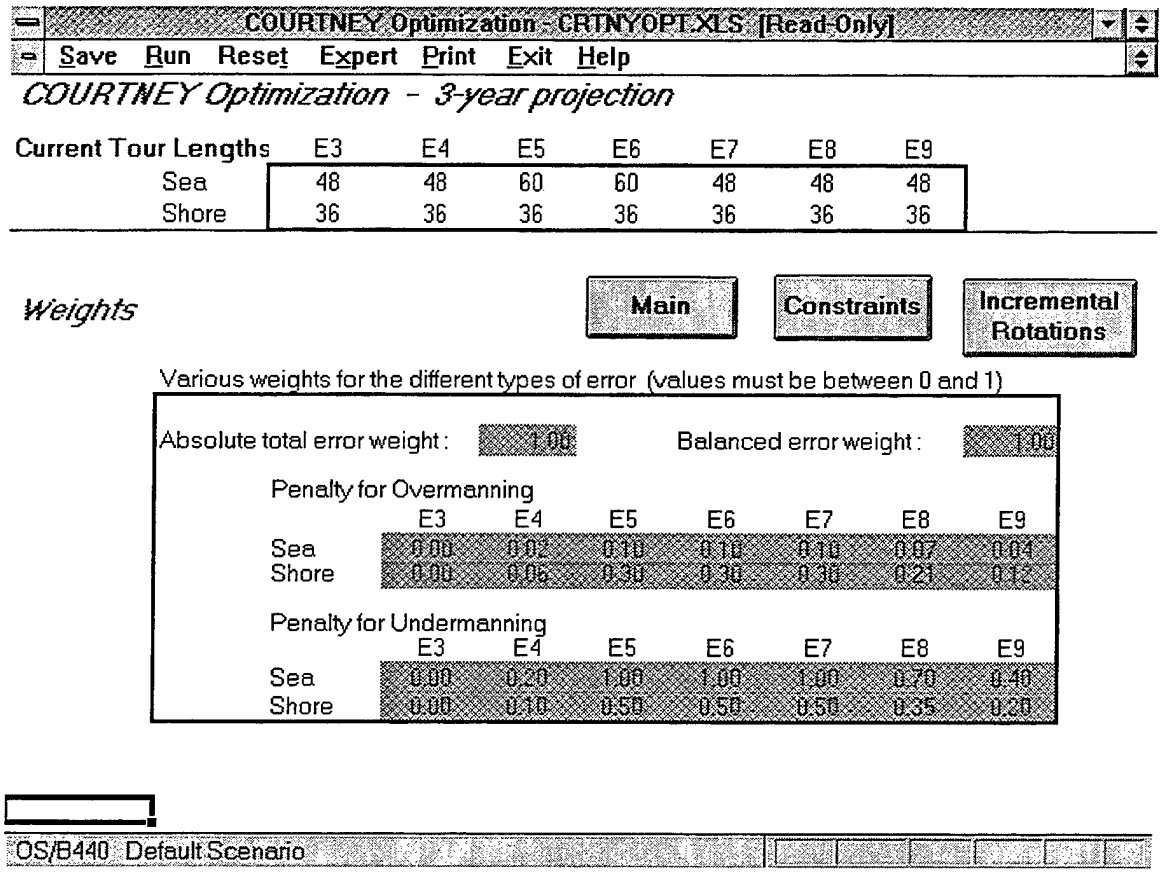
The default maximum tour length will be sixty months, unless there is currently a tour longer than sixty months. In this case, 72 months will be used. The default minimum sea tour is 36 months, and the minimum shore tour is 24 months, unless current tours violate this rule, in which case the current minimum is used.

If you want to force the optimization to implement a specific tour length for a paygrade and type duty, set the maximum and minimum tour to the same value.

The original constraints are designed to give the optimization a set of inputs which will allow it to reach a solution. Adjusting the Maximum difference between tour lengths at adjacent paygrades or adjusting the Tour Length Restrictions may cause the Optimization module to fail to find a set of tours that satisfy the constraints. This can happen only when the constraints selected are already violated by the current tours. If it does happen, try increasing the Maximum Tour Change values, especially the zeroes. If the Optimization still cannot find a solution, you may need to make the other constraints less restrictive.

Weights

Another way to influence the tour lengths selected by the optimization is by adjusting the values placed by the optimization on various differences (error) between estimated and desired inventories. This can be done in the Weights screen. Because the effects of changing weights are difficult to predict, this screen should only be accessed by experienced users of the Optimization module. To access this screen, click on the "Expert" item on the menu bar, and then click on "Go to Weights" from the drop down menu. The following screen, containing the default weights will appear.



There are two main categories of weights, the **absolute total error weight** and the **balanced error weight**. The absolute total error weight is broken down into the penalty for overstaffing and understaffing weights by paygrade and type of duty.

The value of the error (the difference between the estimated and the desired inventory) for paygrade E-5 would be calculated as follows:

Absolute total error weight * (penalty for E-5 understaffing at sea * E-5 sea understaffing error + penalty for E-5 overstaffing at sea * E-5 sea overstaffing error + penalty for E-5 understaffing at shore * E-5 shore understaffing error + penalty for E-5 overstaffing at shore * E-5 shore overstaffing error) +

Balanced error weight * | E-5 sea error - E-5 shore error |

As an example, suppose that the default weights are in effect, and the estimated E-5 staffing is 5 more than desired at sea and 10 less than desired at shore. The resulting E-5 portion of the error value would be:

$$1.00 * (1.00 * 0 + 0.10 * 5 + 0.50 * 10 + 0.30 * 0) +$$

$$1.00 * | 5 - (-10) | = 1.00 * (0.5 + 5.0) + 1.00 * 15 = 5.5 + 15 = 20.5$$

All of the paygrade error values are summed to get the total error value. The optimization module minimizes the total error value subject to the constraints imposed. If you want to change the relative value of a particular kind of error, you may adjust the weights by changing them to any value between 0 and 1 (inclusive). If shore staffing is totally unimportant in your community, you may set the balanced error weight to zero. If achieving a balance of sea and shore staffing is the only thing that matters to you, you may set the absolute total error weight to zero.

Results of changing the weights cannot be easily predicted. If you think that the optimization is not placing the proper value on a particular kind of error, experiment with changing the relative weight values, and evaluate the results to see if the change has achieved the desired effect.

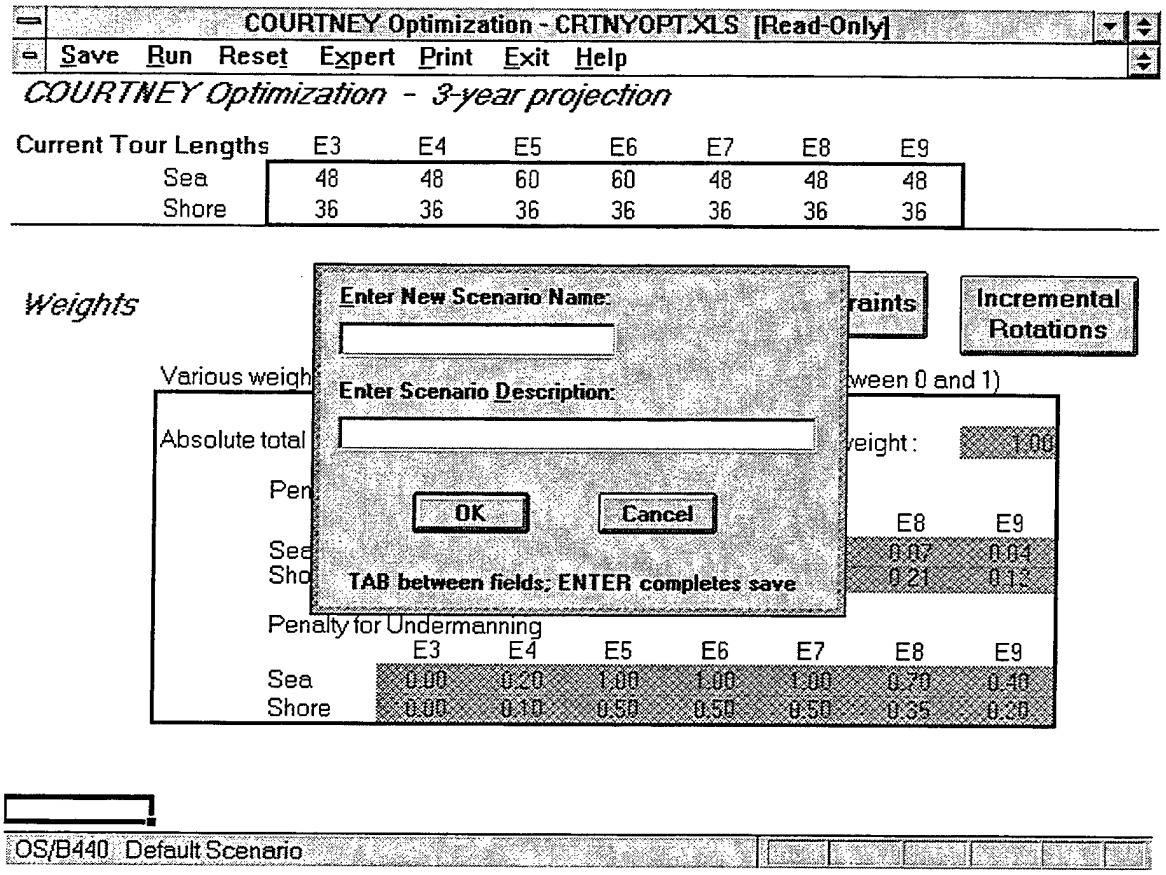
Other Menu Bar Options

If you have changed values on any of the optimization screens during the course of an optimization session, you may restore the values to their original values at the beginning of the session if you have not yet saved the scenario you are working on in the optimization module. Just click on "Reset" on the menu bar, then click on Reset to Original Values from the drop down menu.

After you have executed a "Run Optimization," you may save the optimization inputs and **automatically write the Recommended Tours as Revised Tours** (to be implemented at the beginning of the second projection year) in the scenario by clicking on "**Save**" on the menu bar. Then, to add the information to the current scenario, click on "**Save to Current Scenario**" from the drop down menu. If inventory projections for the current scenario have been previously generated, you will get a message saying that the existing output files will be deleted. Click on "OK" and the save will be completed. If the current scenario is the Default Scenario, you generally will not be allowed to save to the current scenario because

the default information is protected from being overwritten. In this case you should save to a new scenario.

