

Users Manual

For



PILOT

(Plane Interface Link Object Tool)

Version 2.0

A Component of

SIGNAL

*(Simulation and Integration of
Ground, Network, and Air Links)*

Written by Duane A. Duke/AMI-800

August 2002

**Department of Transportation
Federal Aviation Administration
Mike Monroney Aeronautical Center
Oklahoma City, Oklahoma**

USA

1	OVERVIEW	1
2	WEB SITE	1
3	MENUS	2
3.1	FILE MENU.....	2
3.2	CONTROL MENU.....	3
3.2.1	Rewind Dialog.....	4
3.3	DATABLOCK MENU	5
3.4	DISPLAY MENU	6
3.4.1	Vertical display of S A I window	7
3.4.2	Horizontal display of S A I window.....	7
3.5	INTENSITIES MENU.....	8
3.6	MAP MENU.....	9
3.7	SYSTEM EVENT MENU.....	10
3.8	WEATHER MENU	11
3.8.1	Analog Weather	11
3.8.2	ASR-9 Weather	12
3.8.3	NEXRad Weather	12
3.9	VIEW MENU	13
3.10	HELP MENU.....	13
3.10.1	Help Me	14
3.10.2	Help Topics	15
3.10.3	Keyboard.....	16
3.10.4	About Pilot	16
4	TOOLBARS	17
4.1	EXERCISE CONTROL.....	17
4.2	ZOOM.....	17
4.3	FONT SIZES	18
4.4	INTENSITY.....	18
4.5	CENTER & OFF CENTER	18

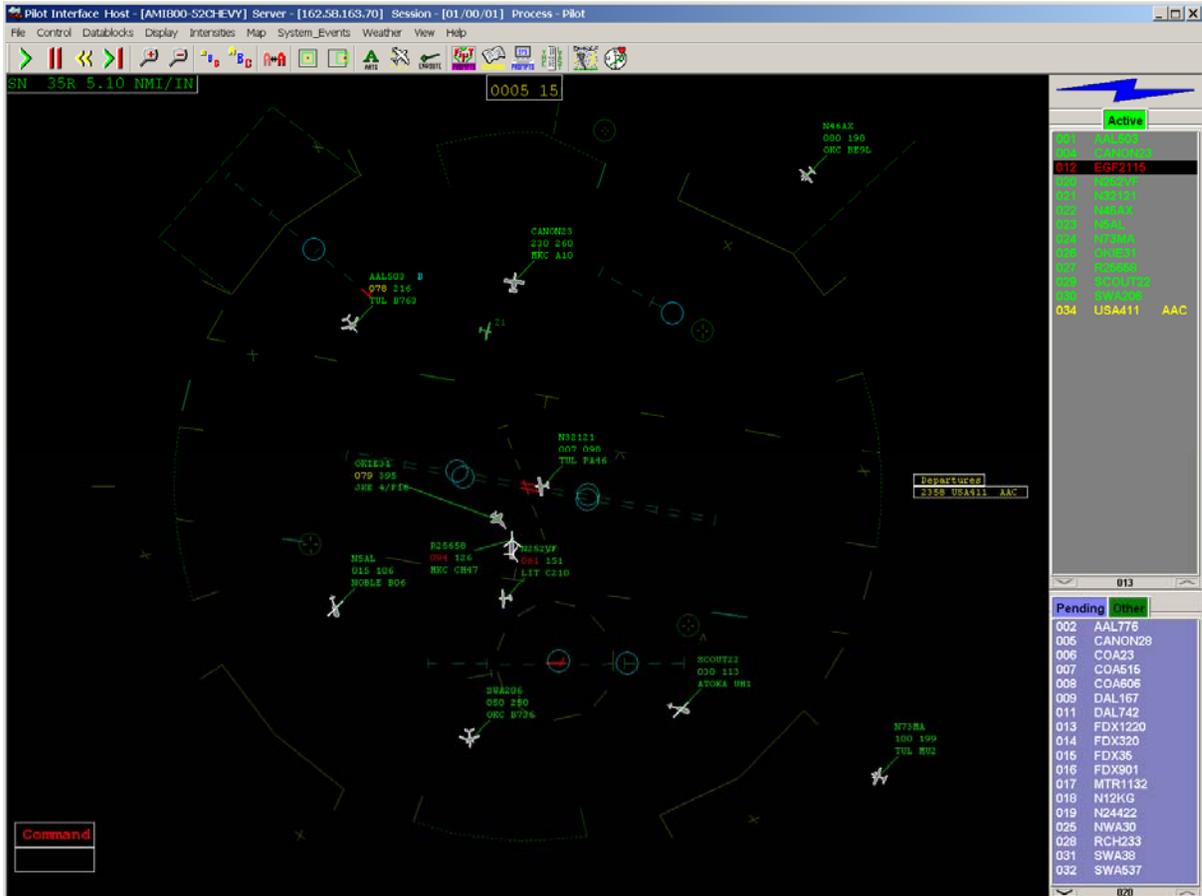
4.6	DATA BLOCK STYLE.....	19
4.7	PROMPTS.....	20
4.7.1	Pilot Prompts	20
4.7.2	System Prompts.....	20
4.7.3	Scenario Information.....	21
4.8	AIRCRAFT LIST	21
4.9	WEATHER	21
4.10	COMPASS ROSE.....	21
5	COMMAND SET	22
5.1	ADD FLIGHT	23
5.1.1	Add a Flight from Scratch	23
5.1.2	Duplicate a Flight	25
5.2	ALTITUDE COMMANDS	26
5.3	APPROACH COMMANDS	28
5.4	AT COMMANDS	29
5.5	BEACON COMMANDS	29
5.6	CANCEL FLIGHT COMMANDS.....	30
5.7	CLEARANCE ENTRY COMMANDS.....	30
5.8	CROSSING COMMANDS.....	31
5.9	DEPARTURE COMMANDS	31
5.10	EAC/EFC	32
5.11	EQUIPMENT QUALIFIER COMMANDS	32
5.12	FORMATION.....	33
5.13	FREQUENCY	33
5.14	GO_AROUND COMMANDS	33
5.15	HANDOFF COMMANDS.....	33
5.16	HEADING COMMANDS	34

5.17	HOLD_SHORT COMMANDS.....	36
5.18	POINT_OUT	36
5.19	POSITION_AND_HOLD COMMANDS	36
5.20	RADIO	37
5.21	REASSIGN COMMAND	37
5.22	REFERENCE FIX COMMANDS	37
5.23	REPORT	37
5.24	ROUTE COMMANDS	38
5.25	ROUTE_INTERCEPT COMMANDS	39
5.26	SET OWNERSHIP	39
5.27	SPEED COMMANDS.....	39
5.28	SPIN COMMANDS	41
5.29	TAKE_OFF COMMANDS	42
5.30	TAXI COMMANDS	42
6	MOUSE FUNCTIONS.....	42
6.1	AIRCRAFT SELECTION	43
6.2	RANGE BEARING	44
6.3	ROUTE OF FLIGHT DISPLAY	45
6.4	DATA BLOCK OFFSET.....	46
7	DISPLAY WINDOWS.....	46
7.1	DISPLAY WINDOW MOVEMENT	46
7.2	AIRCRAFT LIST WINDOW	47
7.2.1	Aircraft List Layout	48
7.2.2	Aircraft List Color Coding	48
8	AIRCRAFT DATA BLOCKS.....	49

9	CASCADE COMMAND MENUS.....	50
9.1	ACTIVE CASCADE COMMAND MENU.....	51
9.1.1	Altitude Menus.....	52
9.1.2	Heading Menus.....	53
9.1.3	Speed Menus.....	55
9.1.4	Multiple Menu.....	56
9.1.5	Approach Menus.....	57
9.1.6	Handoff Command.....	58
9.1.7	Advanced Commands.....	59
9.1.7.1	At Commands.....	60
9.1.7.2	Beacon Menus.....	63
9.1.7.3	Clearance Limit Menus.....	64
9.1.7.4	Crossing Restriction Menus.....	65
9.1.7.5	Formation Flight Menus.....	67
9.1.7.6	Frequency Menus.....	68
9.1.7.7	Radio.....	69
9.1.7.8	Reference Fix Menus.....	70
9.1.7.9	Report Menus.....	71
9.1.7.10	Route Intercept Menus.....	72
9.1.7.11	Set Ownership to Sector.....	73
9.1.7.12	Spin Menus.....	74
9.1.8	Display Route.....	75
9.1.9	Display Vector.....	75
9.1.10	Cancel Flight.....	76
9.2	INACTIVE CASCADE COMMAND MENU.....	77
9.2.1	Add a Flight.....	78
9.2.2	Departure.....	79
9.2.2.1	Depart.....	79
9.2.2.2	Depart Direction.....	80
9.2.2.3	Depart Resume.....	80
9.2.2.4	Depart Cancel.....	80
9.2.3	Controls.....	81
9.2.4	Datablocks.....	81
9.2.5	Display.....	81
9.2.6	Intensities.....	81
9.2.7	Map.....	81
9.2.8	Select Aircraft.....	82

1 Overview

This document covers the features and functions that make up the Pilot interface.

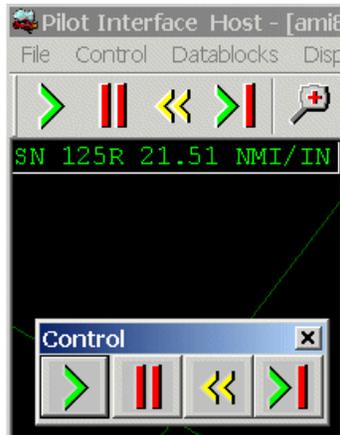


Pilot is a component of the SIGNAL software system of air traffic simulations written by AMI-800 in support of the FAA Academy in Oklahoma City, Oklahoma.

2 Web Site

Information about Pilot and the other components of the SIGNAL software system can be found on our web site @ WWW.SIGNAL.JCCBI.GOV.

3.2 Control Menu

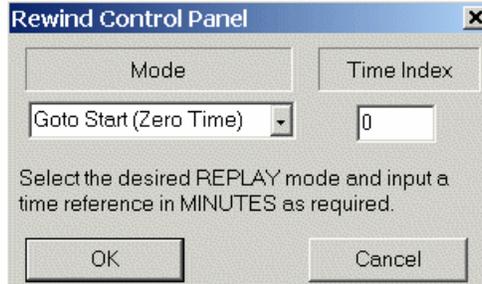


003

Button	Function
Play (>)	This button starts the simulation.
Pause ()	This button pauses the simulation.
Rewind (<<)	This button allows the rewinding of an exercise. Section 3.2.1 shows this function. The scenario must be paused in order to execute is mode.
Replay (>)	This button starts the replay.

3.2.1 Rewind Dialog

Selecting the Rewind icon will force the display of the following window:



004

Mode

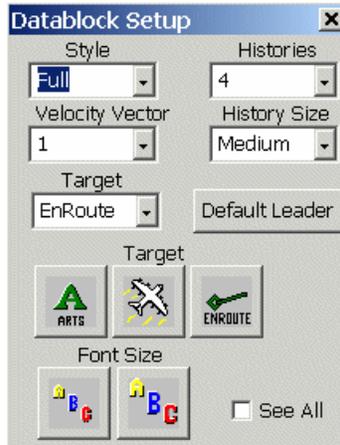
The choices are:

- | | |
|------------------|---|
| Goto Start | This will rewind the scenario back to time 00 |
| Goto Minute | This will allow the user to rewind the scenario to a number of minutes from the start of the problem |
| Minutes From End | This will allow the user to rewind the scenario to a number of minutes prior to the point the scenario was paused |

Time Index

The **Time Index** is in minutes

3.3 Datablock Menu

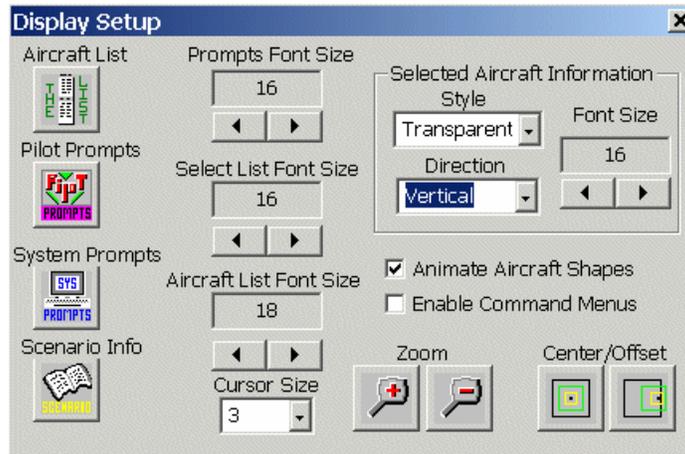


005

Button	Function
Style	This allows the data blocks that are assigned to the pilot to be shown as full or limited data blocks.
Velocity Vector	This allows the display of a velocity vector. Options are Not Set, 1, 2, 4 & 8 minutes. Default for terminal is Not Set and for EnRoute is 1 minute.
Target	This allows the target symbol to be changed. Options are ARTS, EnRoute and Aircraft. Default for terminal is ARTS and for EnRoute is EnRoute.
Histories	This allows the display of aircraft flight path histories. Options are Not Set and 1-10. Default is 4.
History Size	This allows the size of the displayed histories to be set. Options are Small, Medium and Large. Default is Medium.
Default Leader	This button resets all datablock back to the original leader length and orientation. Default is Northeast position.
Font Size	This allows the size of the datablock font to be set. Default is 16pt.
See All	When selected, Aircraft assigned to other pilots will be displayed in the same Style as the aircraft assigned to the pilot. This means that if the Style is set to Full then Full data blocks will be displayed for these targets.

3.4 Display Menu

This menu allows the control of the Selected AC Window & assignment of Position Function.



006

Button	Function
AC List	Toggles the display of the Aircraft List.
Pilot Prompts	Toggles the display of the Pilot Prompts.
System Prompts	Toggles the display of the System Prompts.
Scenario Info	Toggles the display of the Scenario Information.
Prompt Font Size	Allows the size of Pilot, System and Scenario Information to be set. Default is 16pt.
Select List Font	Allows the size of Inbound, Departure, Approach, Handoff, etc... to be set. Default is 16pt.
AC List Font Size	Toggles the display of the Aircraft List.
Cursor Size	Allows the size of the cursor to be set to one of 5 different sizes. Default is 3.
ANIMATE AIRCRAFT SHAPES	Allows the animation of aircraft targets.
ENABLE COMMAND MENUS	Allows the Pilot to use the Right mouse button to display a popup window and enter Pilot commands using the mouse.
Zoom	Allows the user to change the displayed map range by the zoom in (+) or zoom out (-) buttons.
Center/Offset	These functions control the center of the display and its location.
Selected Aircraft Information Area Items	
Style	This allows the selected aircraft window transparent or opaque. Default is Transparent.
Direction	This selects whether the selected aircraft information window is displayed Vertical or Horizontal. Default is Vertical.
Font Size	Allows the size of the Selected Aircraft Information to be set. Default is 16pt.

3.4.1 Vertical display of S A I window

The following visual is an example of the Selected Aircraft Information window in the vertical position:

```
Selected Aircraft Information
  AC: AAL301 B72Q/R 2214
  Alt: 230 GSpd: 420
  IASpd: 287 Mach: 0.69
  Hdg: 026
  Beacon: Okay
  Mode C: Okay
  Radio: Okay
  FAC/SEC: ZAE/O2
  Route: DFW.J107.MKC
  FixSlots: DROOP(206039)..MKC
  State: Active,On FPR
  CLCR Fix: MKC
  EFC:
  Ref Fix: TUL(090000)
  ETA: 0100 Time: E0000
```

007

3.4.2 Horizontal display of S A I window

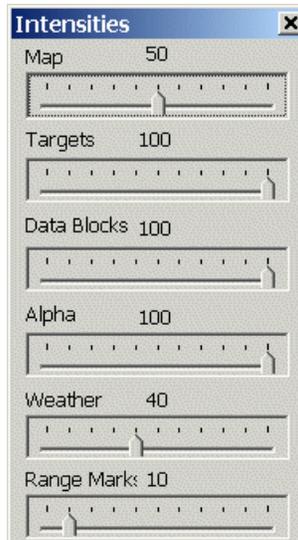
The following visual is an example of the Selected Aircraft Information window in the horizontal position:

```
Selected Aircraft Information
AAL301 B72Q/R 2214 Status: On FPR
Alt: 230 GSpd: 420 State: Active
IASpd: 287 Mach: 0.69 CLCR Fix: MKC
Hdg: 026 EFC:
Beacon: Okay Mode C: Okay Ref Fix: TUL(090000)
Radio: Okay ETA:0100
FAC/SEC: ZAE/O2 Pilot: 1
Route: DFW.J107.MKC
Fx SIts: DROOP(206039)..MKC
```

008

Note: Magenta is used to indicate the portion of the route of flight that has already been flown.