To save all of the current scenario information, including the optimization inputs and Revised Tours to a new scenario, click on "**Save to New Scenario**" from the drop down menu. In this case, the following window will be superimposed on the screen:



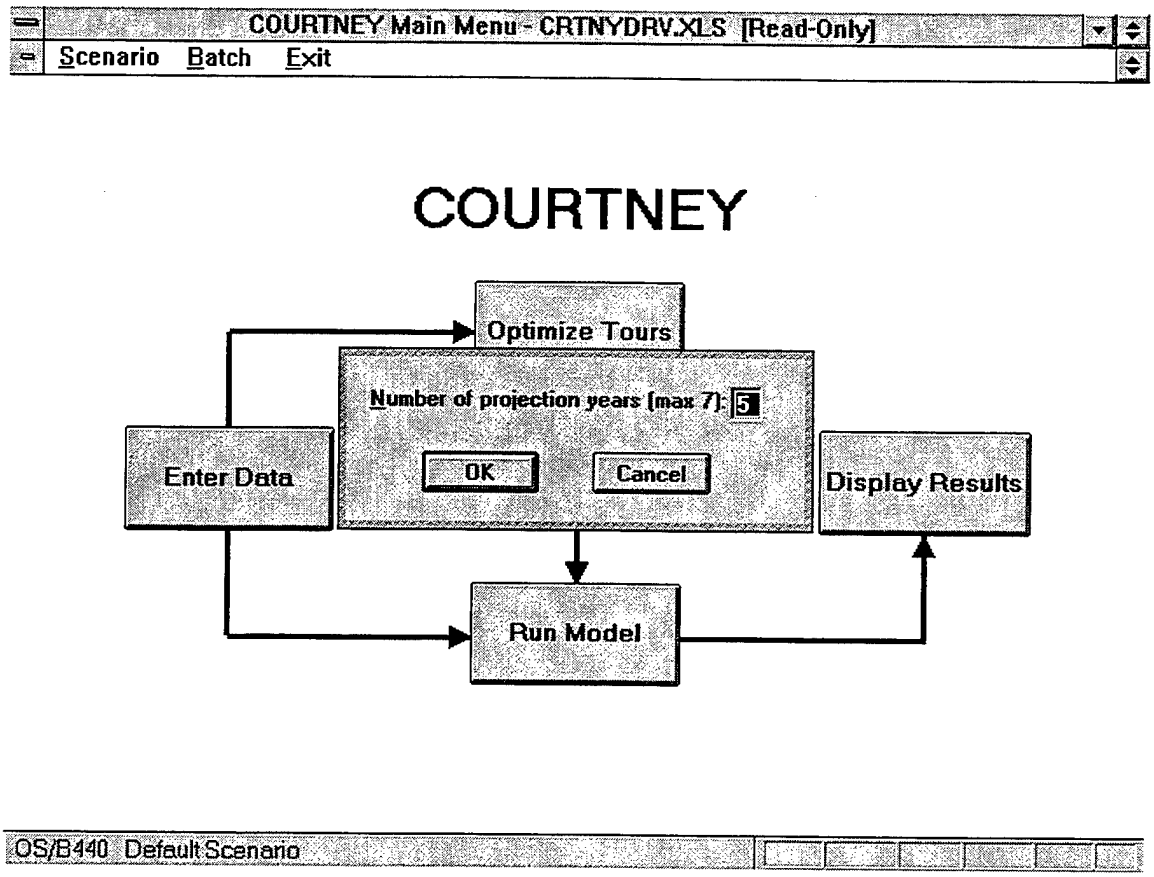
Type in a new scenario name, and then press the "Tab" key to access the description field. If you press "Enter" after entering the scenario name, you will not be given a chance to enter a description. When you have finished entering your description, press "Enter" to complete the save procedure.

To get a two page hard copy of the Optimization information, click on "**Print**" on the menu bar.

To exit the Optimization module, click on "**Exit**" on the menu bar. The drop down menu will give you the choice of returning to the COURTNEY Main Menu, or exiting the COURTNEY system entirely.

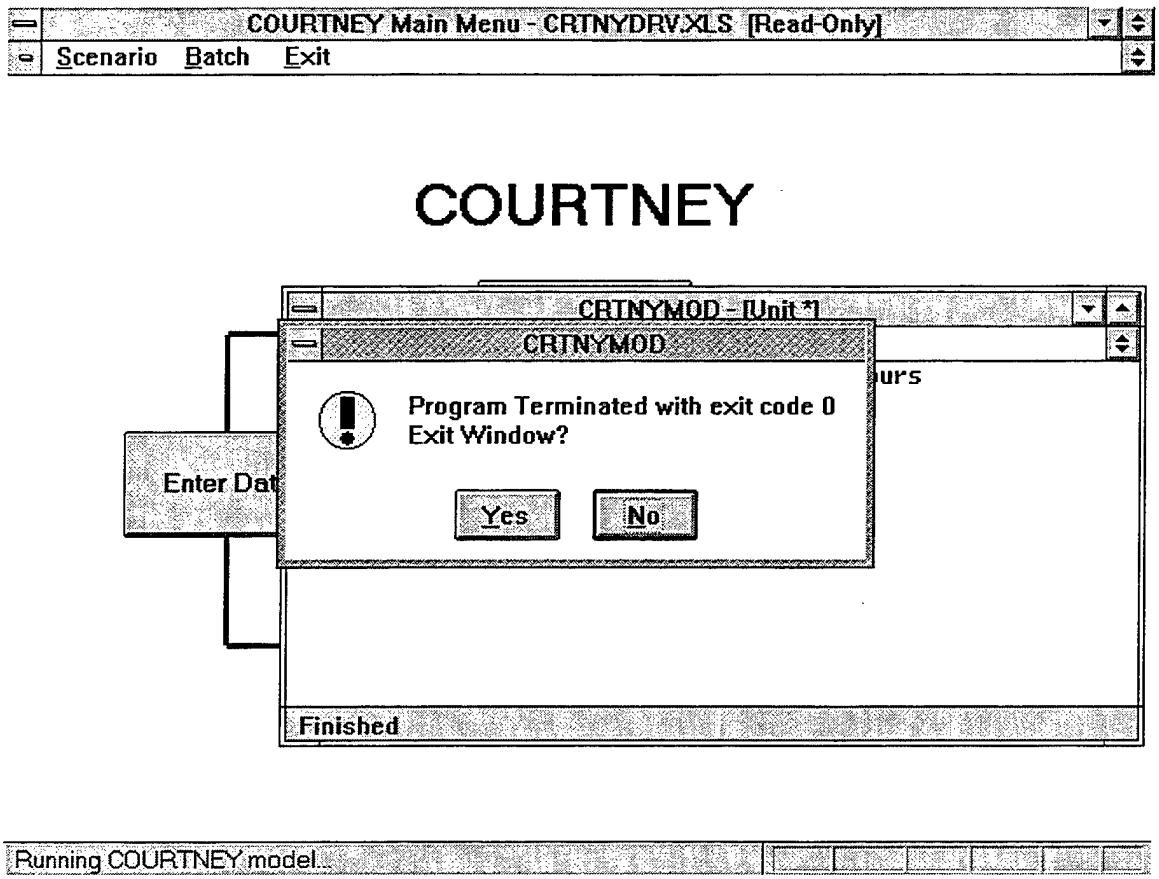
RUN MODEL

To **generate inventory projections** for the current scenario based on the data entered in the "Enter Data" module (and for revised tour lengths generated in the "Optimize Tours" module), you must run the Model. To do this, click on the "**Run Model**" button. (You can also run the Model without implementing revised tours in the "Optimize Tours" module, as described in the Optimize Tours section of this guide.) You will be prompted to enter the number of years you want the Model to project.



The default projection is five years, but you may ask the model to project as many as seven years ahead. After you type in the number of years to project, click on "OK" and the "CRTNYMOD" window will pop up and the model will begin running. A message in the window lets you know that this is a regular model run which will implement any revised tours which are a part of the scenario (as opposed to an Optimization model run which does not implement revised tours). The Skill code and Scenario name will be given, and a dynamic status line which tells how many quarters of the inventory projection have been completed.

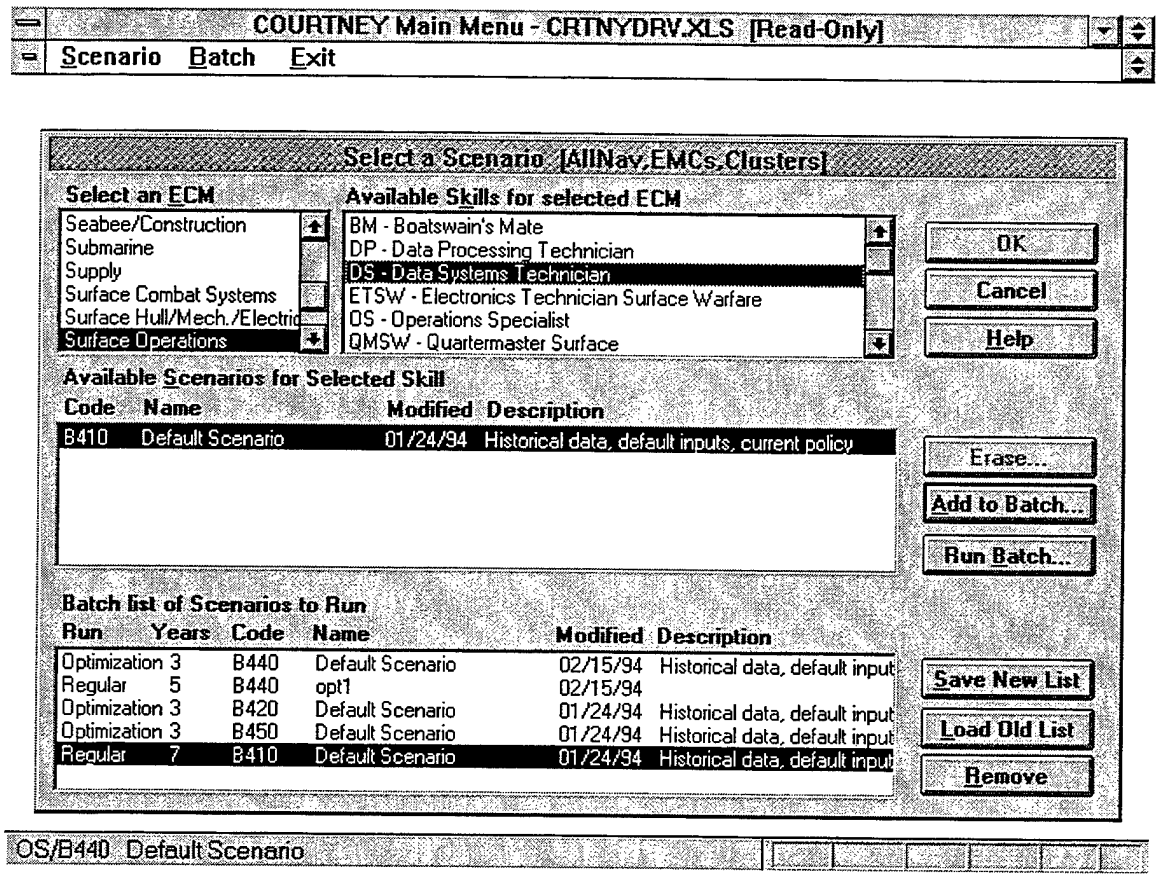
When the inventory projection is complete, a message will be superimposed on the model window which says, "Program Terminated with exit code 0. Exit Window?"



This indicates that the model run was successful (exit code 0 means no errors). Click on "Yes" to exit the window. (Unfortunately, the default choice here is "No," so if you happen to press the "Enter" key the window will be left open. You must then close it by double-clicking on the small bar in the upper left corner of the "CRTNYMOD" window.) A window informing you that "Model Execution has completed" will pop up. Click on the "OK" button to continue. You will be returned to the COURTNEY Main Menu.

BATCH MODE

If you click on **Batch** in the Main Menu menu bar, you can select several scenarios for Model runs. The **Select a Scenario** menu appears with an additional section which will contain the list of scenarios you select. Highlight a scenario you wish to run as in the scenario selection process, then click on the **Add to Batch** button.