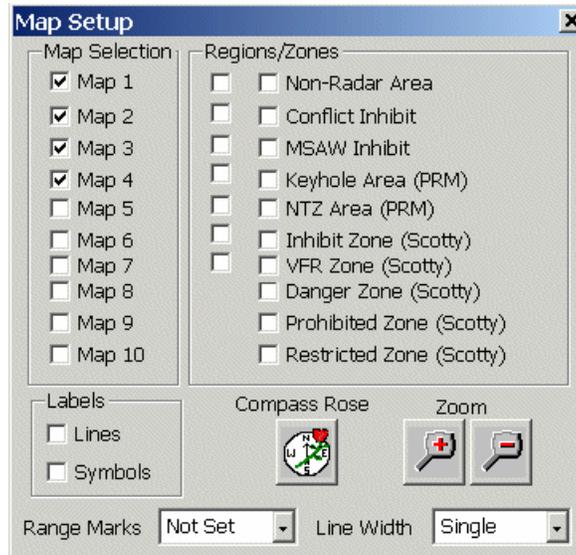
3.5 Intensities Menu



009

This menu allows the brightness of the objects on the display to be adjusted. **The settings range from 0 to 100 with 0 being the dimmest and 100 being the brightest.** The items that are displayed have been grouped logically to allow them to be changed with a single slider.

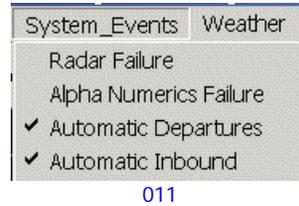
3.6 Map Menu



010

Button	Function
Map Selection	Allows the user to select any or all of the maps to be displayed.
Labels	Allows labels to be displayed on lines and symbol. This can be used as an airspace learning tool or quick reference for the Pilot.
Range Marks	Allows the user to display Range Marks and select the scale that they are to be displayed.
Regions/Zones	This area allows the Pilot to control the display of special areas that have been developed within the airspace.
Compass Rose	This allows the display of a Compass Rose. This may aid the Pilot in determining aircraft headings.
Zoom	Allows the user to change the range of the displayed map by the zooming in (+) or zooming out (-).
Line Width	This allows the user to select the desired line width. The options are Single or Double.

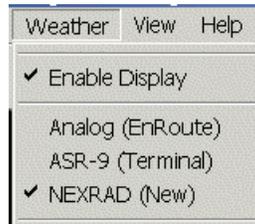
3.7 System Event Menu



This allows the Pilot to control the following:

Radar Failure	Will cause all aircraft targets to be dropped from the controller display.
Alpha Numeric Failure	Will cause all data blocks to be dropped from the controller display. Targets will still be displayed.
Automatic Departures	Will allow aircraft that are designated as Automatic Departures to depart without manual input.
Automatic Inbound	Controls whether inbound aircraft can enter the scenario automatically or require manual input.

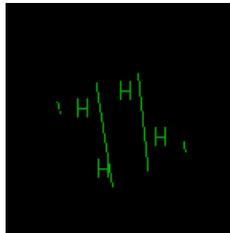
3.8 Weather Menu



012

This allows the users to display weather in different formats. The software has the ability to display the weather information as Analog, ASR-9, or NEXRad. The Enable Display allows the weather to be turned off/on as needed.

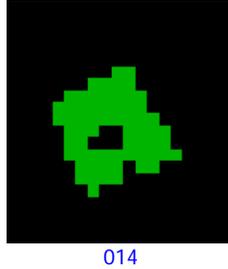
3.8.1 Analog Weather



013

This is the style of weather used in the Enroute environment. The weather pattern is a series of radials based on the location of the Radar antenna. "H"s are displayed to indicate heavy concentration of weather.

3.8.2 ASR-9 Weather

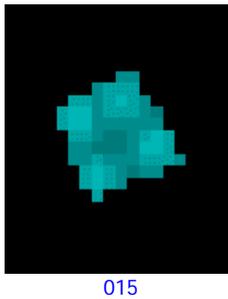


This is the style of weather used in the Terminal environment.

The weather pattern has three level of intensity:

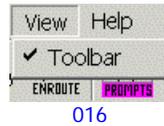
- Dark green shows light weather
- Not drawn is for medium weather
- Light green shows heavy weather

3.8.3 NEXRad Weather



NEXRad is the Next Generation of Doppler Weather. This pattern has 9 levels of brightness to show the different level of weather intensity.

3.9 View Menu



This allows the user to control the display of the toolbar. By default the Toolbar is displayed.

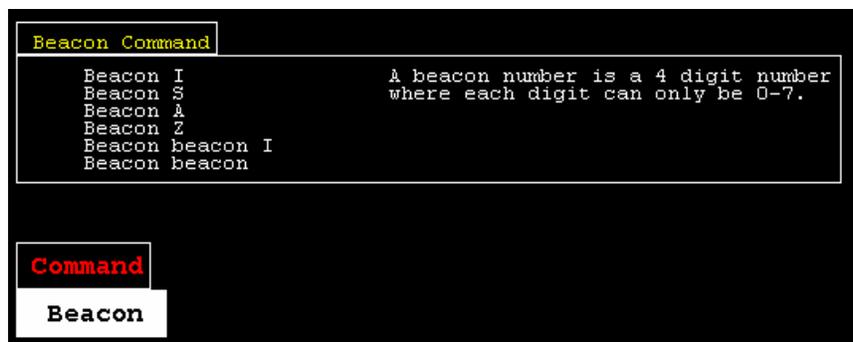
3.10 Help Menu



This menu allows the user access to areas that will provide immediate help for Pilot inputs and information. The Keyboard function allows the display of an image of the keyboard with the current Pilot template.

3.10.1 Help Me

This function, when selected, will allow interactive Pilot Command Help for the user. When the user selects a command button on the keyboard, a window will be displayed with an explanation of the command and all possible options that are available with that command.



018

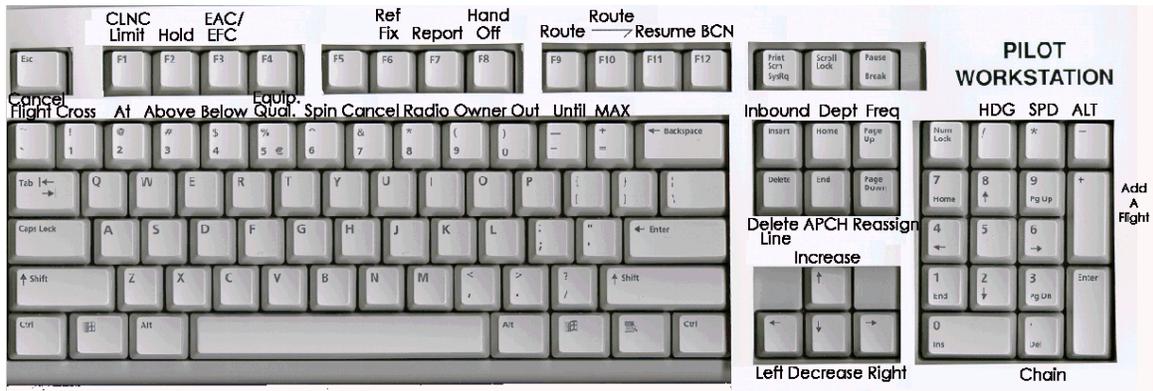
3.10.2 Help Topics



019

When Help Topics is selected from the pop down window, an HTML web version of the Pilot User Manual will be displayed. The user can browse through the manual or use the Table of Content to move to a specific topic.

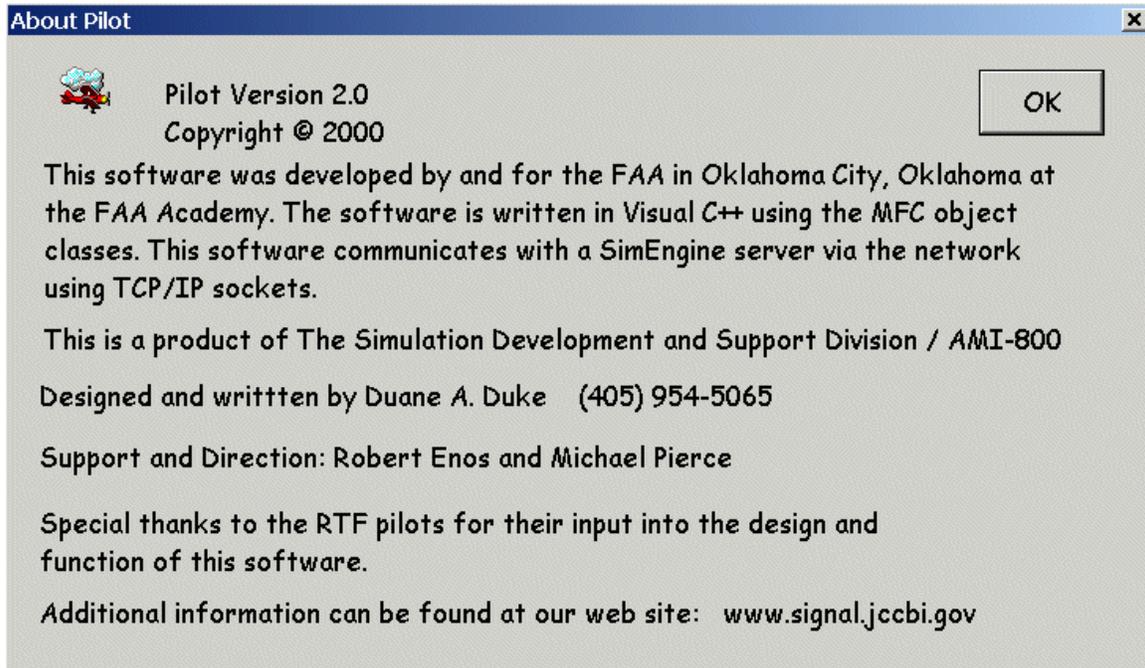
3.10.3 Keyboard



020

The Keyboard function allows the display of an image of the keyboard with the current template of Pilot Commands.

3.10.4 About Pilot



021

This function displays a brief description and history about the Pilot software.

4 Toolbars

The toolbar contains icons that the user can select to rapidly perform functions while running a scenario. The toolbar is displayed across the top of the program window under the main menus.



022

4.1 Exercise Control



023

These Exercise Control buttons control, from left to right:
Play Pause Rewind Replay

4.2 Zoom



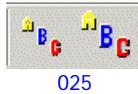
024

These buttons control the ability to zoom in and out:

The image with a + zooms in

The image with the – zooms out

4.3 Font Sizes



These buttons control the ability to increase or decrease the font size of the target data blocks:

The left image of "abc" decreases the font size

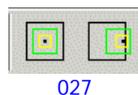
The right image of "ABC" increases the font size

4.4 Intensity



This allows the Pilot to toggled between displaying the Intensity Menu and not displaying the menu.

4.5 Center & Off Center



These functions control the center of the display and its location.

The icon on the left with the boxes centered will cause the display of the map to be centered at the default Center of Display.

The icon on the right with the boxes off centered will move the center of the display to a new location. When pressed, the cursor will be move to the center of the display. Moving the cursor will move the map until the left mouse button is clicked. The result will be a temporary offset of the display.

4.6 Data Block Style

The Pilot software has three styles to display the aircraft target symbol:

Arts DEDS/STARS style

Aircraft Shape

En Route PVD/DSR style

These buttons allow the data block style to be changed.



Arts



029

Aircraft



030

En Route



031

4.7 Prompts



032

The Pilot software has three types of Prompts:

Pilot

System

Scenario Information

These buttons act as a toggle, Up/Down, for the different lists.

4.7.1 Pilot Prompts

Pilot Prompts are used to notify the user of important changes/events on an aircraft. All prompts are time stamped and kept as a history for review.

If an aircraft is selected that does not have a new prompt, the prompt list will not be displayed automatically. The user must press the Pilot Prompt icon to display the prompt list.

When a prompt is received for an aircraft, a "P" is displayed in column 5 of the Aircraft List and the data block will begin to flash white. Once the aircraft is selected, the Prompt List will be automatically displayed and the prompt notification will stop.

4.7.2 System Prompts

System prompts are used to inform the user of changes to the simulation environment, such as a Radar being up/down, Weather display availability, Inter-Facility communication being up/down, etc.

When a new System Prompt is received, the list is automatically displayed.

4.7.3 Scenario Information

The Scenario Information Prompt is used to relay information to the Pilot in a more story form. This allows background/setup information to be sent to the pilot for review.

When a new Scenario Information Prompt is received, the window is automatically displayed to inform the user.

4.8 Aircraft List



033

This Icon functions as a toggle to control the display or not to display the Aircraft List.

4.9 Weather



034

This Icon function as a toggle to control the display or not to display Weather Cells.

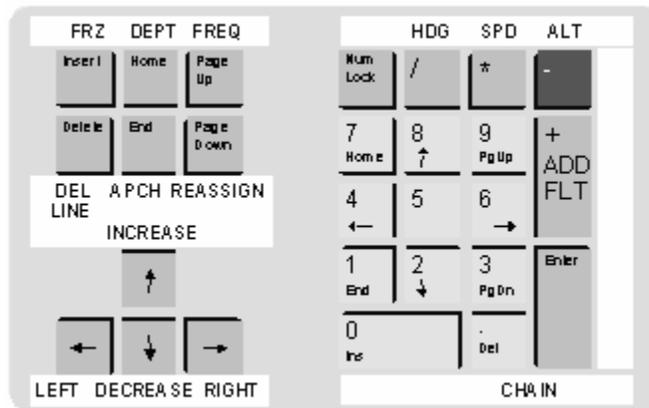
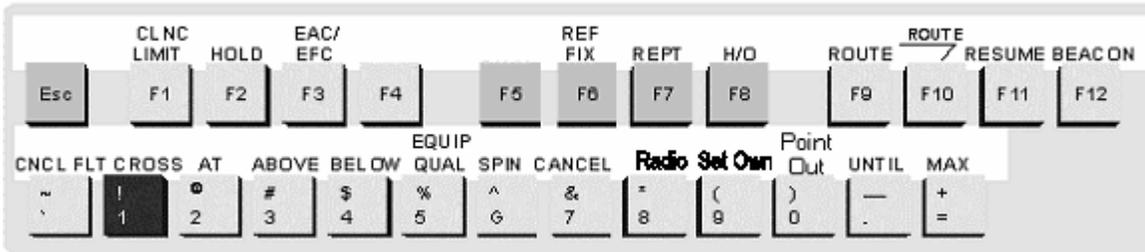
4.10 Compass Rose



035

This Icon function as a toggle to control the display or not to display the Compass Rose.

5 Command Set



The Pilot Commands have been assigned to the keyboard for ease of use.

All Pilot Commands except Add_A_Flight require that an aircraft be selected first.

5.1 Add Flight

The pilot software supports “On-The-Fly” flight plan creation. This means that new aircraft can be introduced into any scenario at anytime. To activate this function, press the “+” on the keypad and fill in the fields with the appropriate FDEP format information.

>>>These fields accept the standard FAA FDEP format descriptions.<<<<

036

The user can add a flight from scratch or duplicate a flight from an aircraft already in the scenario.

5.1.1 Add a Flight from Scratch

To Add a Flight from Scratch, all fields on the Flight Creation Tool window must be manually filled in:

A/C Identifier Must be a unique callsign.

Type A/C Once an aircraft type is entered, the software will default to the first Aircraft Characteristics found in the database for this type of aircraft.

Beacon Code This field is optional, but if entered, the code should be unique.

True Air Speed and Fix are self-explanatory.

Flight Type The options are Active or Proposal. The Pilot must manually depart a Proposal.

Time, Now + This field controls when the flight will enter the scenario. The time is calculated from the time the Create Flight button is selected.

Now Alt If this field is used, the aircraft will either climb or descend to the altitude entered in the Request Alt field.

Requested Alt, Route and Remarks are self-explanatory.

Facility/Sector If other than the active sector is selected, the Pilot must make a hand-off if the aircraft is to be controlled by the active sector.

Type of Creation **Route Beginning** – If this flight is created from scratch, the flight will initialize at the point entered in the Fix field.

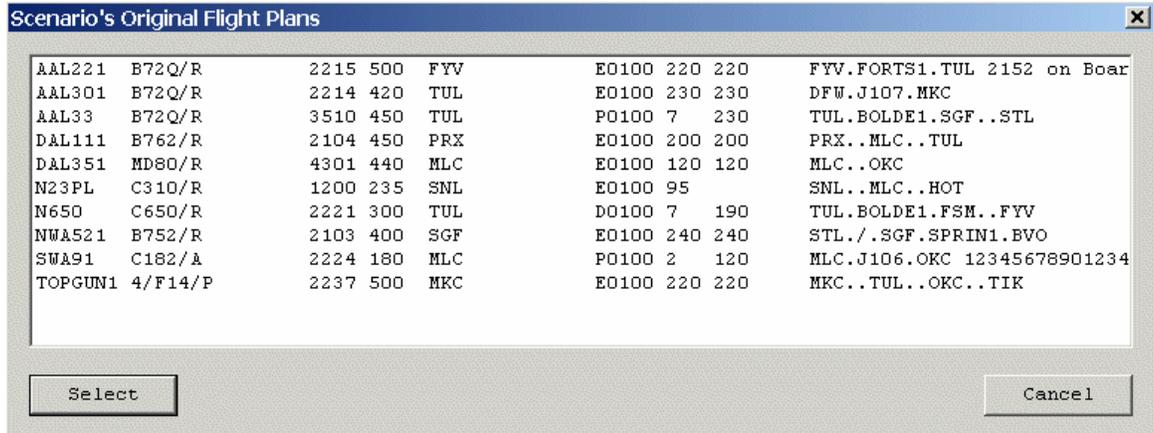
Using this option, the flight will initialize into the scenario at the next full minute after Create Flight is selected.