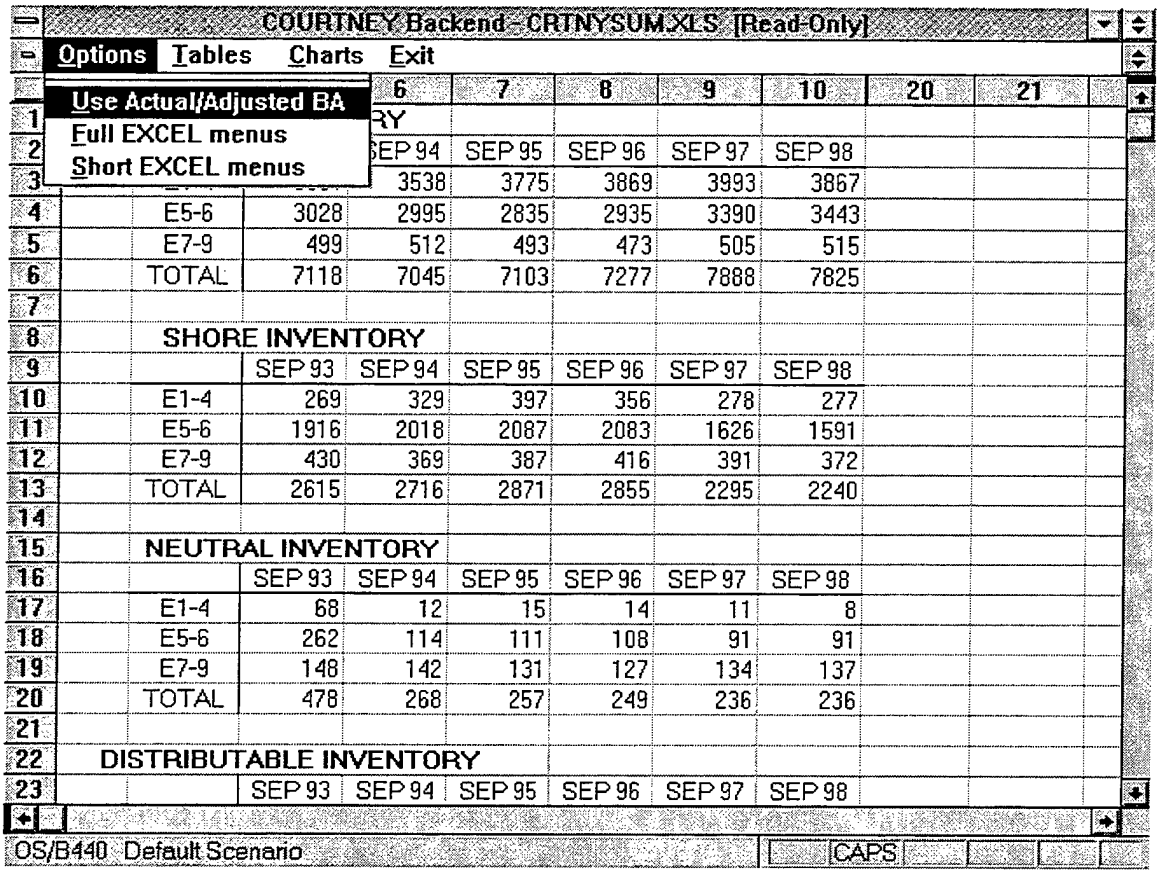
You will be asked to choose whether you want a **regular** Model run for projecting personnel inventories or an **optimization** Model run for generating inputs for the Optimization module. Then you will be asked to choose how many years you want the Model to project. Then the scenario will be added to the **Batch list of Scenarios to Run** in the bottom part of the window. You can repeat this procedure for as many scenarios as you want to run. If you decide you want to remove a scenario from the list, first click on the scenario in the bottom part of the window, then click on the **Remove** button. If you want to save the list for later execution, click on **Save New List**. (Any previously saved list will be replaced with the current list.) You can start doing the Model runs by clicking on **Run Batch**. Or, you can exit Batch Mode by clicking on the **Cancel** button.

If you have saved the list, you can enter the Batch Mode screen later and click on the **Load Old List** button, which loads the saved list into the **Batch list of Scenarios to Run** window. You can then add scenarios or remove scenarios from the list as before.

DISPLAY RESULTS

Bring up the COURTNEY **Display Results** module (Backend) by clicking on the "Display Results" button. When the current scenario has been loaded, you will see a menu near the top of the screen, with the words, **OPTIONS TABLES CHARTS EXIT**

Clicking on one of these words will reveal a drop down menu.



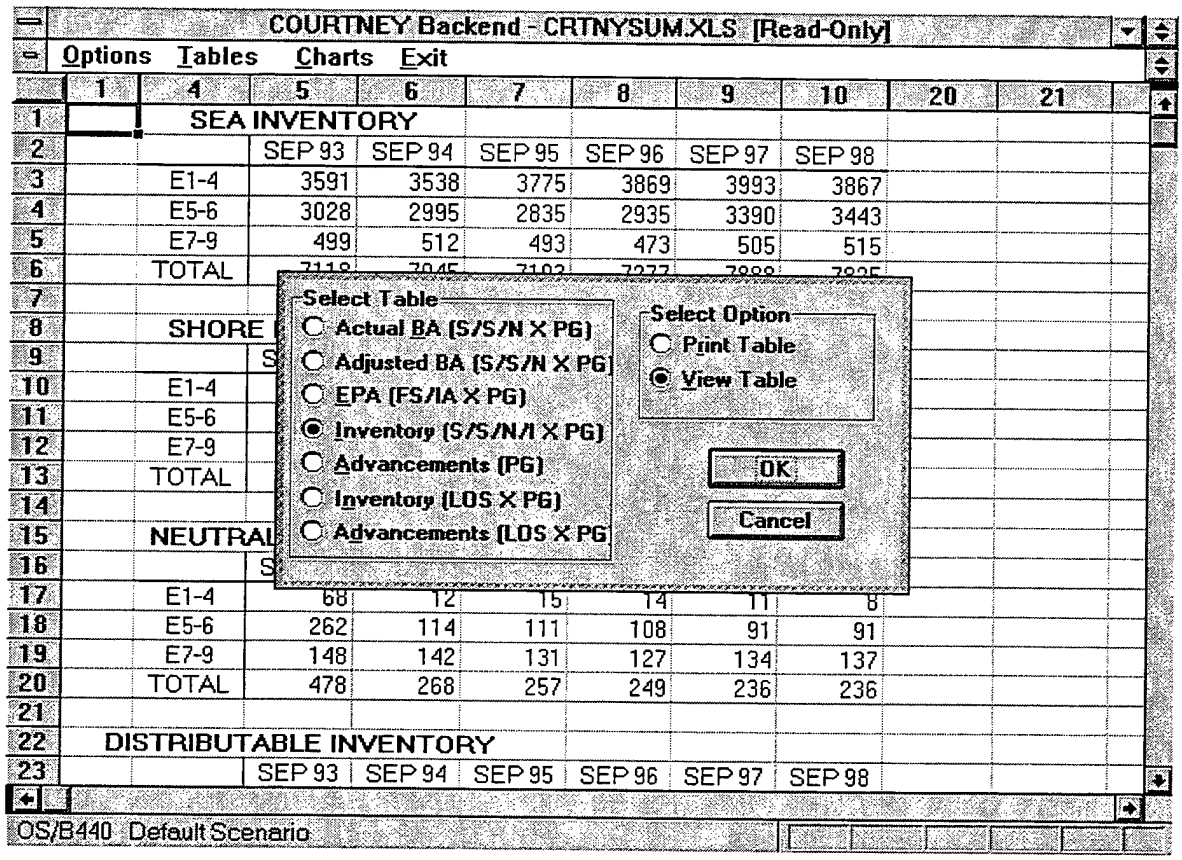
OPTIONS

If you select "**Use Actual/Adjusted BA**" from this drop down menu, you can choose whether you want the charts to use Actual BA numbers or Adjusted BA numbers. The **Adjusted BA** is obtained by proportionally increasing or decreasing the Actual BA sea and shore value for each paygrade so that the total paygrade BA is equal to the total distributable EPA value. **The default setting is for the charts to use Adjusted BA.**

You may also use this menu if you are an experienced Excel user, and want to make use of Excel features that you are familiar with. To do so, select "Full EXCEL Menus" or "Short EXCEL Menus."

TABLES

Use this menu to **view/print tables** of the inventory projection results. If you select "**Print Tables**" from this menu, **all of the tables** will be printed. This would be 19 pages of results. If you want **to print selected tables**, choose "**Select Table**" first; after you select the table you want, you can print it.



Select Table From this menu you may **view** or **print** any of the following tables:

Actual BA (S/S/N x PG) Billets Authorized by sea/shore/neutral, paygrade, and projection year. These should be the same as on the BA/EPA screen in the Frontend. They are not affected by the Model.

COURTNEY Backend - CRTNYFUL.XLS [Read-Only]

Options Tables Charts Exit

TOTAL			BA B3	E4	E5	E6	E7	E8	E9	TOTAL
7118		SEA	1794	2415	2898	1092	276	186	39	8700
2615	SEP 93	SHORE	63	238	680	896	372	96	45	2390
478		NEUTRAL	13	64	114	72	95	30	21	409
785		TOTAL	1870	2717	3692	2060	743	312	105	11499
10996										
7045		SEA	1665	1983	2615	900	275	162	43	7643
2716	SEP 94	SHORE	68	340	726	826	325	93	45	2423
268		NEUTRAL	2	14	30	46	85	25	19	221
860		TOTAL	1735	2337	3371	1772	685	280	107	10287
10889										
7103		SEA	1693	1950	2642	921	271	163	51	7691
2871	SEP 95	SHORE	63	325	709	808	319	92	48	2364
257		NEUTRAL	2	14	30	45	82	25	19	217
687		TOTAL	1758	2289	3381	1774	672	280	118	10272
10918										
7277		SEA	1698	1940	2651	931	274	161	52	7707
2855	SEP 96	SHORE	60	322	706	802	319	92	50	2351
249		NEUTRAL	2	14	30	45	82	25	19	217

OS/B440 Default Scenario

If the total BA for a paygrade is much different from the Force Structure (FS) EPA, staffing can be over (or under) 100 percent at both sea and shore. This is because the total number of people will match the EPA while the sea/shore staffing target is based on BA. If this problem occurs, and if you have selected Actual BA in the "Options" menu, return to the "Options" menu and switch to Adjusted BA.

Adjusted BA (S/S/N x PG) The Adjusted BA is obtained by proportionally increasing or decreasing the Actual BA sea and shore value for each paygrade so that the total paygrade BA is equal to the total distributable EPA value.

COURTNEY Backend - CRTNYFUL.XLS [Read-Only]

Options Tables Charts Exit

Adjusted BA

		B3	E4	E5	E6	E7	E8	E9	TOTAL
SEP 93	SEA	1743	2361	2816	1076	275	178	37	8486
	SHORE	61	233	661	883	370	92	43	2343
	NEUTRAL	13	63	111	71	95	29	20	402
	TOTAL	1817	2657	3588	2030	740	299	100	11231
SEP 94	SEA	1591	2092	2604	898	259	161	41	7646
	SHORE	65	359	723	824	306	93	42	2412
	NEUTRAL	2	15	30	46	80	25	18	216
	TOTAL	1658	2466	3357	1768	645	279	101	10274
SEP 95	SEA	1526	2033	2605	902	254	162	47	7529
	SHORE	57	339	699	792	299	92	44	2322
	NEUTRAL	2	15	30	44	77	25	17	210
	TOTAL	1585	2387	3334	1738	630	279	108	10061
SEP 96	SEA	1545	2029	2637	916	252	162	49	7590
	SHORE	55	337	702	789	293	93	47	2316
	NEUTRAL	2	15	30	44	75	25	18	209

OS/B440 Default Scenario

EPA (FS/IA x PG) Enlisted Programmed Authorizations by Force Structure /Individuals Account, paygrade, and projection year. These should be the same as on the BA/EPA screen in the Frontend. They are not affected by the Model.

COURTNEY Backend - CRTNYFUL.XLS [Read-Only]

Options Tables Charts Exit

EPA

		B3	E4	E5	E6	E7	E8	E9	TOTAL
SEP 93	FS	1817	2656	3588	2029	740	298	100	11228
	IA	510	142	172	183	44	5	2	1058
	TOTAL	2327	2798	3760	2212	784	303	102	12286
SEP 94	FS	1658	2465	3357	1768	646	279	101	10274
	IA	460	133	148	139	42	5	2	929
	TOTAL	2118	2598	3505	1907	688	284	103	11203
SEP 95	FS	1585	2387	3334	1738	629	279	108	10060
	IA	453	131	146	139	41	5	2	917
	TOTAL	2038	2518	3480	1877	670	284	110	10977
SEP 96	FS	1601	2380	3369	1750	621	280	113	10114
	IA	456	133	149	141	41	5	2	927
	TOTAL	2057	2513	3518	1891	662	285	115	11041

SEP 94 VACA ELIGI VAC./ AVG.

SEP 95 VACA ELIGI VAC./ AVG.

SEP 96 VACA ELIGI VAC./

OS/B440 Default Scenario

Inventory (S/S/N/I x PG) Personnel inventory projected by the Model by sea/shore/neutral /IA, paygrade, and projection year.