Present Position – This is only used if this flight is created from another flight already in the scenario.

Create Flight After all pertinent information has been entered; selecting this button will add the new flight to the simulation.

5.1.2 Duplicate a Flight

To Duplicate a flight already in the scenario, press the “Select a flight plan from the scenario.” Button. This will display a list of the aircraft in the scenario.



037

Selecting an aircraft from this list will automatically fill in most of the fields in the Flight Creation Tool window.

A unique AID must be entered.

A beacon code may be input, but is optional.

This will also duplicate all events in the original flight plan.

Type of Creation:

Route Beginning – If this flight is created from another flight already in the scenario, selecting this option will force the flight to be initialized at the point that the original flight entered the scenario.

Using this option, the flight will initialize into the scenario at the next full minute after Create Flight is selected.

Present Position – If this flight is created from another flight already in the scenario, selecting this option will force the flight to be initialized at the current location of the aircraft used to create the flight.

Using this option, the flight will initialize into the scenario immediately after Create Flight is selected.

5.2 Altitude Commands

Entry	Result
Altitude <i>Altitude</i>	Replaces the Assigned Altitude for an aircraft.
Altitude <i>Altitude Rate</i>	Replaces the Assigned Altitude for an aircraft using the Rate of change in 100's of feet/minute as input.
Altitude MAX	Aircraft will use its MAX rate to reach the Assigned Altitude.
Altitude MAX <i>Altitude</i>	Aircraft will use its MAX rate to reach the new Assigned Altitude.
Altitude <i>Altitude</i> Heading <i>Heading</i>	Once the altitude is reached, the heading event takes place.
Altitude <i>Altitude</i> Speed <i>Speed</i>	Once the altitude is reached, the speed event takes place.
Altitude <i>Altitude</i> Until <i>Fix</i> Altitude <i>Altitude2</i>	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets Altitude2 to be the New Altitude for the aircraft.
Altitude <i>Altitude</i> Until <i>Fix</i> Altitude MAX	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then uses the aircraft's MAX rate to reach the Assigned Altitude.
Altitude <i>Altitude</i> Until <i>Fix</i> Altitude MAX <i>Altitude2</i>	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets Altitude2 to be the New Altitude for the aircraft and uses the aircraft's MAX rate to reach the New Altitude.
Altitude <i>Altitude</i> Until <i>Fix</i> Speed <i>Speed</i>	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets a new speed for the aircraft.
Altitude <i>Altitude</i> Until <i>Fix</i> Speed H	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets the speed equal to the Holding Speed for the aircraft.
Altitude <i>Altitude</i> Until <i>Fix</i> Speed A	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets the speed equal to the Approach Speed for the aircraft.
Altitude <i>Altitude</i> Until <i>Fix</i> Heading <i>Heading</i>	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets a new heading for the aircraft.
Altitude <i>Altitude</i> Until <i>Fix</i> Heading Left <i>Heading</i>	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets a new heading for the aircraft and turns left to it.

Entry	Result
Altitude Until Fix Heading Right <i>Altitude Until Fix Heading</i>	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then sets a new heading for the aircraft and turns right to it.
Altitude Until Fix Heading Left	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then starts turning left.
Altitude Until Fix Heading Right	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the location, then starts turning right.
Altitude Until Fix Heading MAX	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then uses the aircraft's MAX rate to reach the Altitude.
Altitude Until Fix Heading number of degrees Left	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then turns left the number of degrees.
Altitude Until Fix Heading number of degrees Right	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, turns right the number of degrees.
Altitude Until Fix Approach V Runway	Replaces the Assigned Altitude for an aircraft, waits until the aircraft reaches the Fix location, then attempts a visual approach.
Altitude Increase 100s of feet	Uses the current altitude and increases it by the number of 100s of feet.
Altitude Decrease 100s of feet	Uses the current altitude and decreases it by the number of 100s of feet.

5.3 Approach Commands

Entry	Result
Approach Approach (Transition)	Press the Approach button and select from the list of valid approaches built for the destination airport. If Transitions exist for that Approach, a cascading menu will be displayed showing the Transitions. To fly one of the Transition simply select it from the list, otherwise just the Approach is flown.
Approach Cancel	If an aircraft is flying an approach, this causes the aircraft to execute a missed approach at the missed approach point.
Approach Cancel with Heading, Speed and/or Altitude instructions	If an aircraft is flying an approach, this causes the aircraft to execute a missed approach at the missed approach point using the instructions input with the command.

Note: If a list is not displayed, this aircraft is not routed to a valid airport. Reroute the aircraft to the desired valid airport and enter the approach instruction again.

Valid instructions are **Heading** *heading*, **Heading Right** *Heading*, **Heading Left** *heading*, **Heading** *number of degrees* **Right**, **Heading** *number of degrees* **Left**, **Speed** *speed*, **Altitude** *altitude*. These instructions can be entered in any order with the Approach Cancel command.

5.4 At Commands

These are conditional events. Any condition can be combined with any or all of the parameters. Once the conditional part of the command is met, the subsequent event will be executed. Duplication of parameters is not allowed.

Conditions
At Altitude <i>Altitude</i>
At Heading <i>Heading</i>
At Speed <i>Speed</i>
At FixSlot <i>Distance</i> (Distance is optional for FixSlot.)

Parameters
Heading <i>Heading</i>
Speed <i>Speed</i>
Altitude <i>Altitude</i>
Equipment_Qualifier <i>A-Z</i>
Radio <i>T or Radio R</i>
Beacon <i>Beacon</i>
Route <i>fp</i>
Cancel_Flight
Route_Intercept <i>(fix)</i> <i>optional</i>

5.5 Beacon Commands

Entry	Result
Beacon I	Causes an aircraft to ident.
Beacon <i>Beacon I</i>	Replaces the existing beacon code for an aircraft and causes the aircraft to ident.
Beacon <i>Beacon</i>	Replaces the existing beacon code for an aircraft.
Beacon S	Toggles the beacon for an aircraft on or off.
Beacon A	Toggles the Mode C for an aircraft on or off.
Beacon Z	Toggles the radar failure for the aircraft.

5.6 Cancel Flight Commands

Entry	Result
Cancel_Flight	Removes an aircraft from the simulation.

5.7 Clearance Entry Commands

Entry	Result
Clearance_Limit <i>Fix</i>	Changes the Clearance Limit on the pilot display.
Clearance_Limit <i>Fix</i> STAR <i>Star</i>	Changes the Clearance Limit on the pilot display and expands the route for the aircraft to include all the fixes contained in the STAR.
Clearance_Limit <i>Fix</i> Hold Left	Changes the clearance limit on the pilot display, and when the aircraft reaches the Fix, the aircraft will enter a Left holding pattern.
Clearance_Limit <i>Fix</i> Hold Right	Changes the clearance limit on the pilot display, and when the aircraft reaches the Fix, the aircraft will enter a Right holding pattern.
Clearance_Limit <i>Fix</i> Hold <i>Direction</i>	Changes the clearance limit on the pilot display, and when the aircraft reaches the Fix, the aircraft will enter a holding pattern for the direction specified. Direction: N=North, S=South, E=East, W=West, NE=Northeast, NW=Northwest, SE=Southeast, SW=Southwest
Clearance_Limit <i>Fix</i> Hold <i>Direction</i> Left	Changes the clearance limit on the pilot display, and when the aircraft reaches the Fix, the aircraft will enter a holding pattern for the direction specified with Left turns. Direction: N=North, S=South, E=East, W=West, NE=Northeast, NW=Northwest, SE=Southeast, SW=Southwest
Clearance_Limit <i>Fix</i> Hold <i>Direction</i> Right	Changes the clearance limit on the pilot display, and when the aircraft reaches the Fix, the aircraft will enter a holding pattern for the direction specified with Right turns. Direction: N=North, S=South, E=East, W=West, NE=Northeast, NW=Northwest, SE=Southeast, SW=Southwest

5.8 Crossing Commands

Entry	Result
Cross Fix At Altitude <i>Altitude Speed Speed</i>	Causes aircraft to decrease/increase altitude and speed to the specified values At or prior to crossing over the Fix.
Cross Fix At Altitude <i>Altitude</i>	Causes aircraft to decrease/increase altitude to the specified values At or prior to crossing over the Fix.
Cross Fix At Speed <i>Speed</i>	Causes aircraft to decrease/increase speed to the specified values At or prior to crossing over the Fix.
Cross Fix At Time	Causes aircraft to reach the fix at the stated time.
Cross Fix Above Altitude <i>Altitude Speed Speed</i>	Causes aircraft to cross over the Fix Above the specified Altitude at the specified speed.
Cross Fix Below Altitude <i>Altitude Speed Speed</i>	Causes aircraft to cross over the Fix Below the specified Altitude at the specified speed.
Cross Fix Above Altitude <i>Altitude</i>	Causes aircraft to cross over the Fix Above the specified Altitude.
Cross Fix Below Altitude <i>Altitude</i>	Causes aircraft to cross over the Fix Below the specified Altitude.
Cross Fix Above Speed <i>Speed</i>	Causes aircraft to cross over the Fix Above the specified speed.
Cross Fix Below Speed <i>Speed</i>	Causes aircraft to cross over the Fix Below the specified speed.

5.9 Departure Commands

Entry	Result
Depart	Causes an aircraft waiting for departure to begin takeoff and ascent from airport.
Depart <i>Direction</i>	Causes an aircraft waiting for departure to begin takeoff and ascent from airport. After reaching altitude and speed, the aircraft turns the direction set and goes on vector. Direction: N=North, S=South, E=East, W=West, NE=Northeast, NW=Northwest, SE=Southeast, SW=Southwest
Depart Resume	Resumes automatic departures of aircraft that have a D#### time.
Depart Cancel	Stops automatic departures of aircraft that have a D#### time.

5.10 EAC/EFC

Entry	Result
EAC/EFC <i>Time</i>	Set the EAC/EFC to the specified Time.

5.11 Equipment Qualifier Commands

Entry	Result
Equipment Qualifier <i>Code</i>	Causes the equipment qualifier of an aircraft to be changed to the new Code input. Code is single letter A-Z.

Airborne Equipment Qualifiers

<u>No Transponder</u>	<u>Transponder no Mode C</u>	<u>Transponder with Mode C</u>
X	T	U
D	B	A
M	N	P
Y	C	I
		E
		F
		G
		R
		W
		Q

The following codes (I, E, F, G, W, Q) were added to the Transponder Mode C column to bring it inline with the ICAO standards.

5.12 Formation

Entry	Result
Formation Aid Aid...	If an aircraft is selected that is a formation flight, a window will be displayed that lists all other aircraft in the formation. With NO command on the command line, select as many of the flights in the list as desired to break out and press enter. A new flight will be generated with these aircraft. The name of the flight will be the name of the selected flight that is closest to the top of the list.
Formation Aid Altitude <i>Altitude</i>	This command does not break out a flight. It does set an Altitude event that will be processed when the flight is broken out.
Formation Aid Beacon <i>Beacon</i>	This command does not break out a flight. It does set a Beacon event that will be processed when the flight is broken out.
Formation Aid Heading <i>Heading</i>	This command does not break out a flight. It does set a Heading event that will be processed when the flight is broken out.
Formation Aid Speed <i>Speed</i>	This command does not break out a flight. It does set a Speed event that will be processed when the flight is broken out.

5.13 Frequency

Entry	Result
Frequency	Frequency to another station
Frequency At Fix	Frequency to another station upon reaching a fix.

5.14 Go_Around Commands

Entry	Result
Go_Around	This command is only used with T2D. This causes the selected aircraft to fly a go around pattern.

5.15 Handoff Commands

Press the Handoff button and select from the list of valid sectors. You may not handoff to the sector that already owns the aircraft.

5.16 Heading Commands

Entry	Result
Heading	An aircraft that is turning will stop turning and continue on its present heading.
Heading <i>Heading</i>	Causes an aircraft to turn to the Assigned Heading. Heading: Range 0 to 360
Heading Left <i>Heading</i>	Causes an aircraft to turn left to the Assigned Heading. Heading: Range 0 to 360
Heading Right <i>Heading</i>	Causes an aircraft to turn right to the Assigned Heading. Heading: Range 0 to 360.
Heading Left	Causes an aircraft to start turning left.
Heading Right	Causes an aircraft to start turning right.
Heading <i>number of degrees</i> Left	Causes an aircraft to turn left heading number of degrees specified. Heading: Range 0 to 360.
Heading <i>number of degrees</i> Right	Causes an aircraft to turn right heading number of degrees specified. Heading: Range 0 to 360.
Heading MAX	Causes an aircraft to use the MAX turn rate during the turn.
Heading Until <i>Time</i>	Causes an aircraft to maintain current heading until specified time, then prompts the pilot to request further instructions. Time: Range is 0 to 2359.
Heading <i>Heading Until</i> <i>Time</i>	Causes an aircraft to turn to the heading and maintain that heading until specified time, then prompts the pilot to request further instructions. Time: Range is 0 to 2350.
Heading Until <i>Fix</i>	Causes an aircraft to maintain heading until reaching specified Fix, then prompts the pilot to request further instructions.
Heading <i>Heading Until</i> <i>Fix</i>	Causes an aircraft to turn to the heading and maintain that heading until reaching the specified Fix, then prompts the pilot to request further instructions. Heading: Range is 0 to 360.
Heading Until <i>Altitude</i>	Causes an aircraft to maintain heading until reaching the specified altitude, then prompts the pilot to request further instructions. Heading: Range is 0 to 360. Altitude: Range is 0 to upper legal altitude for this aircraft.
Heading <i>Heading Until</i> <i>Altitude</i>	Causes an aircraft to turn the heading and maintain that heading until reaching the specified altitude, then prompts the pilot to request further instructions.
Heading <i>Heading</i> <i>Altitude</i>	This is a do then do command. Once the heading is accomplished then an altitude event is issued.
Heading <i>Heading</i> <i>Speed</i>	This is a do then do command. Once the heading is accomplished then a speed event is issued.

Entry	Result
Heading Left <i>Heading</i> Altitude <i>Altitude</i>	This is a do then do command. Once the heading is accomplished then an altitude event is issued. Causes an aircraft to turn left to the Assigned Heading. Heading: Range 0 to 360.
Heading Right <i>Heading</i> Altitude <i>Altitude</i>	This is a do then do command. Once the heading is accomplished then an altitude event is issued. Causes an aircraft to turn right to the Assigned Heading. Heading: Range 0 to 360.
Heading <i>Heading Left</i> Altitude <i>Altitude</i>	This is a do then do command. Once the heading is accomplished then an altitude event is issued. Causes an aircraft to turn left heading number of degrees specified. Heading: Range 0 to 360.
Heading <i>Heading Right</i> Altitude <i>Altitude</i>	This is a do then do command. Once the heading is accomplished then an altitude event is issued. Causes an aircraft to turn right heading number of degrees specified. Heading: Range 0 to 360.
Heading Left <i>Heading</i> Speed <i>Speed</i>	This is a do then do command. Once the heading is accomplished then a speed event is issued. Causes an aircraft to turn left to the Assigned Heading. Heading: Range 0 to 360.
Heading Right <i>Heading</i> Speed <i>Speed</i>	This is a do then do command. Once the heading is accomplished then a speed event is issued. Causes an aircraft to turn right to the Assigned Heading. Heading: Range 0 to 360.
Heading <i>number of degrees</i> Left Speed <i>Speed</i>	This is a do then do command. Once the heading is accomplished then a speed event is issued. Causes an aircraft to turn left heading number of degrees specified. Heading: Range 0 to 360.
Heading <i>number of degrees</i> Right Speed <i>Speed</i>	This is a do then do command. Once the heading is accomplished then a speed event is issued. Causes an aircraft to turn right heading number of degrees specified. Heading: Range 0 to 360.

Note: The variables *Heading* and *Altitude* are 3 digit numbers. The variable *Time* is a 4-digit number. The variable *Fix* must be a valid name found in the database.

5.17 Hold_Short Commands

Entry	Result
Hold_Short	This command is only used with T2D to control movement of the aircraft on the ground. Hold_Short is used to stop the aircraft and Taxi is used to move the aircraft.
Hold_Short <i>Runway</i>	This command is only used with T2D to control movement of the aircraft on the ground. Hold_Short is used to stop the aircraft and Taxi is used to move the aircraft. This version of the command will stop the aircraft before entering the <i>Runway</i> .
Hold_Short <i>Taxiway</i>	This command is only used with T2D to control movement of the aircraft on the ground. Hold_Short is used to stop the aircraft and Taxi is used to move the aircraft. This version of the command will stop the aircraft before entering the <i>Taxiway</i> .
Hold_Short Cancel	This command is only used with T2D to control movement of the aircraft on the ground. Hold_Short is used to stop the aircraft and Taxi is used to move the aircraft. This version of the command will cancel any previous Hold_Short input.

5.18 Point_Out

Press the Point_Out button and select from the list of valid sectors. This function is used to force a full data block up on the controller display.

5.19 Position_And_Hold Commands

Entry	Result
Position_And_Hold	This command is only used with T2D. This causes the selected aircraft to proceed down its route until it reaches a DEPT <i>runway</i> fixslot.

5.20 Radio

Entry	Result
Radio T	Toggles the Radio transmitter between Failed and Okay.
Radio R	Toggles the Radio receiver between Failed and Okay.

5.21 Reassign Command

Entry	Result
Reassign	Move an aircraft from one aircraft list to the other. See the Aircraft List Window section for additional information.

5.22 Reference Fix Commands

Entry	Result
Reference_Fix Fix	Establishes the specified Fix as the Reference Fix.
Reference_Fix L	Establishes the last Fix in the route of the aircraft as the reference fix.
Reference_Fix N	Establishes the next Fix in the route of the aircraft as the reference fix.
Reference_Fix C	Establishes the Clearance Limit Fix as the Reference Fix.

5.23 Report

Entry	Result
Report L Altitude	Report leaving altitude.
Report R Altitude	Report reaching altitude.
Report L	Report leaving current altitude.
Report H	Report Handoff.
Report Fix	Report reaching the fix.
Report P Prompt	Used for single word prompts. Generates a Pilot Prompt.

5.24 Route Commands

Entry	Result
Route <i>FP</i>	Changes the filed flight plan based on the route described in parameter <i>FP</i> . The parameter <i>FP</i> must be in FDEP format.
Route (<i>Mouse Clicks</i>) <i>FP</i>	Changes the filed flight plan based on the route described by the <i>Mouse Clicks</i> . The route is input using the left button on the mouse to click the route of the aircraft. Then a valid FDEP format input is required to complete the route command. The parameter <i>FP</i> must be in FDEP format.

This is an example of an FDEP format input.



038

Once the Route button is pressed, the mouse can be used to input part of the new route of the aircraft. This method of route input is useful when trying to fly around a weather area.

This is an example of the results of using mouse entries to modify an aircrafts Route of flight.



039

To complete the route entry, you must enter the remaining portion of the route of flight all the way to destination.

5.25 Route_Intercept Commands

Entry	Result
Route_Intercept <i>Fix</i> Clearance_Limit <i>Fix</i>	New clearance limit set by the second Fix. The aircraft will proceed directly to the first specified fix and rejoin the route from that point. If the aircraft is on FFP, it will break away from the FFP and proceed as above. Both Fix entries must be on the filed flight plan and the clearance limit must follow the first Fix, or an error is generated.
Route_Intercept	Causes an aircraft to attempt to rejoin its route.
Route_Intercept <i>Fix/Airway</i>	Causes an aircraft to change its route to intercept an airway or a fix on its flight plan.
Route_Intercept <i>Runway</i>	Causes an aircraft to change its route to intercept the localizer for an approach.
Route_Intercept <i>FixRadial</i>	Causes an aircraft to change its route to intercept a radial from a fix. *Fix and Radial is in the form <i>ffrrrR</i> where <i>fff</i> is a three-letter fix name, <i>rrr</i> is a three-digit radial from the fix, and R is a literal character.

5.26 Set Ownership

Press the Set Ownership button and select from the list of valid sectors.

5.27 Speed Commands

Entry	Result
Speed <i>Speed</i>	Sets the Assigned Speed of an aircraft to the specified <i>speed</i> . Speed: Must fall into the range valid for this aircraft.
Speed Increase <i>number of knots</i>	Adds the specified <i>speed</i> to the Assigned Speed of an aircraft. Speed: Must fall into the range valid for this aircraft.
Speed Decrease <i>number of</i>	Subtracts the specified <i>speed</i> from the Assigned Speed of an

<i>knots</i>	aircraft. Speed: Must fall into the range valid for this aircraft.
Speed	Sets the current speed to be the Assigned Speed of an aircraft.
Speed Resume	Sets the Assigned Speed of an aircraft to normal speed.
Speed OK <i>Speed</i>	Allows for the Assigned Speed to be overridden in the descent at or below 10,000 feet from the maximum of 250 knots. The Speed can be increased to the maximum allowable for that aircraft type.
Speed C	Sets the Assigned Speed of an aircraft to normal cruising speed.
Speed H	Sets the Assigned Speed of an aircraft to holding speed
Speed A	Sets the Assigned Speed of an aircraft to approach speed.
Speed <i>Speed Until Fix Speed Speed2</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the speed to Speed2. Speed & Speed2: Must fall into the range valid for this aircraft.
Speed <i>Speed Until Fix Speed H</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the speed to holding speed. Speed: Must fall into the range valid for this aircraft.
Speed <i>Speed Until Fix Speed A</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the speed to approach speed. Speed: Must fall into the range valid for this aircraft.
Speed <i>Speed Until Fix Altitude Altitude</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the altitude to Altitude. Speed: Must fall into the range valid for this aircraft. Altitude: Must fall into the range valid for this aircraft.
Speed <i>Speed Until Fix Altitude MAX</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the climb rate to MAX for the aircraft. Speed: Must fall into the range valid for this aircraft.
Speed <i>Speed Until Fix Altitude MAX Altitude</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the altitude to Altitude and uses MAX climb rate to reach it. Speed: Must fall into the range valid for this aircraft. Altitude: Must fall into the range valid for this aircraft.
Speed <i>Speed Until Fix Heading Heading</i>	Sets the Assigned Speed of an aircraft to the speed and waits until the specified Fix is reached, and then sets the heading to Heading. Speed: Must fall into the range valid for this aircraft. Heading: Range is 0 to 360.

Entry	Result
Speed <i>Speed Until Fix Heading Left Heading</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the heading to Heading and turns left to it. Speed: Must fall into the range valid for this aircraft. Heading: Range is 0 to 360.
Speed <i>Speed Until Fix Heading Right Heading</i>	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the heading to Heading and

	turns right to it. Speed: Must fall into the range valid for this aircraft. Heading: Range is 0 to 360.
Speed <i>Speed</i> Until <i>Fix</i> Heading Left	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then starts turning left Speed: Must fall into the range valid for this aircraft.
Speed <i>Speed</i> Until <i>Fix</i> Heading Right	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then starts turning right. Speed: Must fall into the range valid for this aircraft.
Speed <i>Speed</i> Until <i>Fix</i> Heading MAX	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the turn rate to MAX for the aircraft. Speed: Must fall into the range valid for this aircraft. Heading: Range is 0 to 360.
Speed <i>Speed</i> Until <i>Fix</i> Heading <i>number of degrees</i> Left	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then turns left the number of degrees input. Speed: Must fall into the range valid for this aircraft. Heading: Range is 0 to 360.
Speed <i>Speed</i> Until <i>Fix</i> Heading <i>number of degrees</i> Right	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then turns right the number of degrees input. Speed: Must fall into the range valid for this aircraft. Heading: Range is 0 to 360.
Speed M	Sets the Assigned Speed of an aircraft to minimum speed.
Speed <i>Speed</i> Altitude <i>Altitude</i>	This is a do then do command. Once the Speed is accomplished then an altitude event is issued.
Speed <i>Speed</i> Heading <i>Heading</i>	This is a do then do command. Once the Speed is accomplished then a heading event is issued.
Speed <i>speed</i> Until <i>fix</i> Speed MAX	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then sets the speed to speed MAX. Speed: Must fall into the range valid for this aircraft.
Speed <i>speed</i> Until <i>fix</i> Speed RESUME	Sets the Assigned Speed of an aircraft to the speed, waits until the specified Fix is reached, and then resumes the speed that was set before MAX. Speed: Must fall into the range valid for this aircraft.
Speed MAX	Sets speed to MAX.
Speed MIN	Sets speed to MIN.
Speed T	Use in Tower only to set an aircraft on the ground to Taxi speed.

5.28 Spin Commands

Entry	Result
Spin Left	Used to place an aircraft in a left turn Spin status. The aircraft will continue to turn until Spin Cancel is entered.
Spin Right	Used to place an aircraft in a right turn Spin status. The aircraft will continue to turn until Spin Cancel is entered.

Spin Left <i>Count</i>	Used to place an aircraft in a left turn Spin status for the number of spins as specified by <i>Count</i> . The value of <i>Count</i> may range from 1 to 10. After the aircraft has performed the number of spins requested, the aircraft will continue on flight plan route.
Spin Right <i>Count</i>	Used to place an aircraft in a right turn Spin status for the number of spins as specified by <i>Count</i> . The value of <i>Count</i> may range from 1 to 10. After the aircraft has performed the number of spins requested, the aircraft will continue on flight plan route.
Spin Cancel	Used to cancel the Spin status of an aircraft.
Spin Handoff	Used to cause an aircraft to spin waiting for handoff acceptance.

5.29 Take_Off Commands

Entry	Result
Take_Off	This command is only used with T2D. This directs the aircraft along its route until it reaches the fix named DEPTRunway and either act on commands on that fix or look to the next flight slot and act on the restriction on that slot. This only works for aircraft on original route.

5.30 Taxi Commands

Entry	Result
Taxi	This command is only used with T2D to control movement of the aircraft on the ground. Hold_Short is used to stop the aircraft and Taxi is used to move the aircraft.

6 Mouse Functions

The mouse has a left and a right button. Both buttons have been programmed for use with the Pilot software.

Button	Type	Ctrl Pressed	Function
Left		No	The Left mouse button has several functions. It is mainly used to select an object. These objects can be a data block, target, list elements, a new center, etc.
Left	Single	Yes	Start the Range Bearing Function.
Left	Double	No	Displays the route of an aircraft.
Left	Double	Yes	Brings up the Multi-Input dialog for an aircraft.
Right	Single	No	The Right mouse button has two functions; data block offset or brings up the Cascade Menus if enabled.
Right	Single	Yes	Take down the Range Bearing Readout.

6.1 Aircraft Selection

Only one aircraft can be selected at anytime and an aircraft must be selected to perform an operation on that aircraft.

Methods of selecting an aircraft:

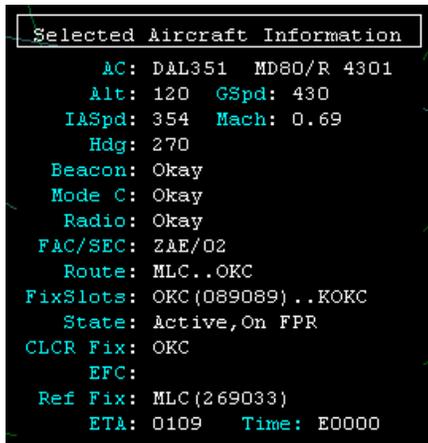
Use the mouse and click on the aircrafts target or data block.

Type the CID number, unique Beacon Code or AID of the aircraft on the command line and press enter.

Use the mouse and select the aircraft name from the aircraft list.

Once an aircraft has been selected the Selected Aircraft Information window for that aircraft will be displayed and a red circle will be displayed around the selected aircraft's target. Reference the section on the Selected Aircraft Information to learn more about the setup of this window.

*Example of Vertical
Selected Aircraft Information Window*



040

Selected Aircraft



041

To deselect all aircraft use the mouse and left click on the screen were no aircraft exist.

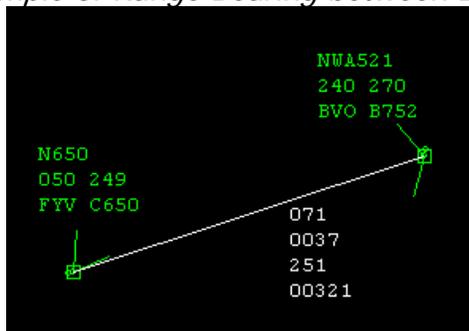
6.2 Range Bearing

The pilot interface has a Range Bearing function. This function can provide Range Bearing information between 2 points, an aircraft and a point or between 2 aircraft.

Function	Description
Initiation	Range Bearing readings can be initiated by using the left mouse button as follows: Move the mouse to the first point and hold down the Ctrl button on the keyboard, click and hold the left mouse button and drag the mouse to the second point and release the mouse button and Ctrl button. A Range Bearing readout should be initiated. As verification of the process while dragging the mouse to the second point, a line will be displayed showing where the function is monitoring.

Data Block	<p>The Range Bearing data block can be moved in the same fashion as an aircraft's data block, by clicking over the Range Bearing data block and holding down then dragging the data block to the new desired location.</p> <p>The data block can display up to 4 lines of information. Only 3 lines of information are displayed when performing a readout of 2 points.</p> <p>Line1 -> Heading from Point1 to Point2 Line2 -> Distance between Point1 & Point2 Line3 -> Heading from Point2 to Point1 Line4 -> Time till intercept</p>
Deletion	<p>A Range Bearing readout can be deleted by holding down the Ctrl button on the keyboard and then clicking with the right mouse button on the Range Bearing data block.</p>

An Example of Range Bearing between 2 aircraft

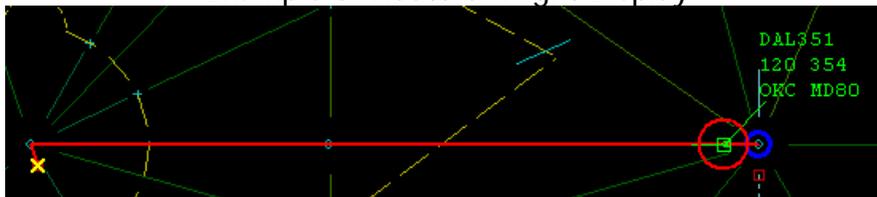


042

6.3 Route of Flight Display

To graphically display the route of flight of an aircraft simply use the mouse and double-click the left mouse button on the aircraft. This will display the route of flight for approximately 6 seconds and then disappear. There is no limit of how many routes of flight can be displayed at one time.

Example of Route of Flight Display



043

The blue circle marks the point that the flight entered the simulation. The yellow X is the destination of the aircraft.

6.4 Data Block Offset

To offset a data block, click on a data block with the right mouse button and hold the button down while dragging the data block to the new desired location and release the mouse button.

7 Display Windows

7.1 Display Window Movement

All windows that are displayed on the situation display can be moved (the Aircraft List window cannot be moved). This can be accomplished by placing the cursor just inside the top left corner of the window, holding the left mouse button down and dragging the window to a new location.



7.2 Aircraft List Window

The Aircraft List window contains a complete list of all the aircraft in the scenario. By default this window is up when the software is started. This window can be dropped, by pressing "The List" icon on the toolbar.

The window has two areas, the **Active Aircraft** and the **Pending/Other Aircraft**. All aircraft in the lists are sorted alphabetically.

Active Aircraft are the aircraft assigned to this Pilot. The data blocks of these aircraft will be displayed brighter than the **Other Aircraft**.

Other Aircraft are the aircraft in the problem not assigned to this Pilot. These aircraft data blocks only contain the callsign and are dimly displayed.

Pending Aircraft are aircraft that have not yet entered the exercise.

Regardless of whether an aircraft is in the Active, Pending or Other list, they can be selected and Pilot commands can be entered.

To move an aircraft from Active to the Other list or vice versa, use the Reassign (Page Down on Keyboard) Pilot command.

By default, the **Pending** list is displayed in the bottom part of the list window. To display the **Other** List, simply click on the dark green button labeled "Other". Clicking of the button labeled "Pending" will then redisplay the **Pending** list.

At the bottom of each list is a ^ & v. These are grayed out when not functional. When displayed in black they indicate that not all aircraft are displayed and the user can scroll up or down to display the additional aircraft.

The number at the bottom of each list indicates the number of aircraft in the list.

044

7.2.1 Aircraft List Layout

The Pending and Other lists only have two columns, CID and AID. The Active list has an additional column to display the departure airport for the aircraft when ready to depart.

Column	Name	Description
1	CID	This is the aircrafts CID.
2	AID	Aircrafts name.
3	Airport	Airport name, displayed only for departures.

7.2.2 Aircraft List Color Coding

Color is used to show the status of an aircraft. The following chart will explain the meanings of the different color markings.

List	Background	Text Color	Description
------	------------	------------	-------------

Active	Gray	Green	Aircraft is okay.
Active	White	Green	Active aircraft is selected.
Active	Any Color	Flashing White	Aircraft has a prompt.
Active	Gray	Yellow	Aircraft is ready to depart.
Active	Blue	Yellow	Selected aircraft is ready to depart.
Active	Gray	Red	Aircraft has an emergency.
Active	Gray	Black	Aircraft has landed and has a prompt.
Active	Black	Red	The aircraft is in a non-radar coverage area and has an emergency.
Pending	Light Blue	White	Aircraft waiting to become active.
Pending	White	Light Blue	Pending aircraft is selected.
Other	White	Dark Green	Other aircraft is selected.
Other	Dark Green	Red	Aircraft has an emergency.
Other	Dark Green	White	Aircraft not assigned to this pilot station.

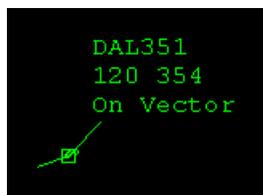
8 Aircraft Data Blocks

The Pilot can display either full data blocks or limited data blocks depending on users preference. This setup is part of the Main Menu, Datablock.

The **Full Data Block** has 3 lines of information:

- Line 1 AID (Aircraft Call Sign)
- Line 2 Altitude & Speed
- Line 3 Status / Clearance Limit & AC Type

The third line of the data block timeshares between Status of the Flight and Clearance Limit & Aircraft Type as shown below:



If the status of the aircraft is On Flight Plan Route (ON FPR), the third line will display only the Clearance Limit and Aircraft Type.