COURTNEY Backend - CRTNYFUL.XLS [Read-Only]

Options Tables Charts Exit

INVENTORY

		B3	E4	E5	E6	E7	E8	E9	TOTAL
SEP 93	SEA	1618	1973	1736	1292	344	124	31	7118
	SHORE	67	202	1146	770	264	110	56	2615
	NEUTRAL	14	54	192	70	108	23	17	478
	IA	261	99	224	153	28	15	5	785
	TOTAL	1960	2328	3298	2285	744	272	109	10996
SEP 94	SEA	1688	1850	1720	1275	336	136	40	7045
	SHORE	109	220	1497	521	223	105	41	2716
	NEUTRAL	3	9	62	52	102	22	18	268
	IA	364	91	225	128	27	20	5	860
	TOTAL	2164	2170	3504	1976	688	283	104	10889
SEP 95	SEA	2143	1632	1690	1145	315	135	43	7103
	SHORE	156	241	1524	563	233	109	45	2871
	NEUTRAL	5	10	64	47	94	21	16	257
	IA	280	63	199	93	28	18	6	687
	TOTAL	2584	1946	3477	1848	670	283	110	10918
SEP 96	SEA	1756	2113	1857	1078	300	128	45	7277
	SHORE	128	228	1432	651	248	118	50	2855
	NEUTRAL	4	10	61	47	89	21	17	249

OS/B440 Default Scenario

You can use the **Inventory table** together with the **BA table** to **compare projected sea/shore staffing with BA** at the **paygrade** level (the charts only give the paygrade group level.

Use the Inventory table together with the **EPA table** to **compare projected IA inventories with IA billets**. If too many people are projected in the IA, then not enough will be available for sea/shore duty, and **staffing could be under 100 percent at sea and shore**. If not enough people are projected in the IA, then too many people are available for sea/shore duty, and **staffing could be over 100 percent at sea and shore**. Sometimes the EPA IA targets are not realistic. See **The Individuals Account** section of this guide for more details.

Advancements (PG) Projected vacancies, eligibles, vacancy-to-eligible ratio, and average LOS for advancement by paygrade and projection year.

COURTNEY Backend - CRTNYFUL.XLS [Read-Only]

Options Tables Charts Exit

30	31	32
5	2	1058
303	102	12286
279	101	10274
5	2	929
284	103	11203
279	108	10060
5	2	917
284	110	10977
280	113	10114
5	2	927
285	115	11041
280	120	10191

ADVANCEMENT OPPORTUNITY

		E4	E5	E6	E7	E8	E9
SEP 94	VACANCIES	1586	623	0	97	89	18
	ELIGIBLES	1163	1497	1724	1610	400	151
	VAC./ELG.	1.36	0.42	0.00	0.06	0.22	0.12
	AVG. LOS	3.0	4.6	10.1	13.5	17.5	20.5
SEP 95	VACANCIES	1584	616	178	135	85	29
	ELIGIBLES	1012	1504	2086	1628	411	110
	VAC./ELG.	1.57	0.41	0.09	0.08	0.21	0.26
	AVG. LOS	2.5	4.6	9.6	13.7	17.4	20.6
SEP 96	VACANCIES	1756	794	304	133	80	29
	ELIGIBLES	1646	1508	2130	1524	369	85
	VAC./ELG.	1.07	0.53	0.14	0.09	0.22	0.34
	AVG. LOS	2.5	4.5	9.8	14.0	17.5	20.6
SEP 97	VACANCIES	1479	902	355	161	86	32

OS/B440 Default Scenario

You can use the EPA, Inventory, and Advancements tables together to see if advancements are being handled properly. For E-5—E-9, if total inventory exceeds total EPA, then there should not have been any advancements into the paygrade, because it was already too full. In this case, if you want the Model to advance people anyway, you need to go into the Advancement Factors screen in the "Enter Data" module and set the advancement percentages over 100 percent. If the total inventory is less than the total EPA, there are two possibilities: (1) some of the inventory had been removed due to high year tenure limits, or (2) all eligibles have been advanced. The latter is a sign that there may not be enough people eligible for advancement in the EMC.

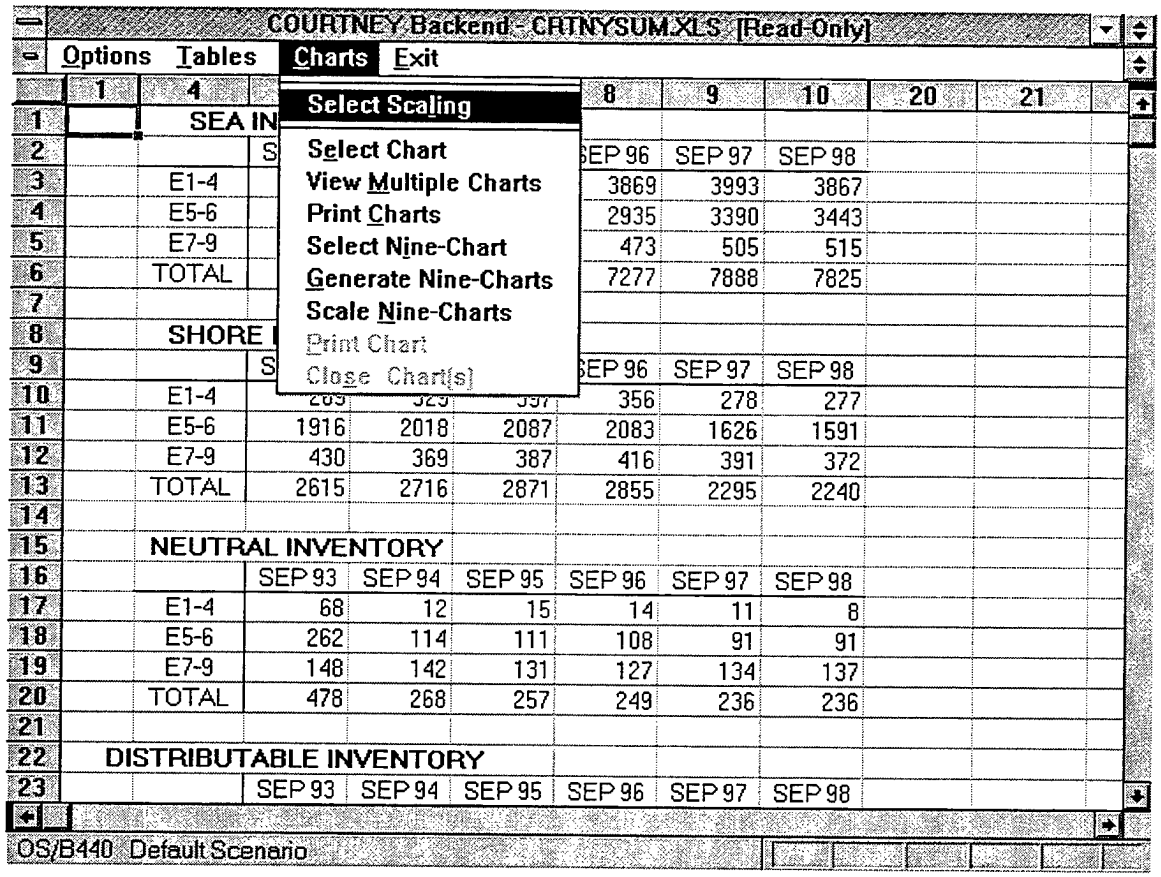
You can also use the Advancement table to find out the average LOS for advancement in the EMC. And, by checking the ratio of vacancies to eligibles (Vac/Elg), you can tell if there are not enough eligible people to fill paygrade targets, or if advancement opportunity is limited.

Inventory (LOS x PG) If you want LOS detail, this eight page table has projected inventories by years-of-service, paygrade, and projection year.

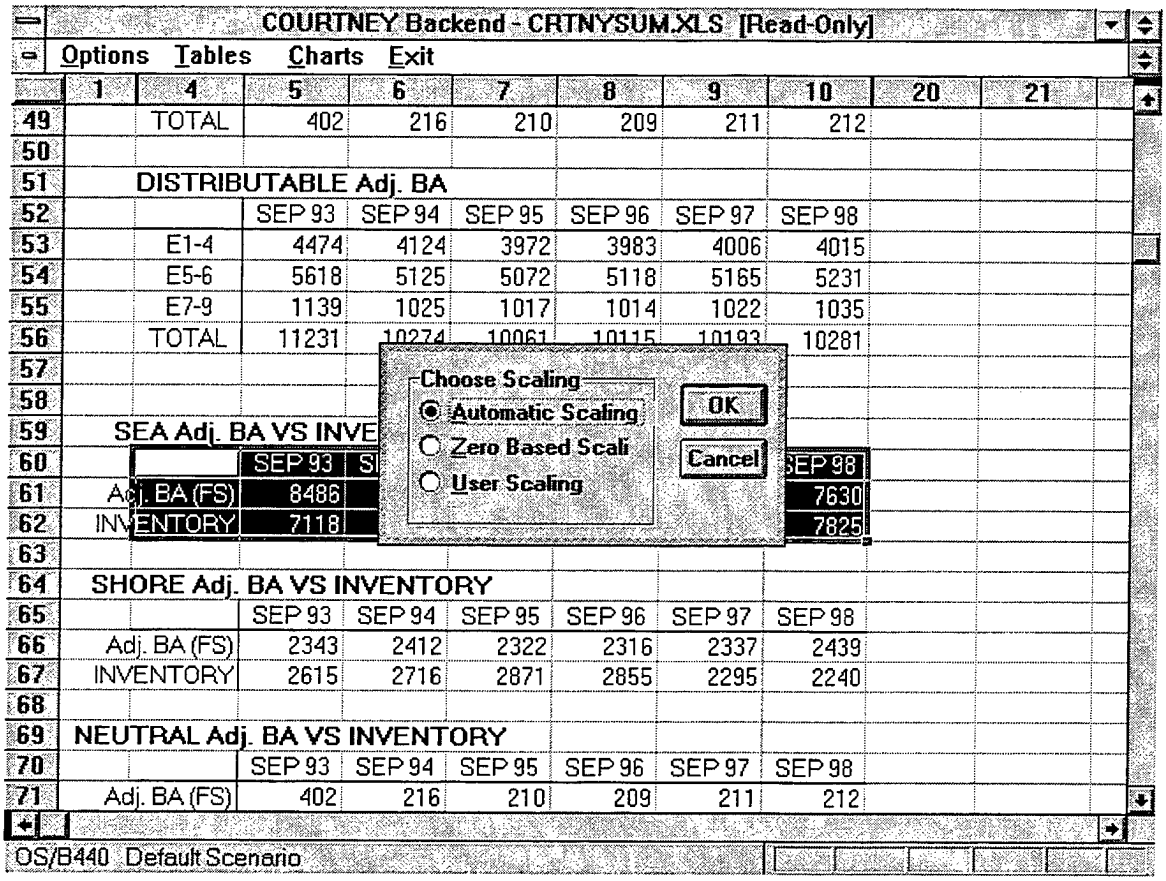
Advancements (LOS x PG) If you want LOS detail, this seven page table has projected advancements by years-of-service, paygrade, and projection year.

CHARTS

There are two types of charts referred to in this menu. One is a group of 12 assorted charts which the menu refers to simply as "**charts**." This guide shall refer to them as "**individual charts**." The other is a different group of 12 charts which is referred to as the "**nine-charts**." These are charts of sea, shore, neutral, and total staffing by apprentice (B-3—E-4), journeyman (E-5—E-6), and supervisor (E-7—E-9) paygrade groups.