Use of Colors for Speed and Altitude – On both the Full Data Blocks and the Selected Aircraft Information window, color is used to indicate change of speed or altitude. **Red** is used to indicate increase, while **Yellow** is used to indicate decrease.

The **Limited Data Block** consists of only one line containing the Call Sign of the aircraft.

Below are examples of two limited data block. The bright limited data block is assigned to this Pilot, while the dimly displayed limited data block is assigned to another position.



As a reminder, all aircraft are controllable from any Pilot station. Pilot station assignments are made to help evenly distribute the number of aircraft a Pilot is responsible for at any given time.

9 Cascade Command Menus

A Cascade Command Menu function is available in the Pilot software. This system has two basic menus, Active and Inactive.

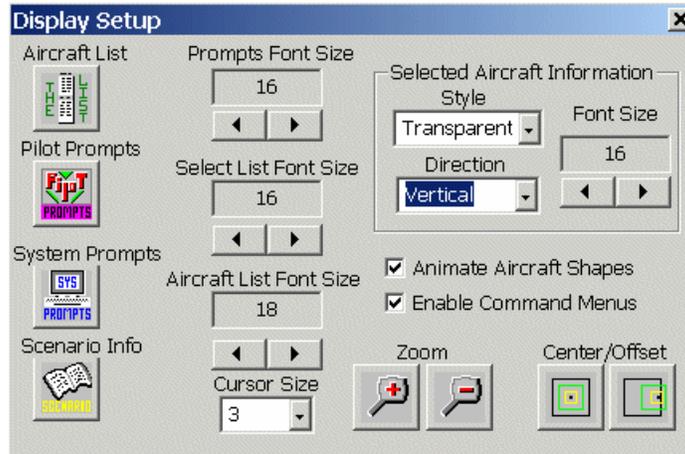
To access the **Active** Cascade Command Menu, click the right mouse button on the target of the aircraft that is to be manipulated.

Clicking the right mouse button in an area where no aircraft is present gains access to the **Inactivate** Command Menu.

These Cascade Menus provide a method to use the Pilot software with very little knowledge of the standard keyboard inputs.

***** Important *****

By default the Cascade Command Menus are turned off. In order to active them, press Display on the main menu. This will display the Display Setup window. On this window, select the "Enable Command Menus" button.



048

9.1 Active Cascade Command Menu

This menu allows Pilot commands to be input using the mouse. This method is slower, but requires less knowledge of the Pilot Command Set. The arrows at the right of a command indicate that the menu cascades out to another level.

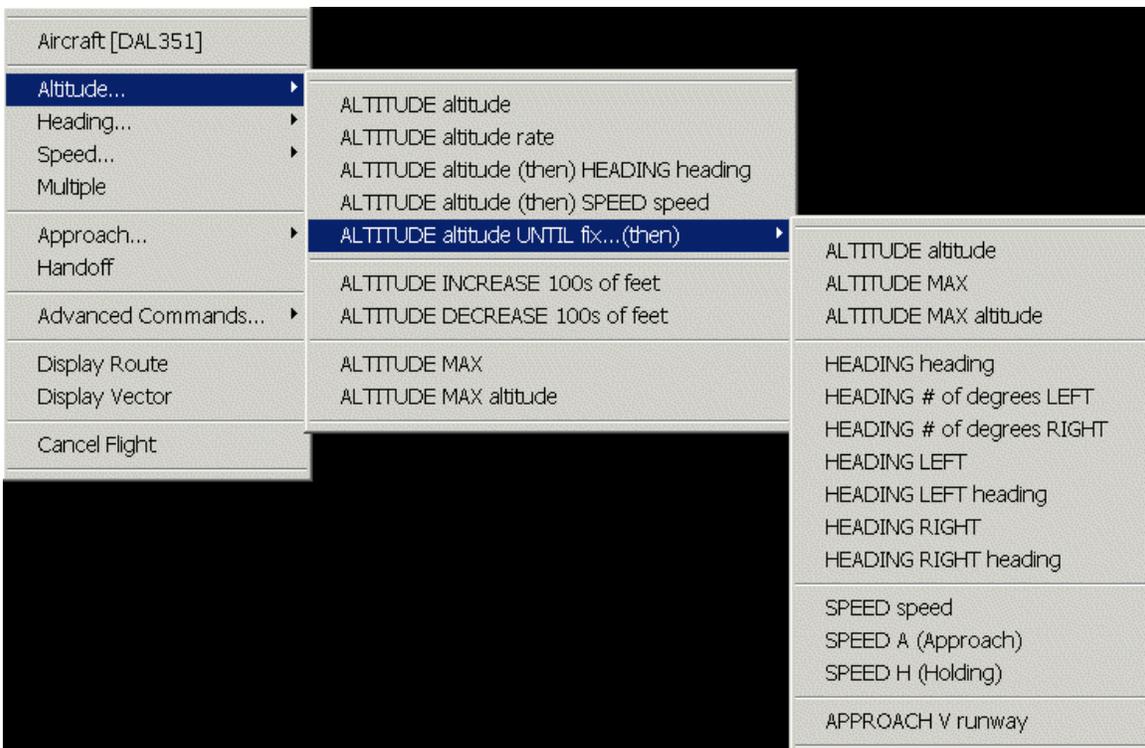


049

The following paragraphs will describe the commands that are available to the Pilot through this process.

9.1.1 Altitude Menus

Any **Altitude** command can be input using the following menu:

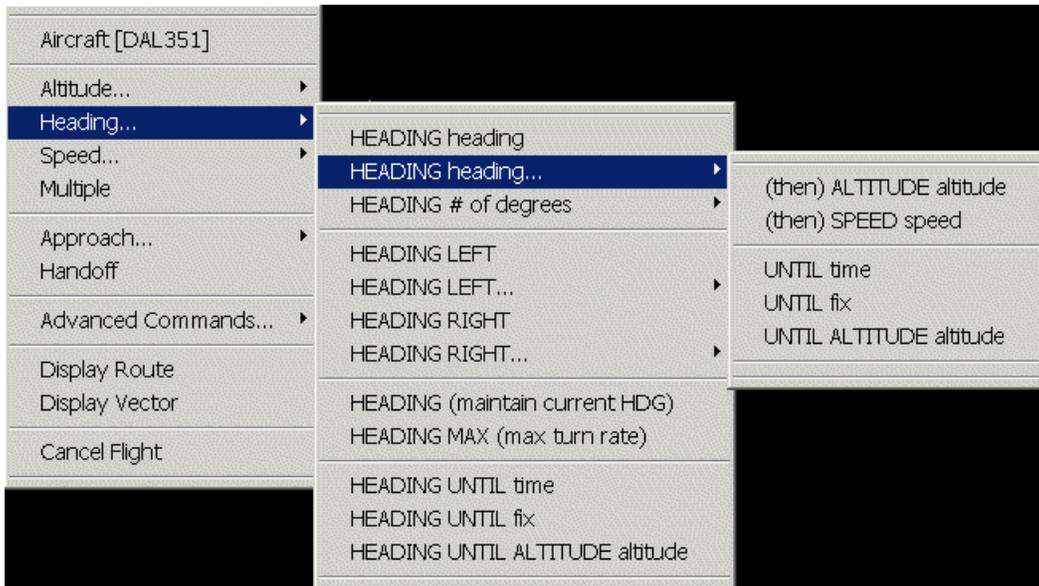


050

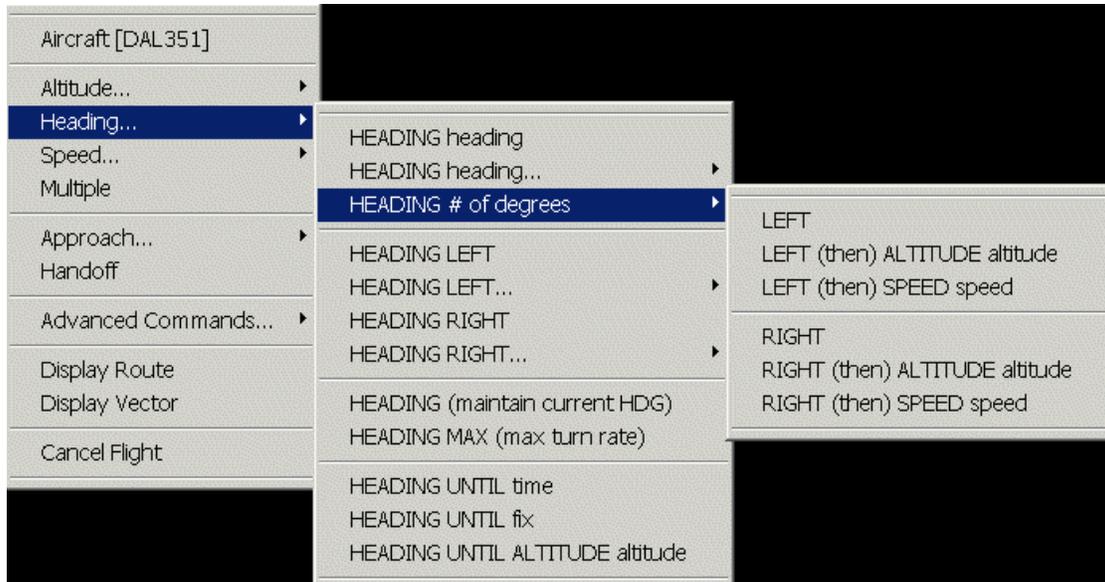
As each option is selected, A window will appear. Fill in each field as required then select Okay.

9.1.2 Heading Menus

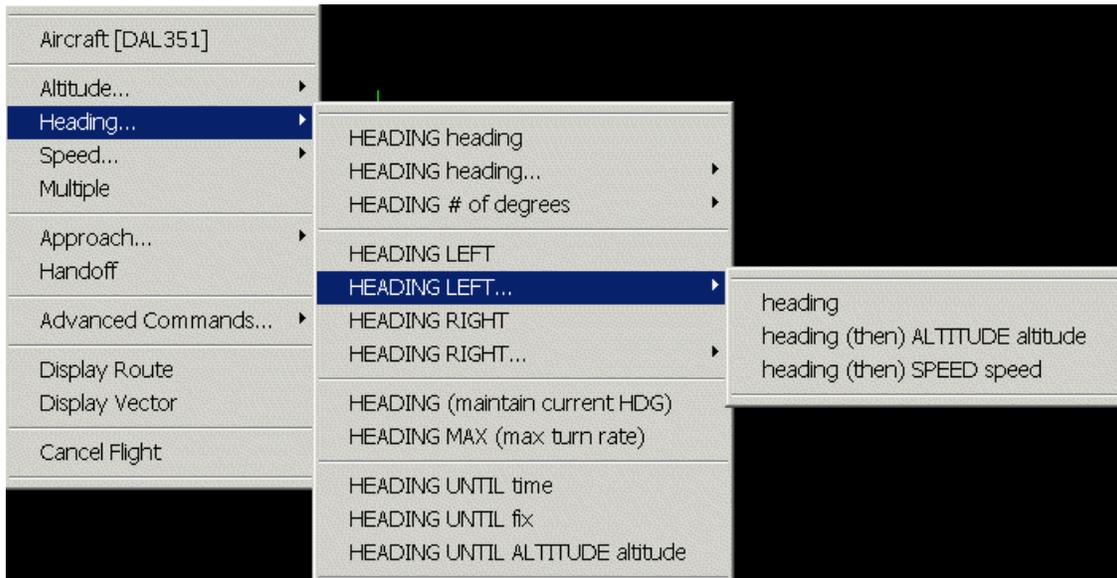
Heading commands can be input using the following four menus that show the various sub menus:



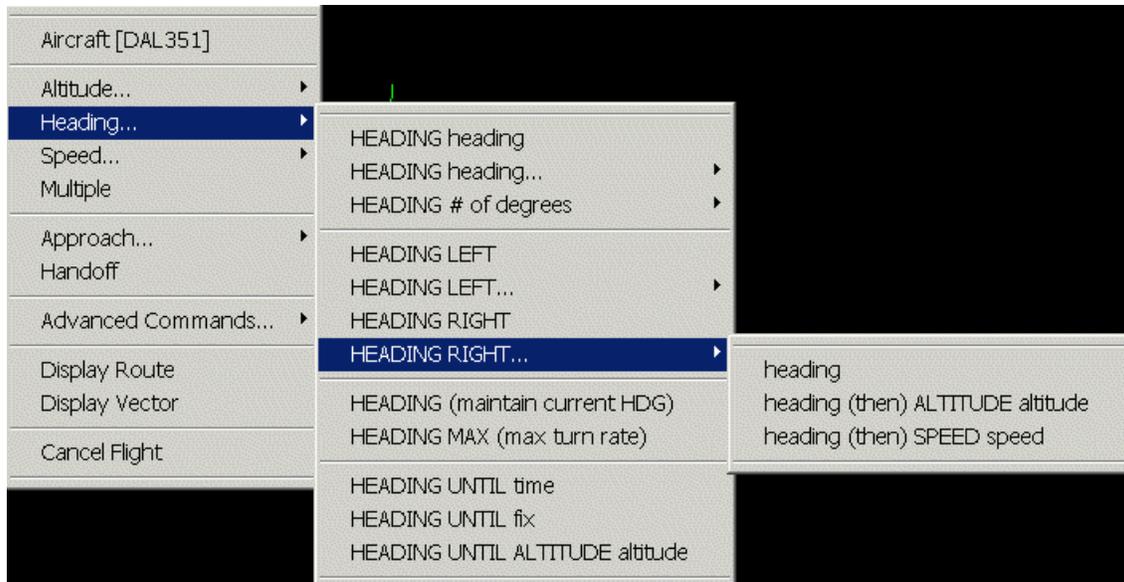
051



052



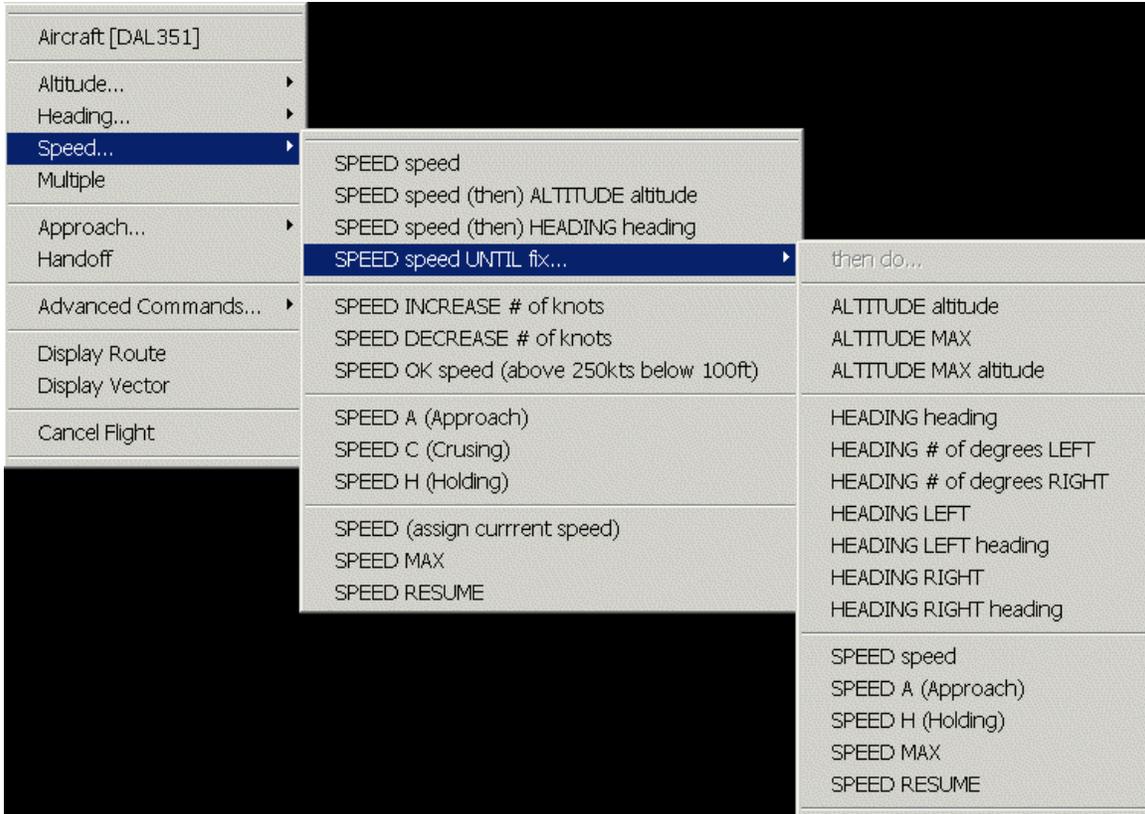
053



054

9.1.3 Speed Menus

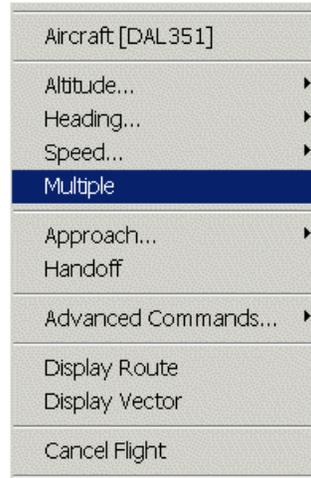
Speed commands can be input using the following menu:



055

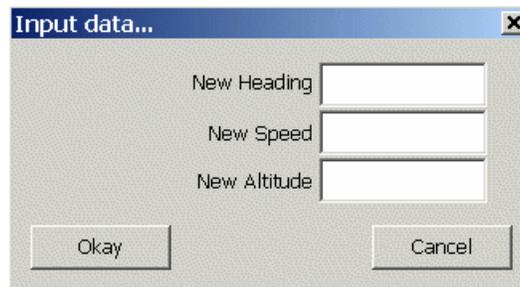
9.1.4 Multiple Menu

The **Multiple** command allows the Pilot to enter a New Heading, a New Speed, a New Altitude or any combination of the three at the same time.