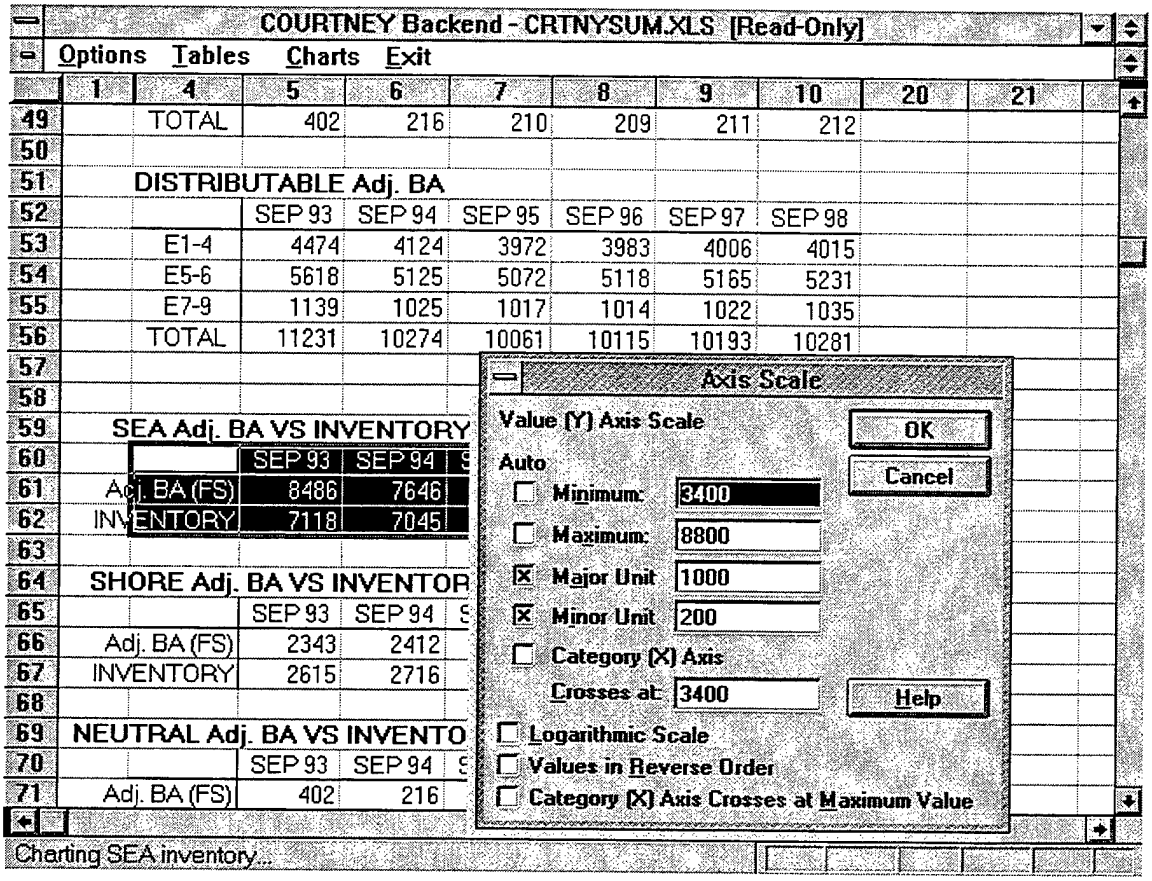
Select Scaling This option allows you to customize the way the individual charts are scaled. If you are happy with the **"Automatic Scaling,"** you can leave this option alone.



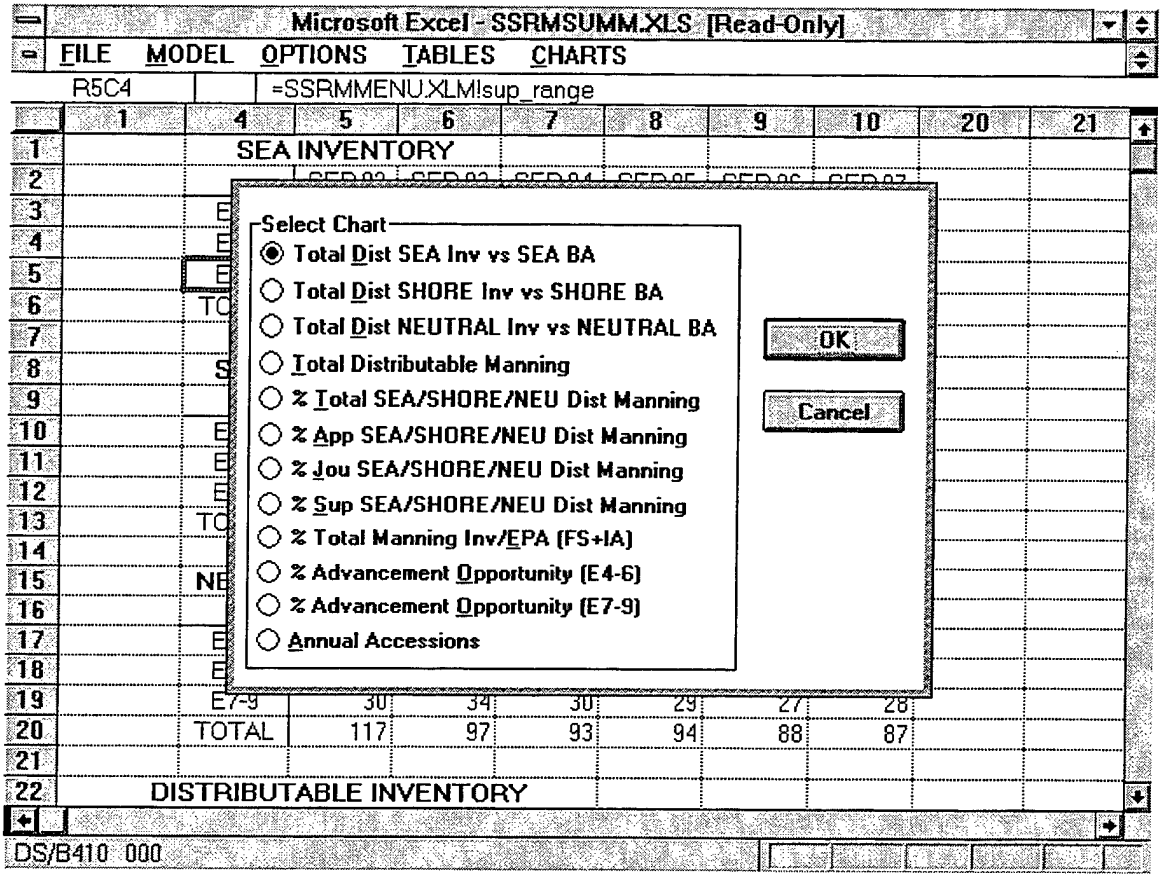
	1	4	5	6	7	8	9	10	20	21
49		TOTAL	402	216	210	209	211	212		
50										
51		DISTRIBUTABLE Adj. BA								
52			SEP 93	SEP 94	SEP 95	SEP 96	SEP 97	SEP 98		
53		E1-4	4474	4124	3972	3983	4006	4015		
54		E5-6	5618	5125	5072	5118	5165	5231		
55		E7-9	1139	1025	1017	1014	1022	1035		
56		TOTAL	11231	10274	10061	10115	10193	10281		
57										
58										
59		SEA Adj. BA VS INVE								
60			SEP 93	S				EP 98		
61		Adj. BA (FS)	8486					7630		
62		INVENTORY	7118					7825		
63										
64		SHORE Adj. BA VS INVENTORY								
65			SEP 93	SEP 94	SEP 95	SEP 96	SEP 97	SEP 98		
66		Adj. BA (FS)	2343	2412	2322	2316	2337	2439		
67		INVENTORY	2615	2716	2871	2855	2295	2240		
68										
69		NEUTRAL Adj. BA VS INVENTORY								
70			SEP 93	SEP 94	SEP 95	SEP 96	SEP 97	SEP 98		
71		Adj. BA (FS)	402	216	210	209	211	212		

If you select "**Zero Based Scaling**," all individual charts selected during the same session will have zero as the bottom axis.

If you select "**User Scaling**," you will be given an opportunity to define the scale before each individual chart is displayed:



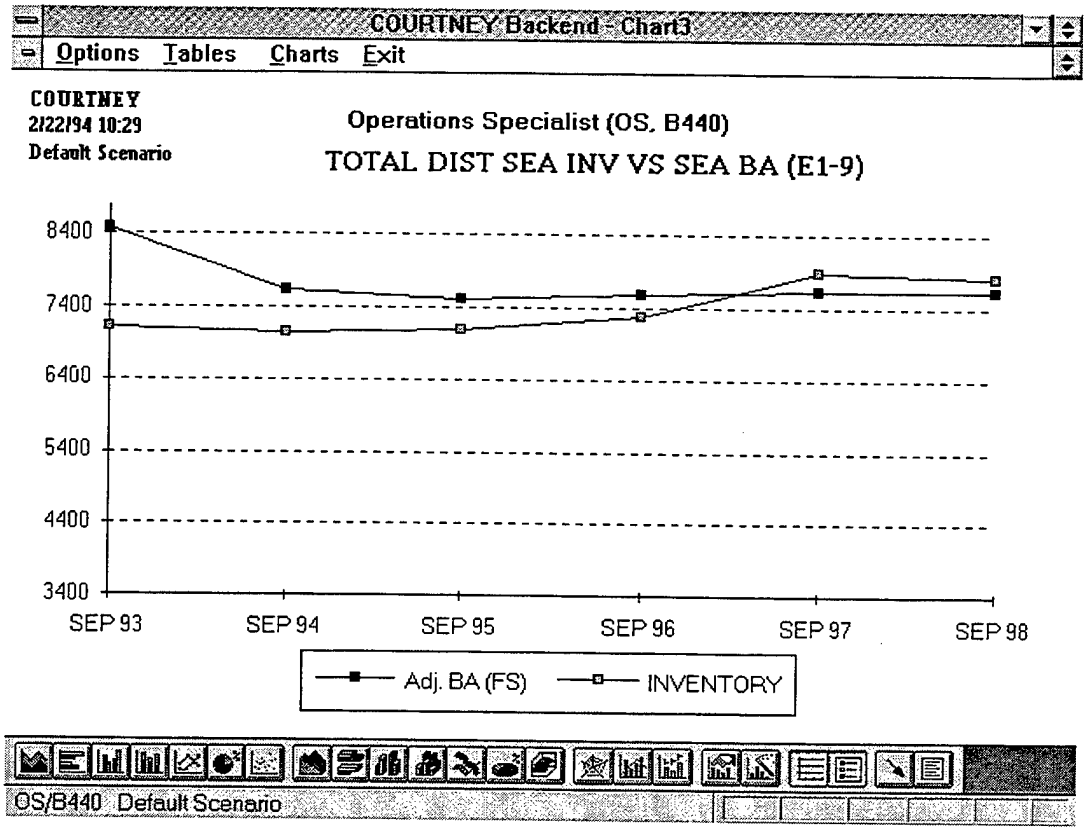
Select Chart This option allows you to **select the individual chart** you want to view or print. These charts all represent Model projections.



After you select the chart and it is loaded, if you want to **print the chart**, click on **CHARTS** on the Menu Bar near the top of the screen, then select **Print Chart** from the **CHARTS** Menu.

After you have selected a chart, **you must close the chart** before you continue in the program. To close the chart, click on **CHARTS** on the Menu Bar near the top of the screen, then select **Close Chart** from the **CHARTS** Menu.

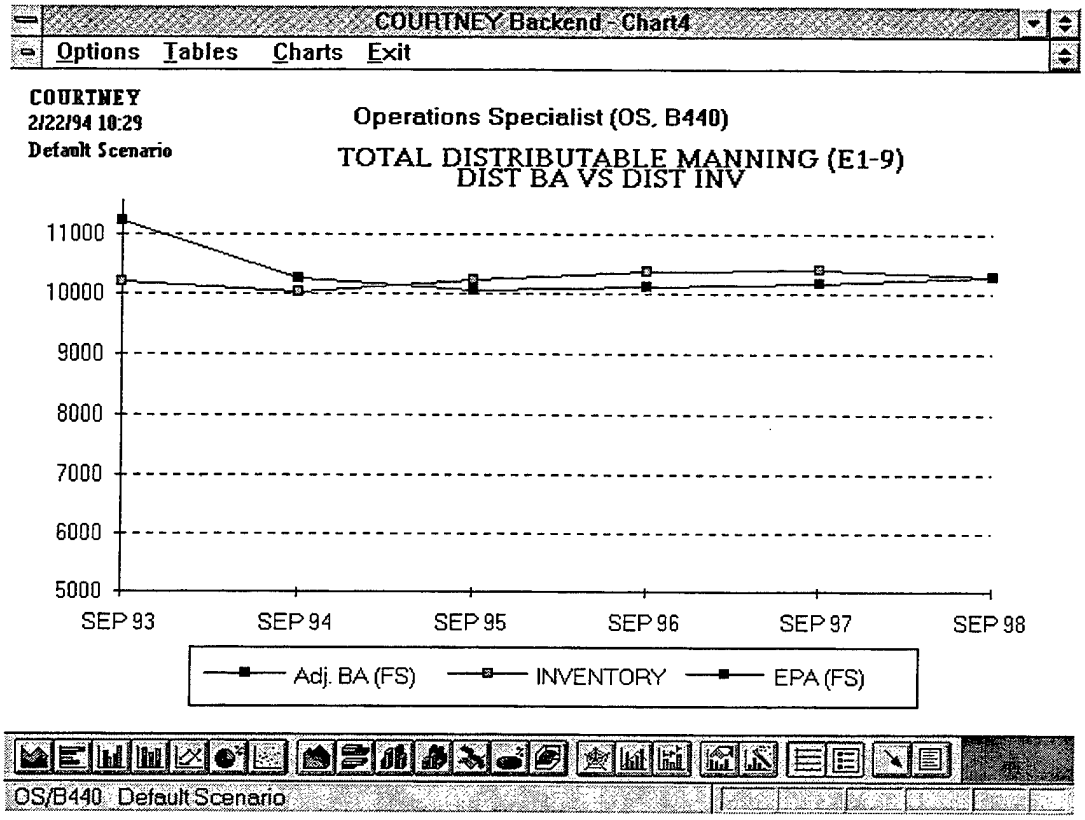
Total Dist SEA Inv vs. SEA BA



This chart plots the **sea inventory projection** and the **Adjusted BA or Actual BA** (depending on which has been selected under "Options"). There are corresponding charts for **shore** and **neutral** duty.

The **neutral duty** projections in COURTNEY are derived by taking out a percentage of the sea and shore projections. They can be affected only indirectly by changes to sea/shore policy. The neutral billets and projections are very small relative to the sea and shore numbers. For sea/shore tour length planning you can ignore the neutral duty projections.

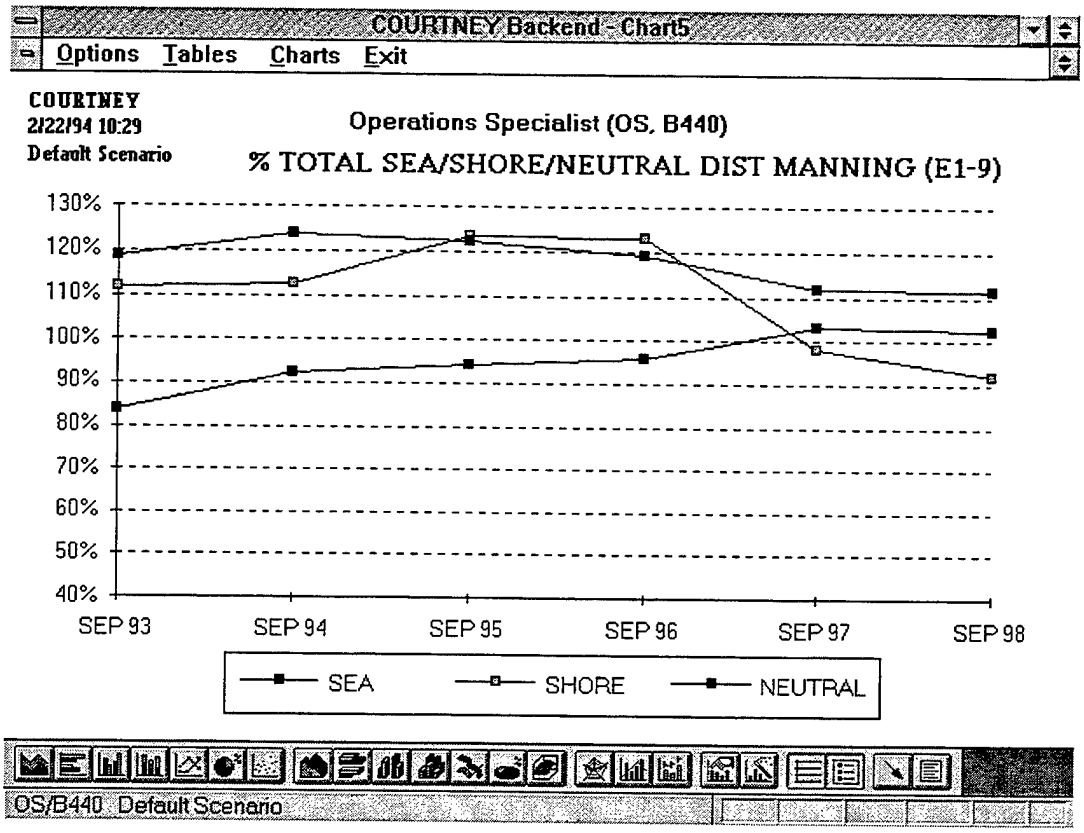
Total Distributable Manning



This chart plots the projected distributable inventory and the distributable EPA and BA (FS stands for Force Structure). When Adjusted BA is being used, the EPA and BA values will be the same.

It will tell you if the EMC has enough or too many people to meet staffing targets. The IA inventory is not included in the inventory on this chart. If the inventory exceeds the BA, both sea and shore staffing could exceed 100 percent. If the inventory is less than the BA, both sea and shore staffing could be under 100 percent. You can also see the difference between Force Structure (FS) BA and FS EPA on this chart. (If you are using Adjusted BA there will be no difference.) If there is much difference between FS BA and FS EPA, you can have the correct number of people to meet the EPA target, and still have too many or not enough to meet BA targets.

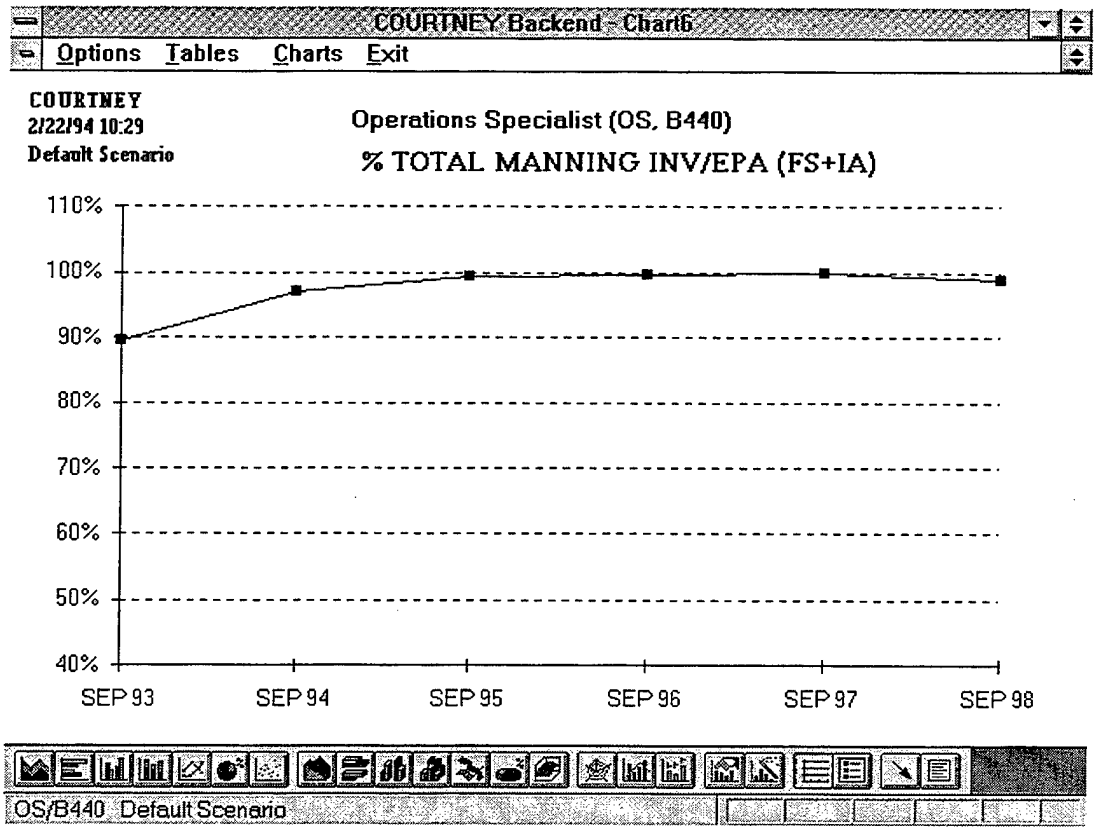
Percent Total SEA/SHORE/NEU Dist Manning



This chart plots the **projected sea, shore and neutral inventory as a percentage of the BA** (Actual or Adjusted depending on which has been selected in the "Options" menu). The percent **App** chart does the same thing for E-1—E-4 (Apprentice) projected inventory. The **percent Jou** is for E-5—E-6 (Journeyman) and **percent Sup** is for E-7—E-9 (Supervisor).

The **Apprentice, Journeyman, and Supervisor Percent Sea/Shore/Neutral Distributable Manning** charts are useful for quickly evaluating projected sea/shore staffing by **paygrade groups**. You can use the Optimization module to adjust tours to improve sea/shore staffing by paygrade.

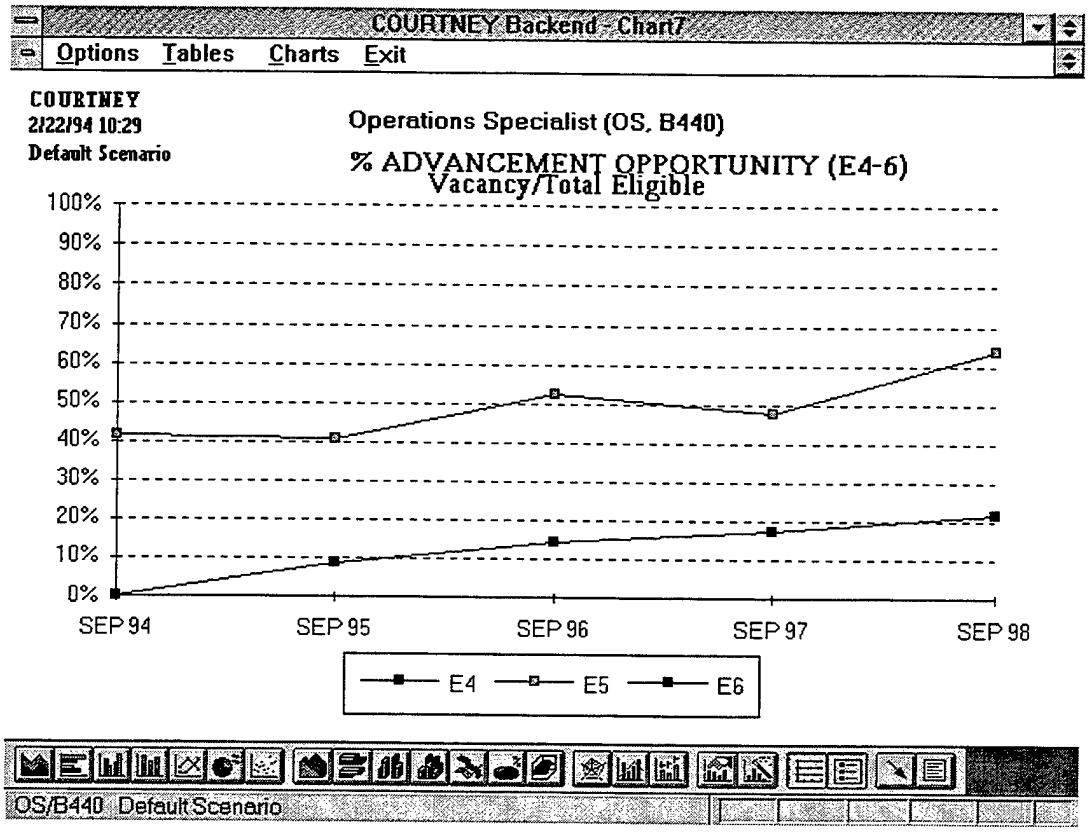
% Total Manning Inv/EPA (FS+IA)



This chart plots the total projected inventory (including IA) as a percentage of EPA. Check the **Percent Total Manning Inv/EPA** chart to see if COURTNEY thinks you are accessing the correct number of people. If you are using SKIPPER accessions, COURTNEY may project an inventory that is not very close to EPA. This could be because the SKIPPER projection was made with a different target (EPA) in mind, or because SKIPPER's continuation rates are different than COURTNEY's. If the COURTNEY projected inventory is much under EPA, both sea and shore staffing may be under 100 percent. If the projected inventory is much over EPA, both sea and shore staffing may be over 100 percent. If either is the case, it will be apparent on the **Total Distributable Manning** chart (see above).