056

If **Multiple** is selected from the menu, the following window will be displayed:

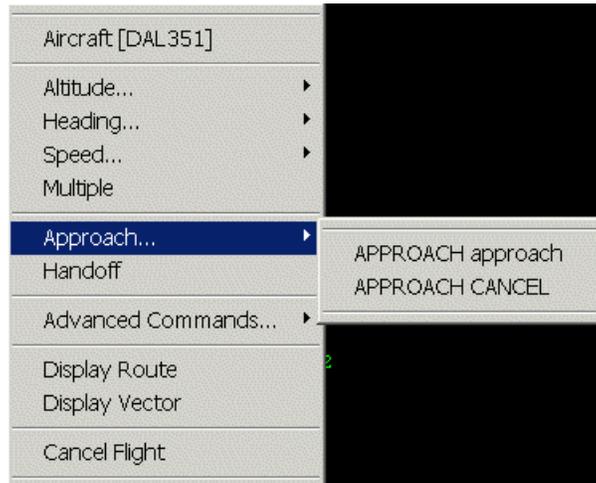


057

Each command that is entered will be executed immediately after Okay is selected.

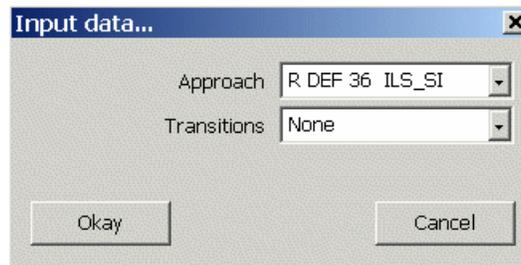
9.1.5 Approach Menus

Approach commands can be input using the following menu:



058

If APPROACH approach is selected, the following window will be displayed:



The Approach pop down list will have all the approaches that are available for the destination airport. Highlight the desired approach and select Okay.

9.1.6 Handoff Command

The **Handoff** command allows the Pilot to force a handoff of the aircraft to the active sector.



075

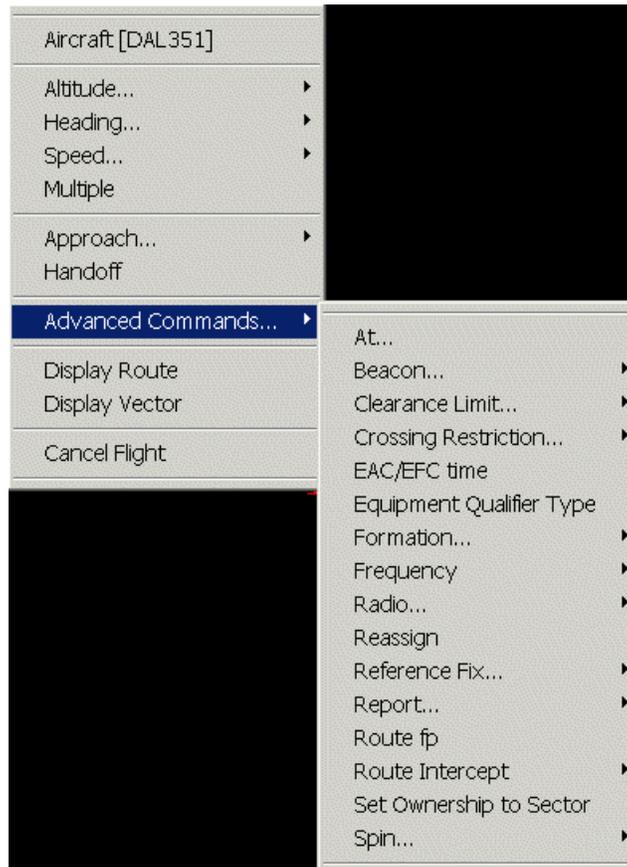
If Handoff is selected, the following window will be displayed:



The Handoff pop down list will have all the available sectors. Highlight the desired sector and select Okay.

9.1.7 Advanced Commands

The **Advanced Commands** area is a collection of the less used, but still very important Pilot commands.

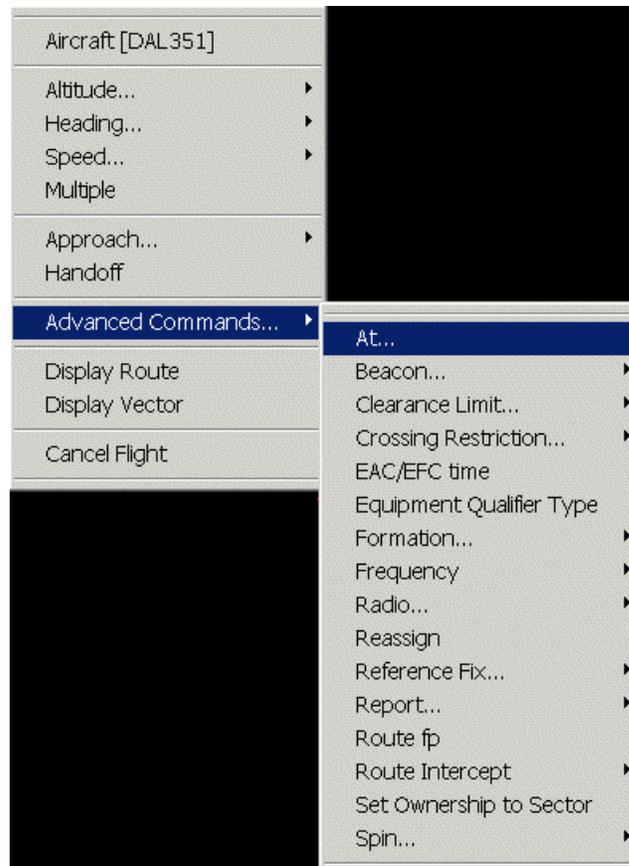


059

Each of these Command Menus will be shown in the following paragraphs.

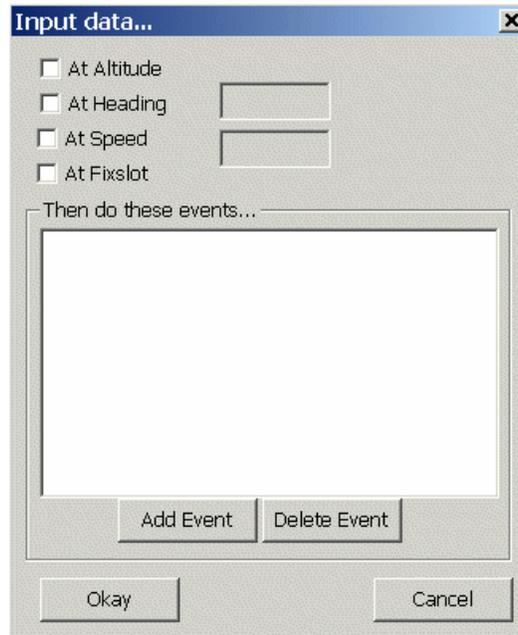
9.1.7.1 At Commands

The **At** Command allows the Pilot to enter an event that will be executed subsequent to a condition being met.



060

When **AT...** is selected from the command list, the follow window will be displayed:

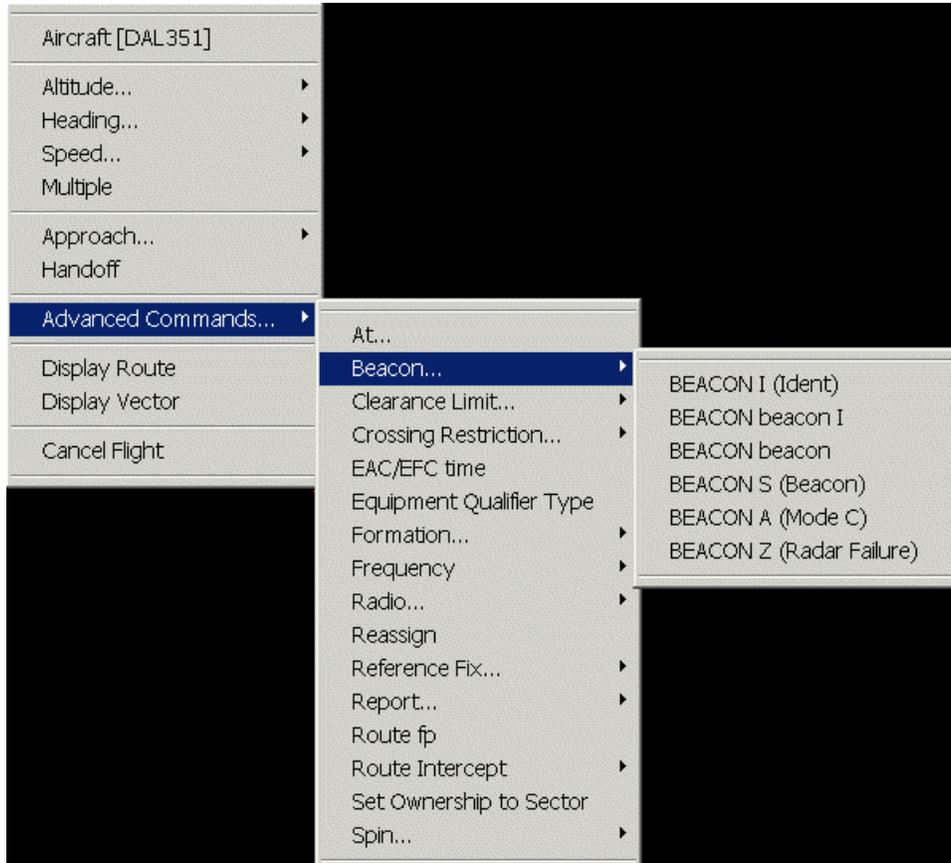


061

After the condition is set (**At** - Altitude, Heading, Speed or Fixslot), the event can be added.

9.1.7.2 Beacon Menus

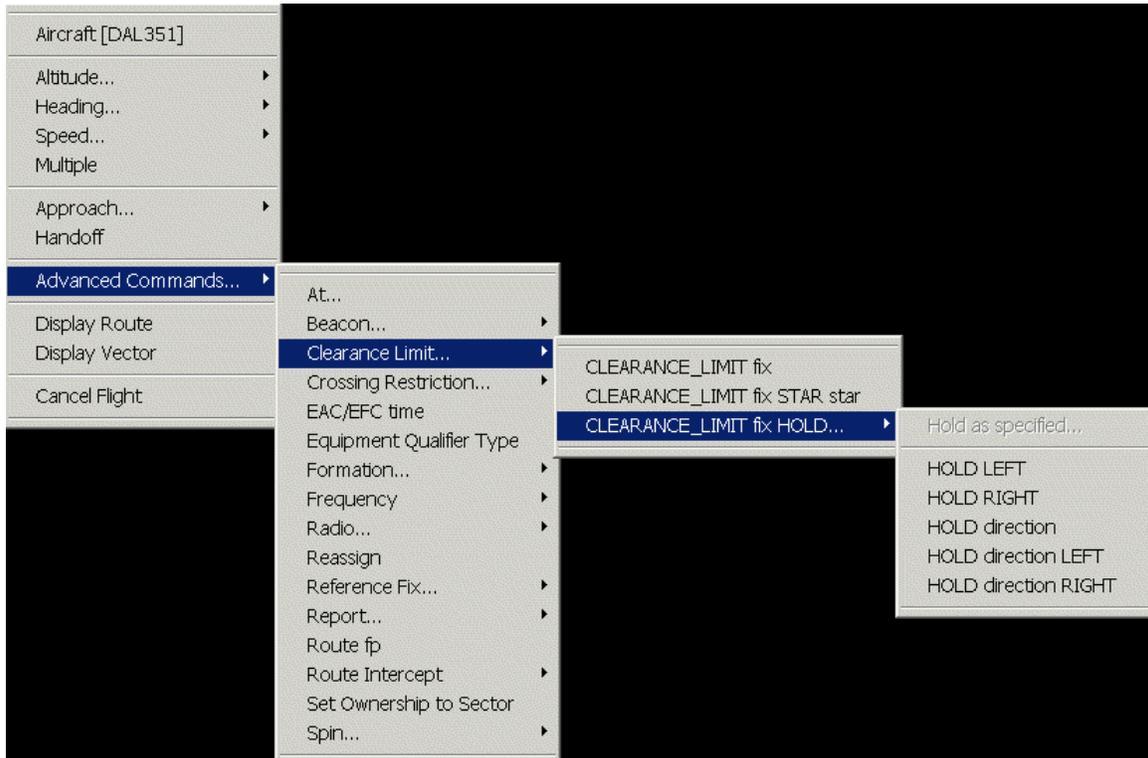
All available **Beacon** commands can be input using the following menu:



062

9.1.7.3 Clearance Limit Menus

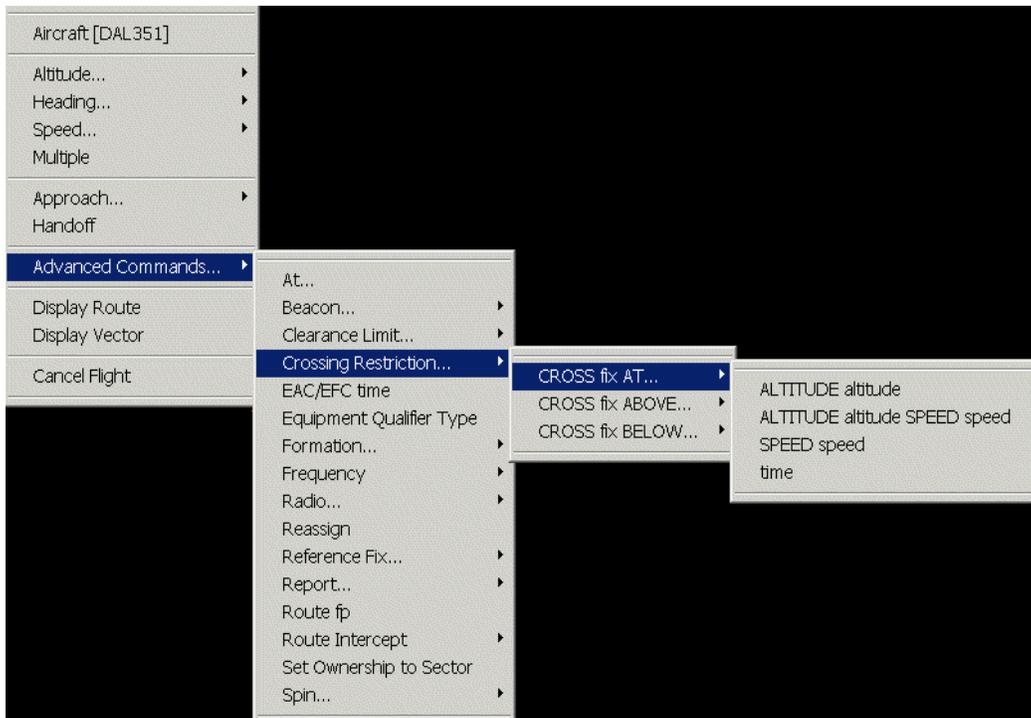
Clearance Limit commands can be input using the following menu:



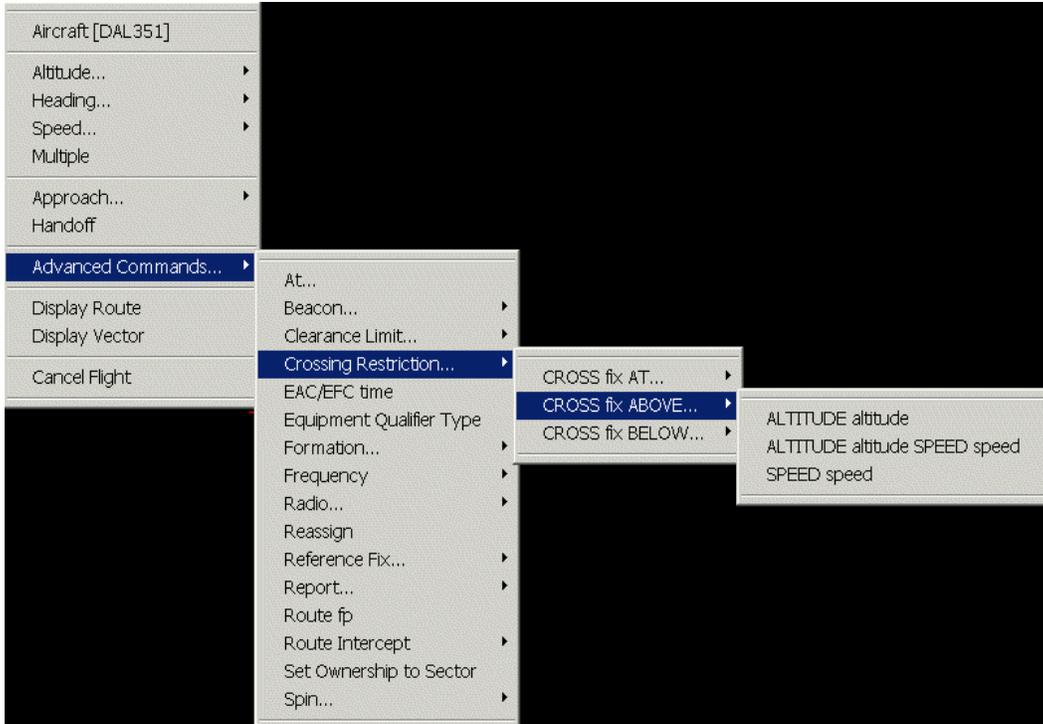
063

9.1.7.4 Crossing Restriction Menus

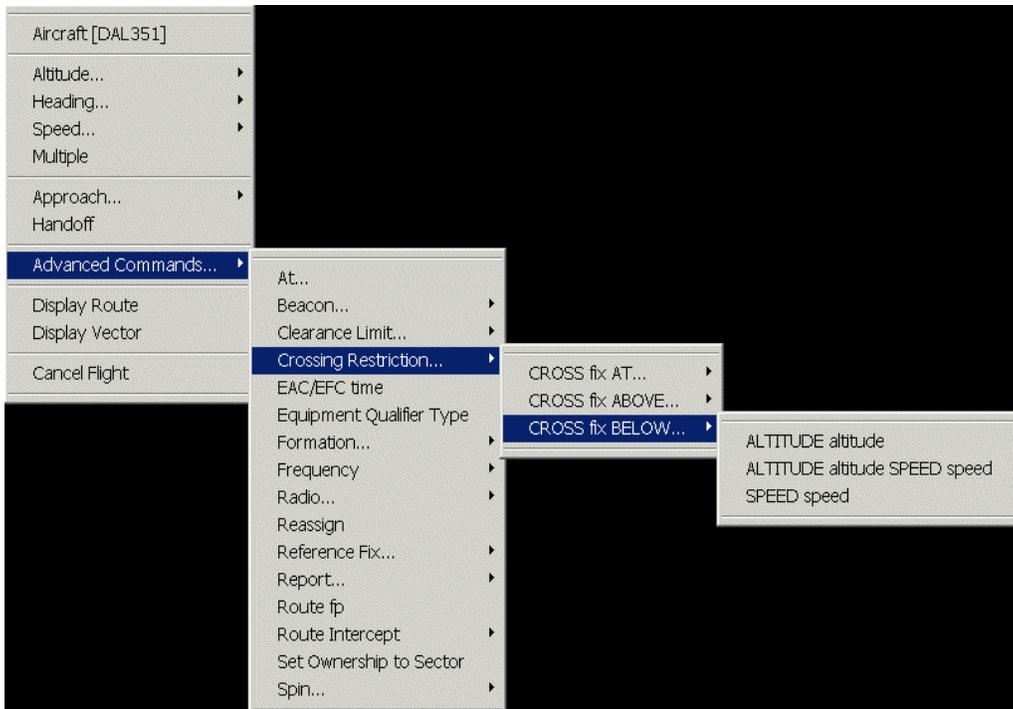
Crossing Restriction command can be input using the following three menus:



064



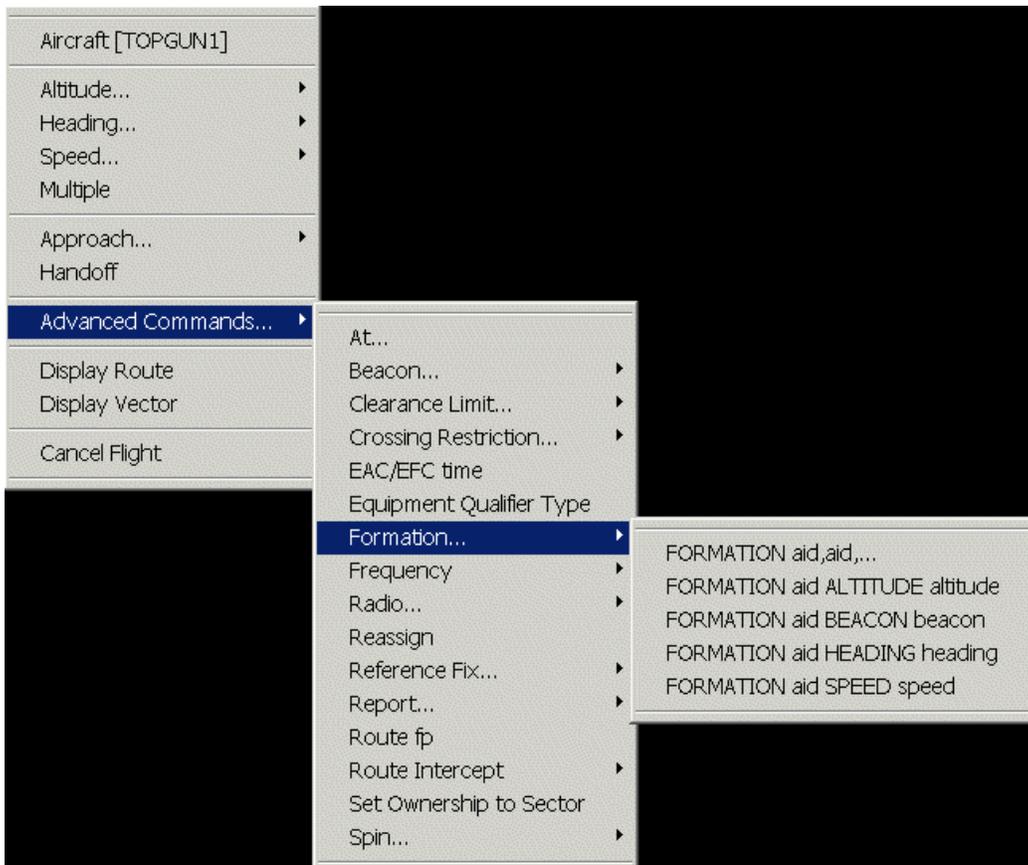
065



066

9.1.7.5 Formation Flight Menus

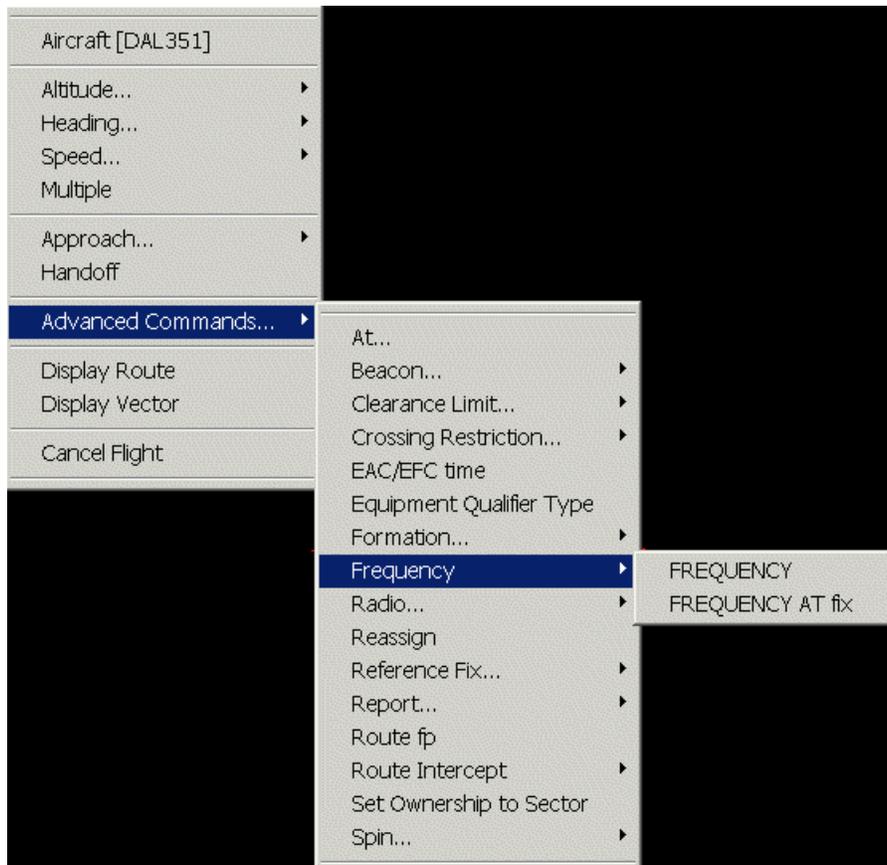
Formation command can be input using the following menu.



067

9.1.7.6 Frequency Menu

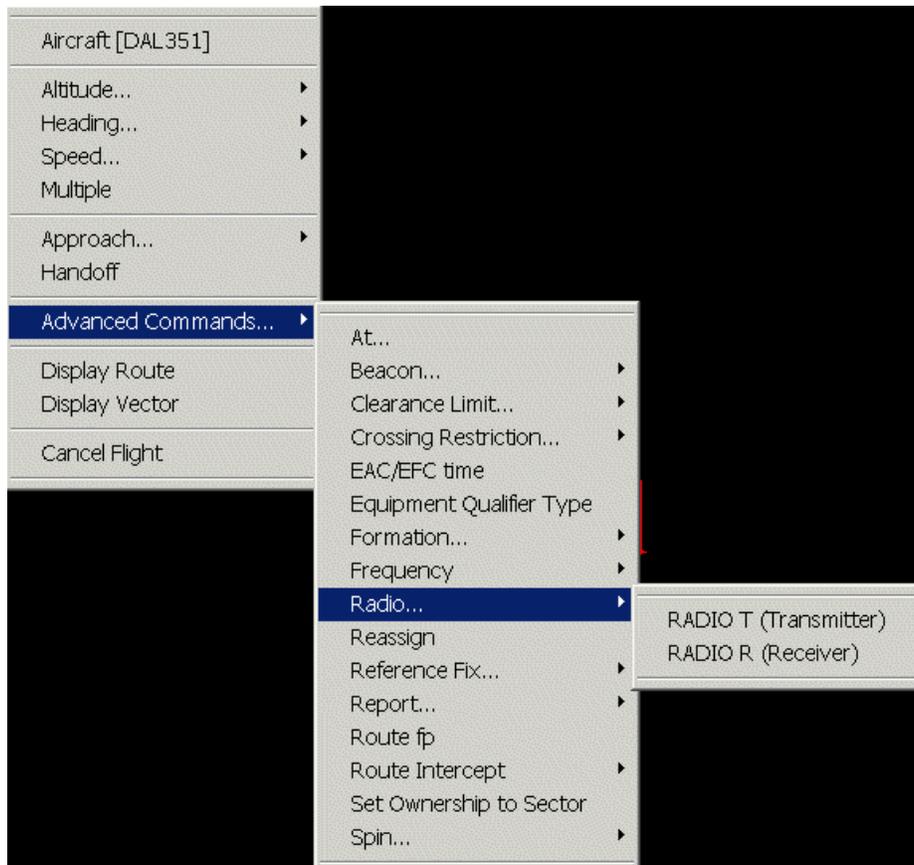
Frequency commands can be input using the following menu:



068

9.1.7.7 Radio

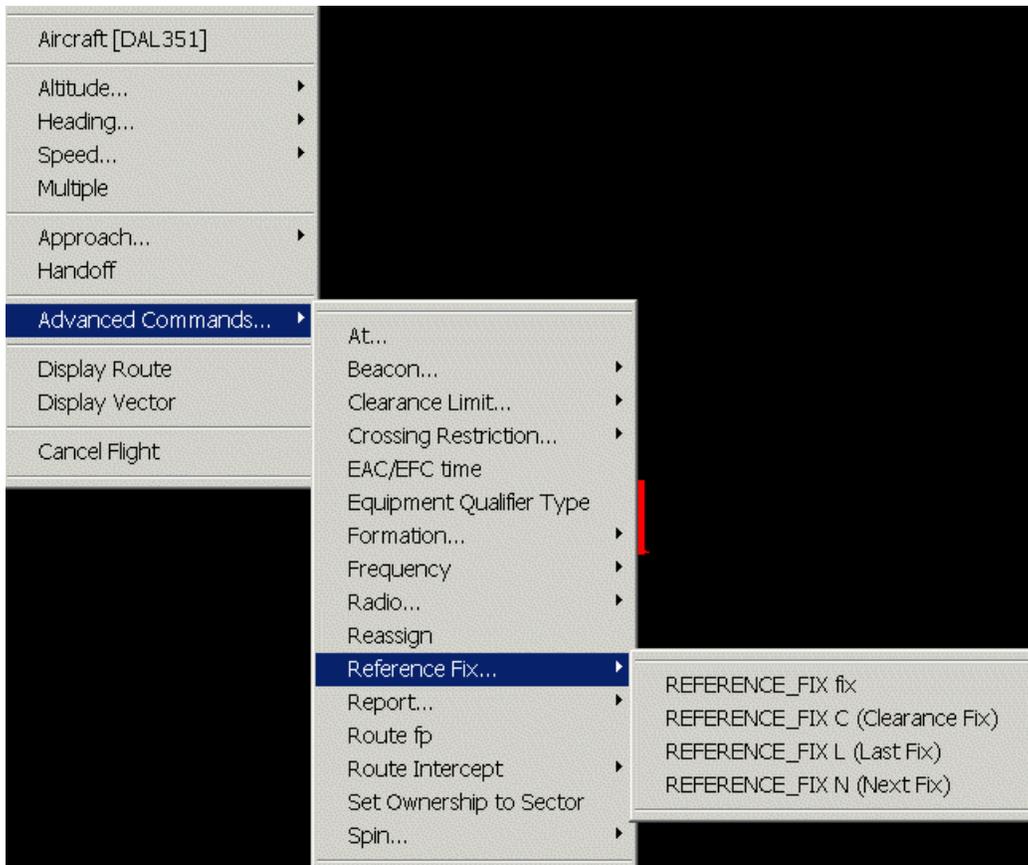
Radio commands can be input using the following menu:



069

9.1.7.8 Reference Fix Menus

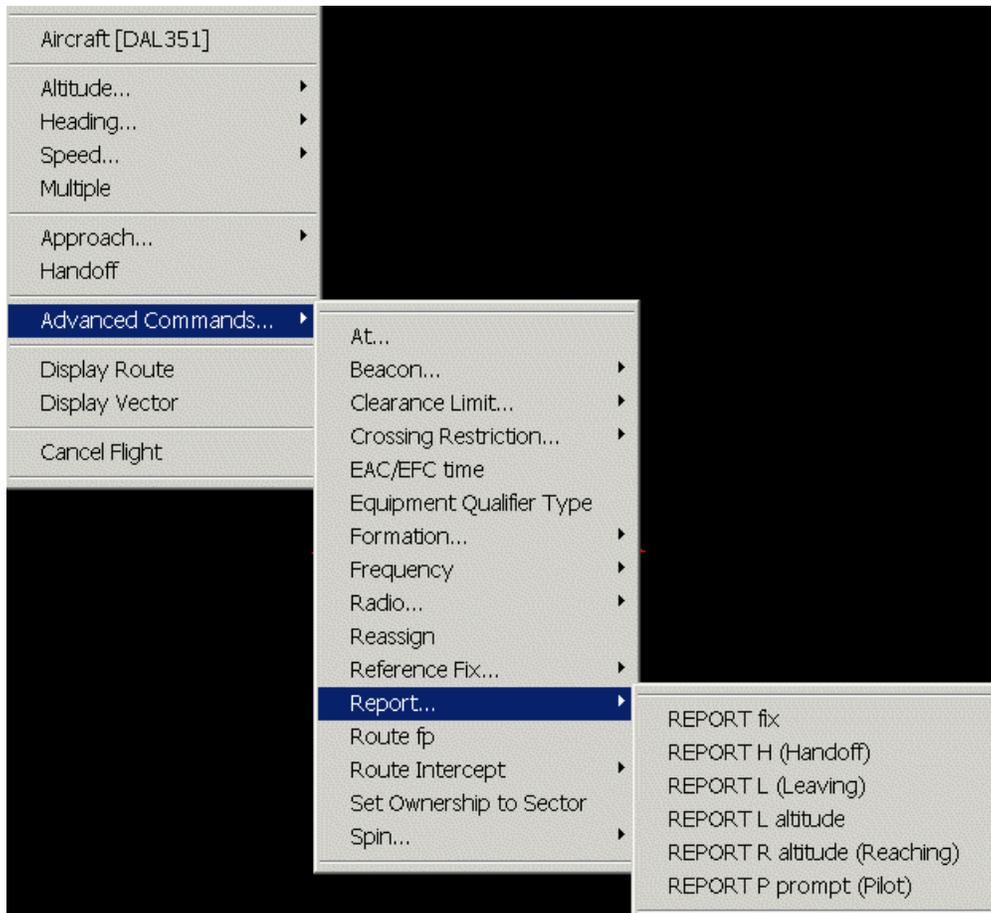
Reference Fix commands can be input using the following menu:



070

9.1.7.9 Report Menus

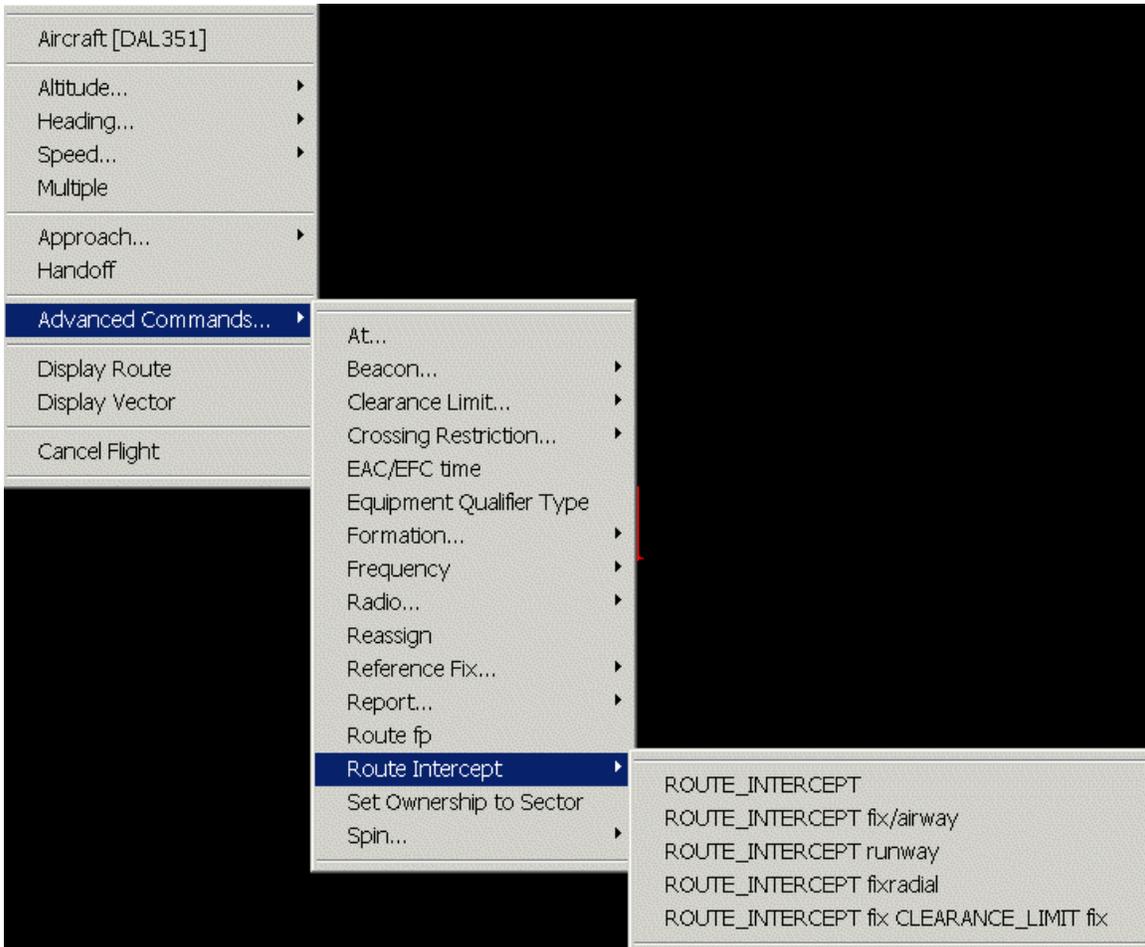
Report commands can be input using the following menu:



071

9.1.7.10 Route Intercept Menus

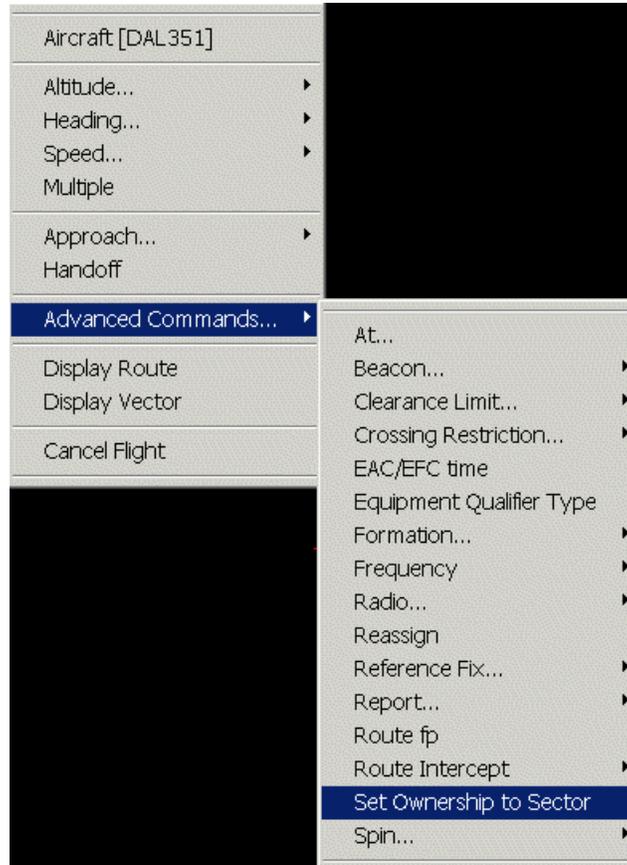
Route Intercept commands can be input using the following menu:



072

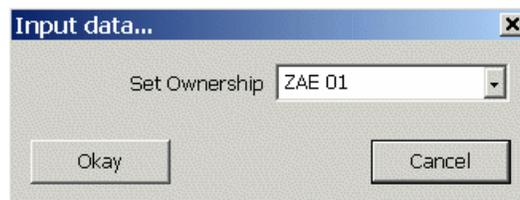
9.1.7.11 Set Ownership to Sector

The **Set Ownership to Sector** command can be input using the following menu:



073

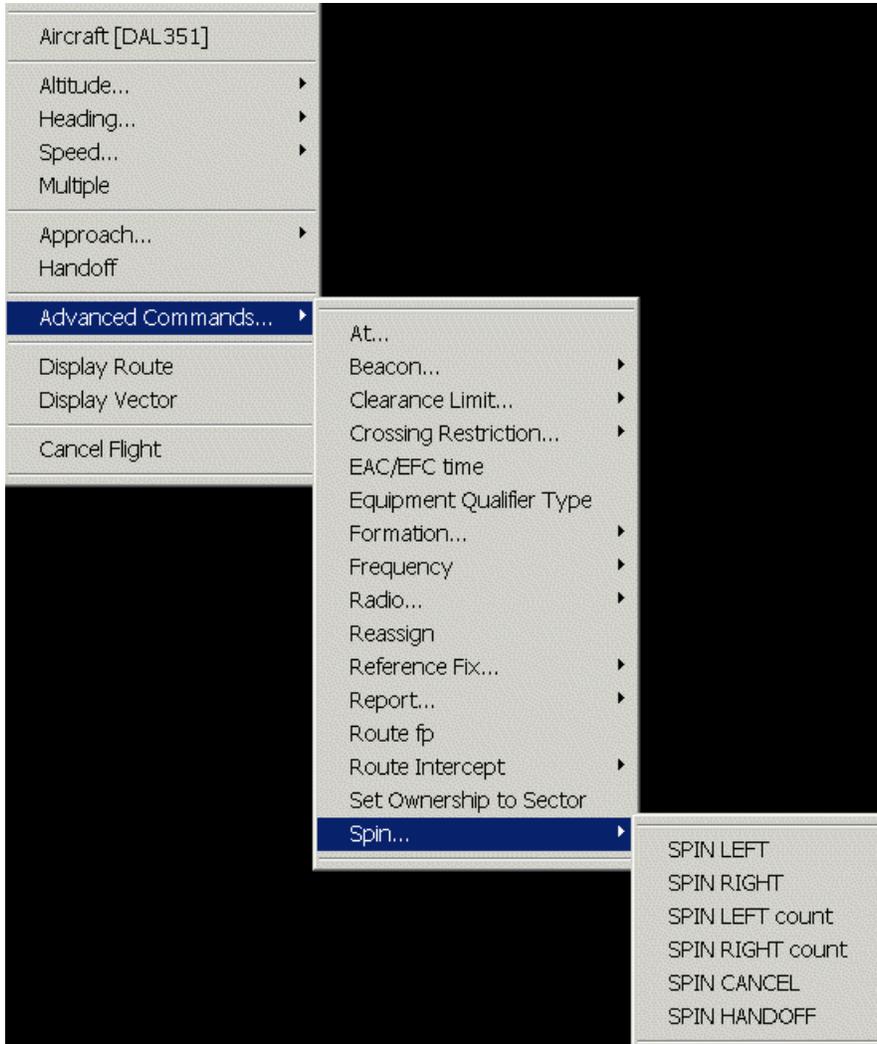
If Set Ownership to Sector is selected, the following window will be displayed:



The Set Ownership pop down list will have all the available sectors. Highlight the desired sector and select Okay.

9.1.7.12 Spin Menus

Spin commands can be input using the following menu:



074

9.1.8 Display Route

Display Route will display the original filed route of flight on the selected aircraft. The route will remain displayed for approximately 7 seconds.



076

9.1.9 Display Vector

Display Vector will display a vector line of the current heading of the selected aircraft. The vector line will be 40 miles in length with range marks at each 10-mile segment. The line will remain displayed for approximately 7 seconds.



077

9.1.10 Cancel Flight

If **Cancel Flight** is selected, the aircraft will be removed from the scenario and cannot be controlled again. The action is irreversible.



078

9.2 Inactive Cascade Command Menu

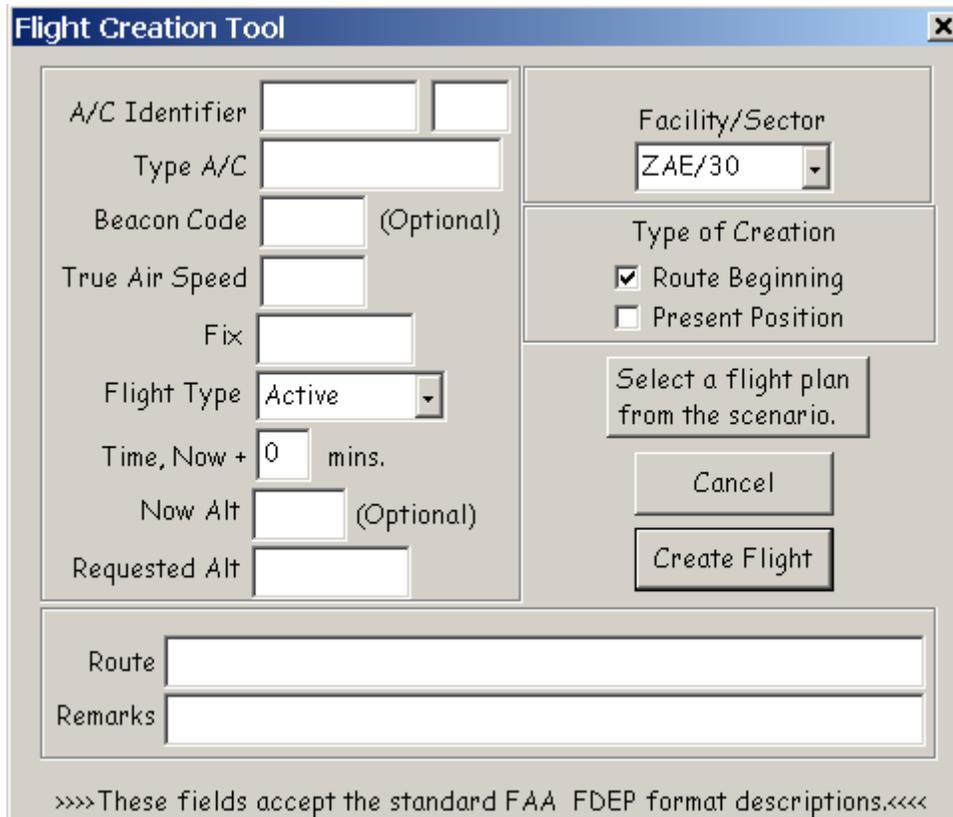
The **Inactive Menu** is intended to provide access to all the non-aircraft commands.



079

9.2.1 Add a Flight

If Add a Flight is selected in the Inactive Menu, the following window will be displayed:



The screenshot shows a dialog box titled "Flight Creation Tool" with a close button (X) in the top right corner. The dialog is divided into several sections:

- Left Column:**
 - A/C Identifier: Two empty text boxes.
 - Type A/C: One empty text box.
 - Beacon Code: One empty text box with "(Optional)" to its right.
 - True Air Speed: One empty text box.
 - Fix: One empty text box.
 - Flight Type: A dropdown menu showing "Active".
 - Time, Now +: A text box containing "0" followed by "mins.".
 - Now Alt: One empty text box with "(Optional)" to its right.
 - Requested Alt: One empty text box.
- Right Column:**
 - Facility/Sector: A dropdown menu showing "ZAE/30".
 - Type of Creation: Two checkboxes: "Route Beginning" (checked) and "Present Position" (unchecked).
 - Select a flight plan from the scenario: A button.
 - Cancel: A button.
 - Create Flight: A button.
- Bottom Section:**
 - Route: One empty text box.
 - Remarks: One empty text box.

At the bottom of the dialog, there is a note: >>>These fields accept the standard FAA FDEP format descriptions.<<<<

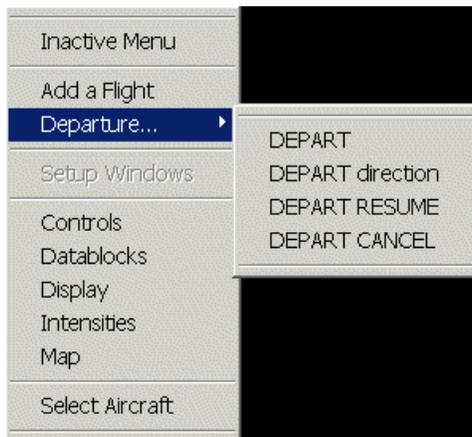
036

The user can add a flight from scratch or duplicate a flight from an aircraft already in the scenario. Fill in the fields with the appropriate FDEP format information.

For complete information concerning Add a Flight, refer to paragraph 5.1 of this document.

9.2.2 Departure

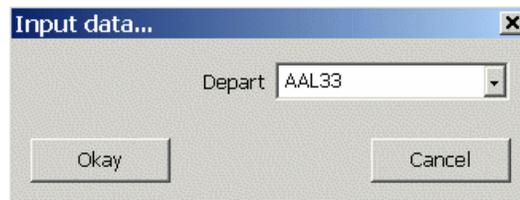
The user can depart aircraft, suppress Automated departures or resume automated departures from the Inactive Menu. If Departure is selected, the following window will be displayed:



080

9.2.2.1 Depart

If DEPART is selected, the following window will be displayed:



081

The Depart field is a pop down window that will list all aircraft that are scheduled to depart. Highlight the desired aircraft and select Okay.

9.2.2.2 Depart Direction

If DEPART direction is selected, the following window will be displayed:



082

The Depart field is a pop down window that will list all aircraft that are scheduled to depart. Highlight the desired aircraft and select Okay.

The Direction field is a pop down window that will list the 8 compass points. Highlight the desired direction to depart and select Okay.

9.2.2.3 Depart Resume

If DEPART RESUME is selected, automatic departure of designated aircraft will resume. If an aircraft was scheduled for automatic departure during the period that automatic departures were suppressed, a manual Depart command will need to be issued in order for the aircraft to depart.

9.2.2.4 Depart Cancel

If DEPART CANCEL is selected, aircraft that are scheduled for automatic departure will not depart without a manual Depart command being entered.

9.2.3 Controls

If Controls is selected, the Control Menu will be displayed. For complete information on the Control Menu, refer to paragraph 3.2.

9.2.4 Datablocks

If Datablocks is selected, the Datablock Setup window will be displayed. For complete information on the Datablock Menu, refer to paragraph 3.3.

9.2.5 Display

If Display is selected, the Display Setup window will be displayed. For complete information on the Display Menu, refer to paragraph 3.4.

9.2.6 Intensities

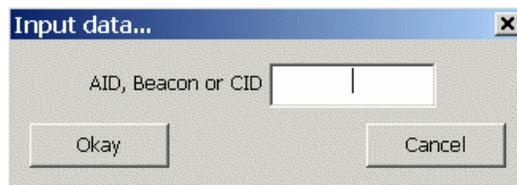
If Intensities is selected, the Intensities window will be displayed. For complete information on the Intensities Menu, refer to paragraph 3.5.

9.2.7 Map

If Map is selected, the Map Setup window will be displayed. For complete information on the Map Menu, refer to paragraph 3.5.

9.2.8 Select Aircraft

If Select Aircraft is selected from the Inactive Menu, the following window will be displayed:



083

The user can enter an aircraft's callsign, discrete beacon code or computer ID number in the blank field.

If Okay is selected, the Selected Aircraft Information window for that aircraft will be displayed and a red circle will be displayed around the selected aircraft's target.