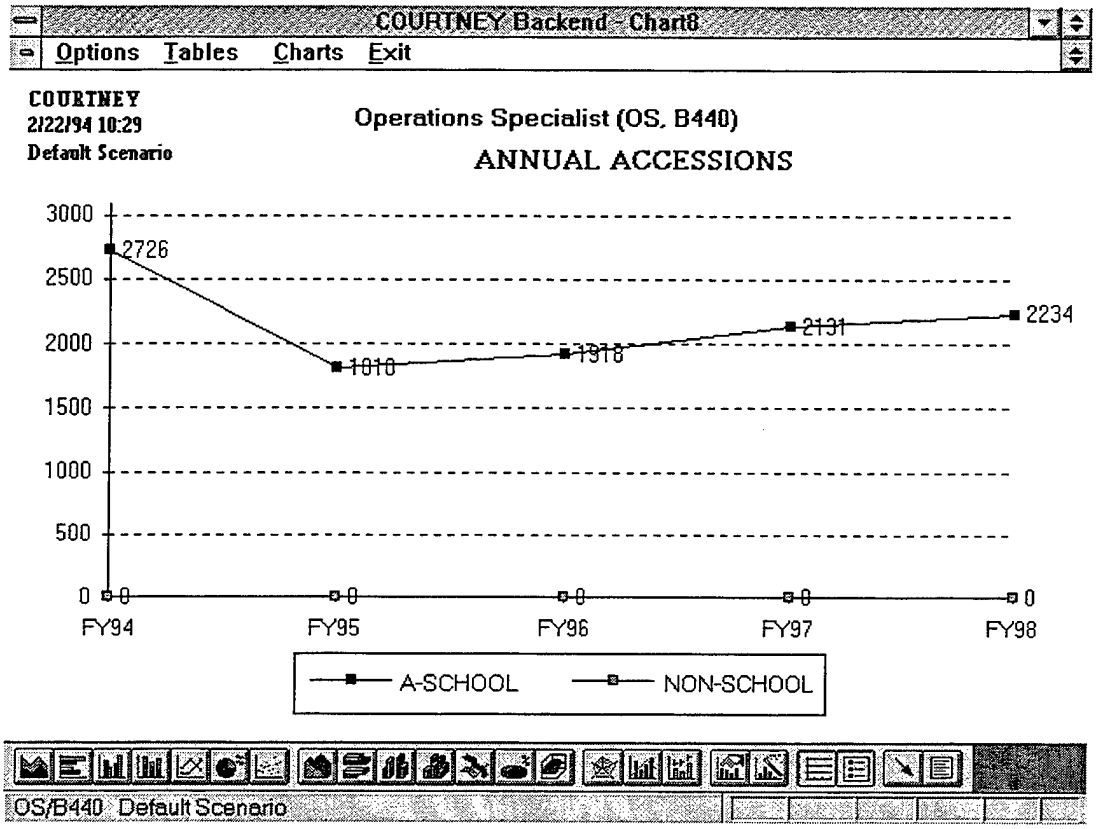
You can be relatively sure to get a COURTNEY inventory projection within 3 percent of EPA if you allow COURTNEY to determine the required number of accessions. To do this, go into the **Accession Factors** screen in the "Enter Data" module, and change the minimum and maximum accessions for each year so that the range is very wide (e.g. set minimum = 0 and maximum = 9999). After you do a Model run with this scenario, check the new **% Total Manning Inv/EPA** chart, and compare the new **Annual Accessions** chart with the old one to see the changes.

Percent Advancement Opportunity (E-4—E-6)



This chart plots the number of vacancies divided by the number of people eligible for advancement for each paygrade from E-4—E-6. In the example above, E-4 advancement opportunity is over 100 percent, so the plot for E-4 cannot be seen (it is off the top of the chart). There is a corresponding chart for **E-7—E-9** advancement opportunity.

Annual Accessions

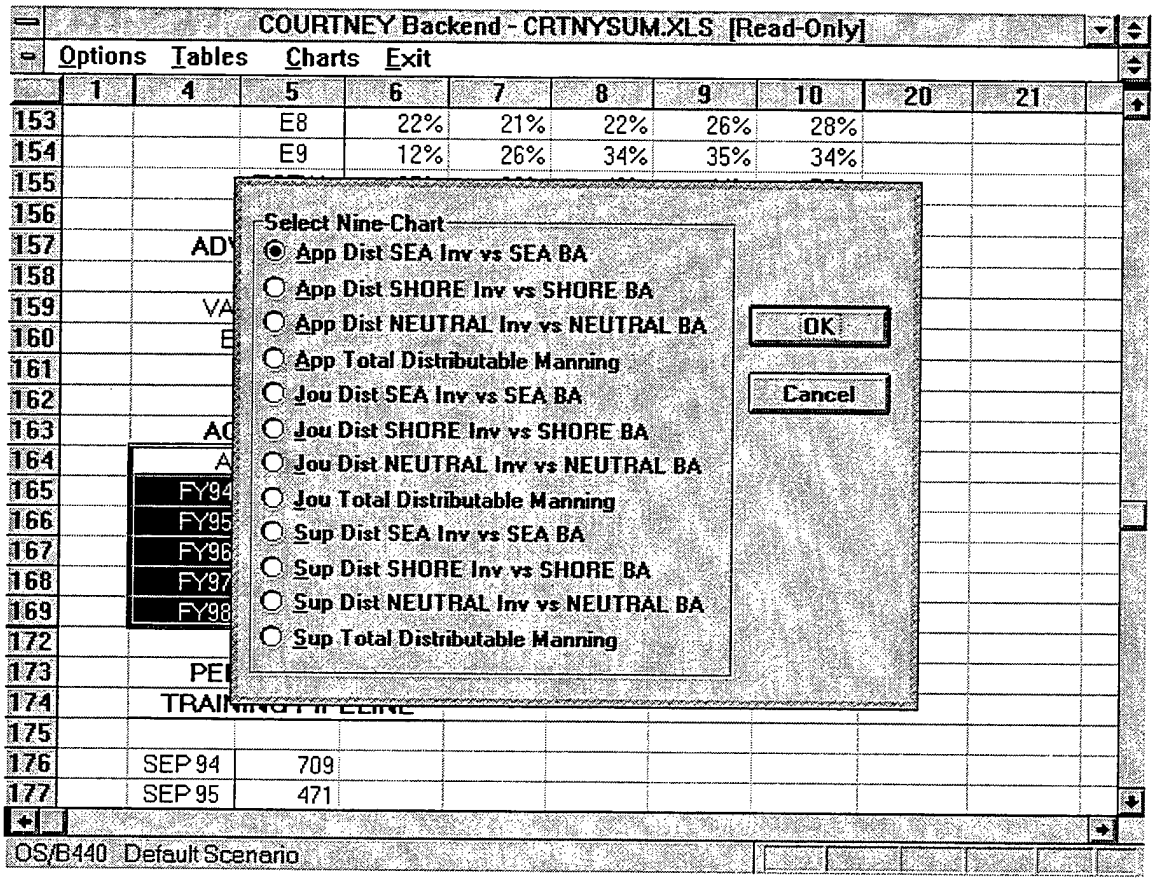


This chart plots the annual "A" school accessions and non-school gains used by the model. The non-school gains should be the same as those entered in the "Enter Data" module. The "A" school accessions should be within the range entered in the "Enter Data" module.

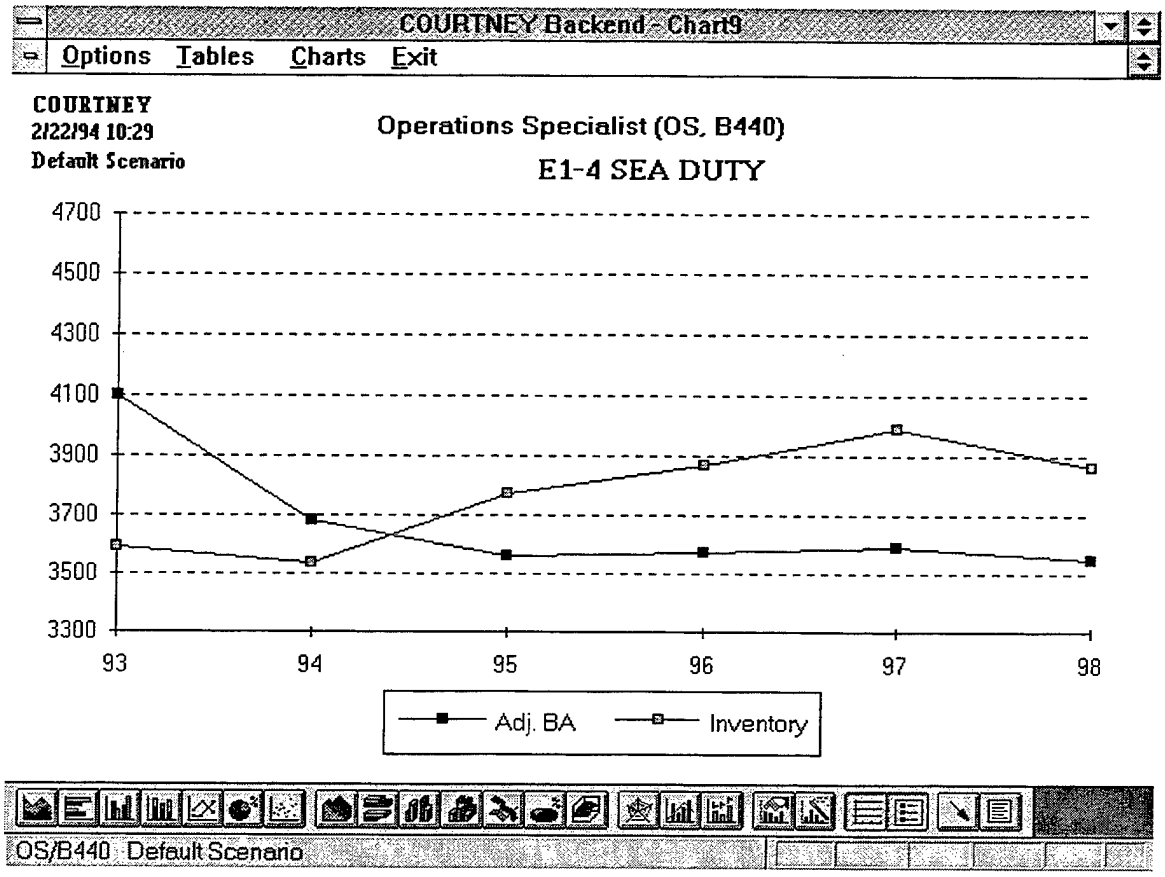
View Multiple Charts This option allows you to choose up to four individual charts to view on the screen at one time.

Print Charts If you select this option, all 12 individual charts will be printed.

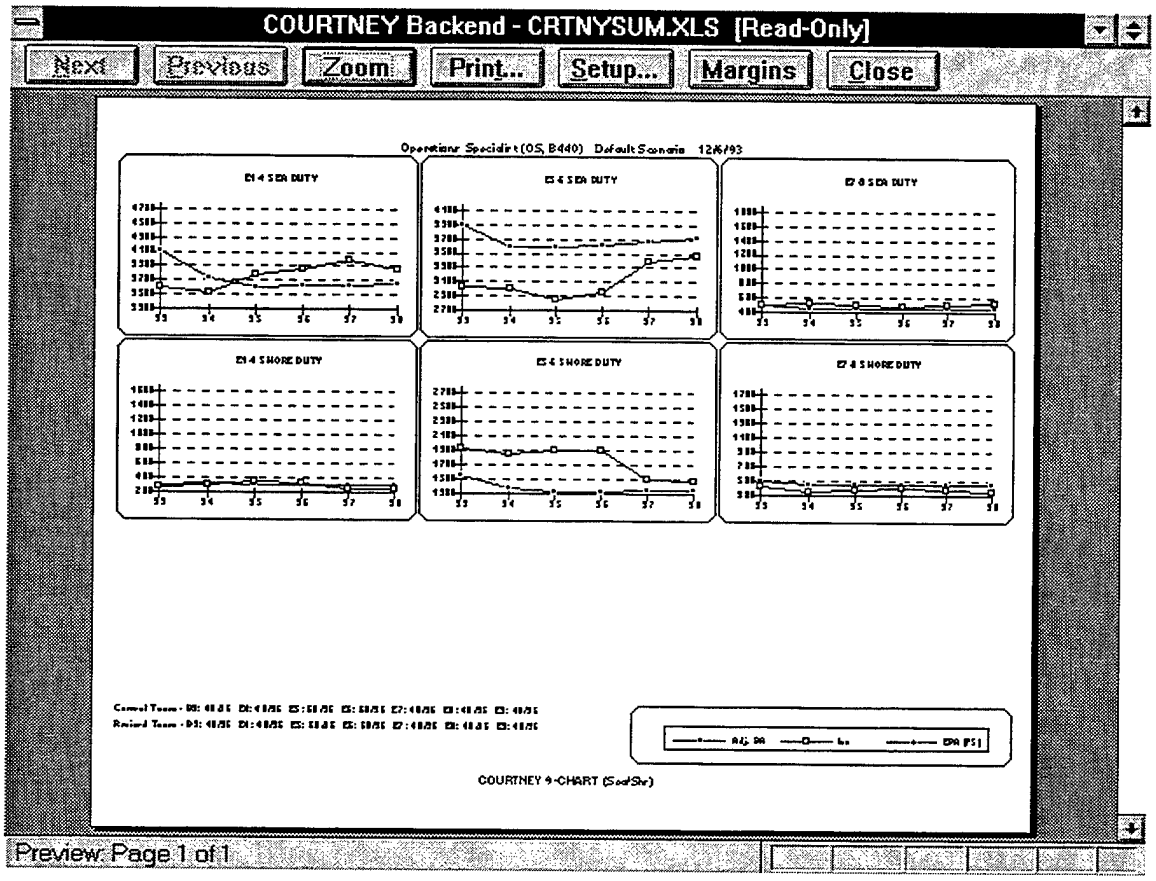
Select Nine-Chart This option allows you to individually view or print any of the 12 nine-charts.



Each of the nine-charts plots the projected inventory and BA (actual or adjusted) for a paygrade group (Apprentice, Journeyman, or Supervisor) and a type of duty (sea, shore, neutral, or total). An example:

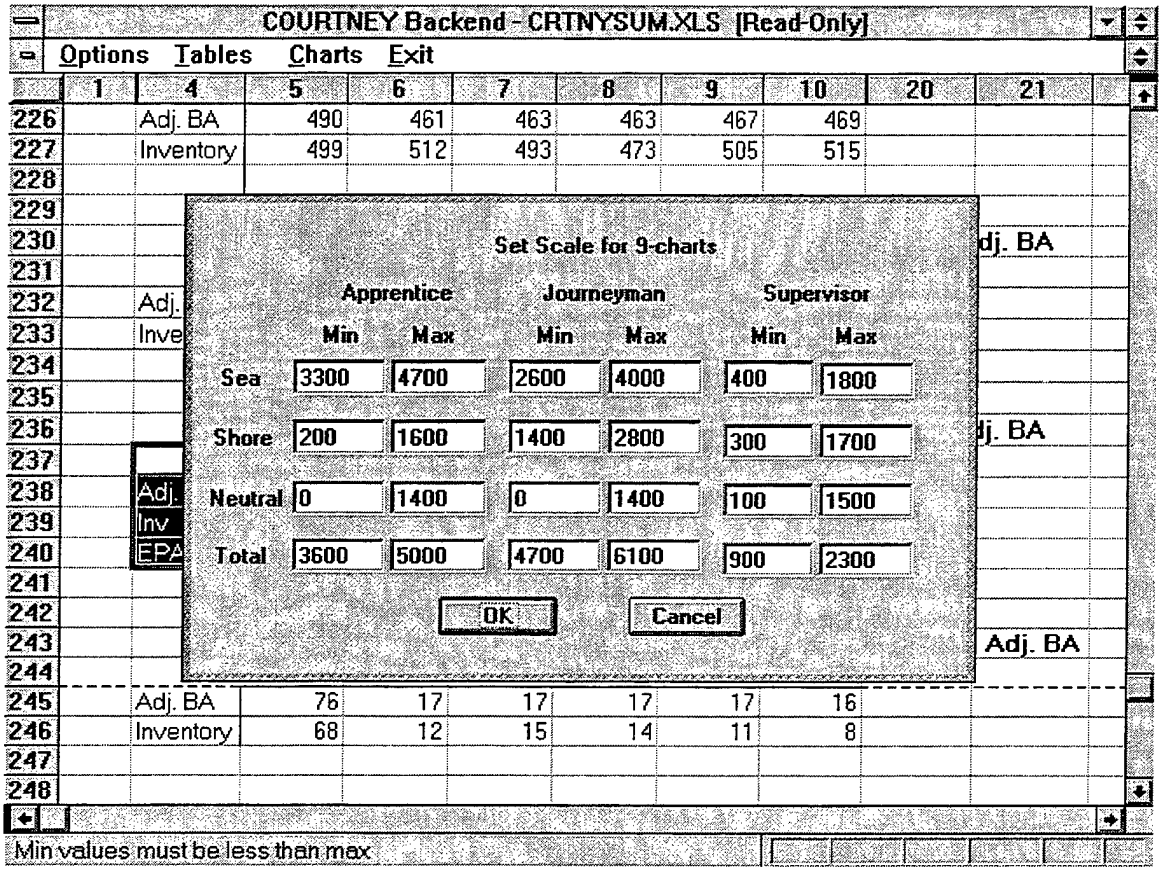


Generate Nine-Charts Selecting this option will cause the nine-charts to be put into a two-page display. This might take a minute. The first page will contain the six sea and shore charts by paygrade group, and the second page will contain the six neutral duty and total distributable inventory charts by paygrade group.



You will be given the option to print the first page while it is displayed, and then you will be given the option to print the second page. If you do not want to print the chart displayed, click on "Close."

Scale Nine Charts This option allows you to customize the scaling for each of the 12 nine-charts.



EXIT

Use this menu to **exit the "Display Results" module** and return to the Main Menu or to **exit the COURTNEY system** and return to the Windows environment.

THE INDIVIDUALS ACCOUNT (IA)

The Inventory table shows the actual IA inventory at the beginning of the first projection year, and projected IA for the following years. The IA projections are based primarily on the IA times which can be found on the Career Path Trees screen and the Time in IA screen in the COURTNEY Frontend. If an unrealistic number of EMC billets are allocated as IA billets, staffing problems can occur. For example, if there are too few IA billets, the IA will be overstaffed, and there will tend to be corresponding sea/shore understaffing. Similarly, if COURTNEY projects too many people in the IA, those people are not available for the sea/shore projection.

If the projected IA is not close to the IA shown in the EPA table, it is possible that the EPA IA is not realistic. Compare the actual beginning Inventory table IA with the beginning EPA table IA. If there is much of a difference between them, a change in training policy or a change in the IA targets may be in order. Also, outyear jumps in IA targets can cause IA staffing problems.

To check the IA projections, compare them with the beginning actual IA numbers. Keep in mind that the IA will increase or decrease with the total inventory. Also, the B-3 IA should increase or decrease roughly in proportion with changes in accessions.

The number of people who are projected in the IA for a paygrade will be roughly proportional to the IA time for LOS years that correspond to rotation points for the paygrade. For example, B-3's only rotate after A-school, so the B-3 IA is determined almost entirely by the additional IA after A-school on the Career Path Trees screen. Suppose this number is 2, and 50 B-3's are being projected in the IA for a particular year. If the additional IA months is increased to 4, then about 100 B-3's will be projected in the IA. If it is decreased to 1, then about 25 B-3's will be projected in the IA. The IA times are measured in months, so it is difficult to fine tune IA projections.

If you adjust the IA times on the Career Path Trees screen you can be sure the adjustment will occur at a rotation point and have some effect. The magnitude of the effect will depend on the percentage of the total inventory in the part of the Career Path Tree that is adjusted. Adjustments to the IA times in the Time in IA screen may not have an effect. For example, even a large change to the IA times in LOS 2 won't have much of an effect if few people are rotating in their second year.

As long as the IA error is small relative to the sea/shore staffing numbers, it won't cause a problem. If the difference between the projected IA and the IA you expect is large enough to cause a problem with the sea/shore staffing, you should try selectively adjusting the IA times on the Career Path Trees screen to improve the IA projections. If the problem occurs in the higher paygrades, you may need to adjust IA times on the Time in IA screen.

BILLET RATIOS

In general, there are two factors that undermine the usefulness of billet ratios in setting tour lengths. The first factor is the likelihood that a group of people will be starting on a particular tour at a particular point in their career. The second factor is the average time in service it takes to advance. An extreme example is the first sea tour. Nearly everyone starts their first sea tour during their first year in the Navy, and nearly everyone makes E-4 on that tour. In this case, the length of the tour has nothing to do with how many B-3s are at sea. It all depends on how many went to sea in the first place.

The effect of these factors is diminished over time as variations in rotation patterns and advancement time mix up the inventory. But as late as the fifth year, things might not be very well mixed yet. You might have a lot of people rotating to shore duty at about the same time as they make E-5. Let's suppose that it will take them 5 years to make E-6, and suppose the shore tour is fixed at three years. Then they will become E-6s after 2 years at sea. If the E-5 sea/shore billet ratio is more than 2 to 3, you will be inclined to increase the E-5 sea tour, but that won't get you any more E-5s at sea, since they all become E-6s after two years anyway. One way of getting around this problem is to combine the E-5 and E-6 billets, and use the same tour lengths for both paygrades.

Suppose you do that and get a sea/shore ratio of 5 to 3. You bite the bullet and give the E-5s and E-6s 5 year sea tours. When your E-6s are ready to rotate to shore they have three years in grade. Suppose most of them will make E-7 in the last year of their shore tour. Then the combination E-5s and E-6s have spent a total of five years on sea duty and more than five years on shore duty. Setting the tour lengths according to the ratios didn't result in staffing according to the ratios.

This example was probably difficult to follow, but it gives a clear illustration of the complexity of tour length/paygrade interactions and the danger of depending on billet ratios when setting tour lengths. You can generally use billet ratios to get fairly good estimates of appropriate tour lengths for higher paygrades by grouping them, but you cannot reliably predict the result without testing the proposed tours using COURTNEY.

Distribution List

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