ELITE®

ELITE SIMULATION SOLUTIONS

OPERATOR'S MANUAL

W W W . F L Y E L I T E . C O M

(USA and Americas)

W W W . F L Y E L I T E . C H

(All other regions)

BASIC OPERATIONAL CONCEPTS

"Virtual" operations in the cockpit consist of using the mouse cursor shaped like a "hand" to push buttons, twist knobs, move handles, trim wheels, etc. With the use of optional external peripherals such as avionics panels and/or power quadrants, the use of the mouse for most cockpit operations can be avoided. Controls to fly the aircraft (yokes or flight sticks) are necessary. Rudder pedals are optional, but are highly recommended for single-engine operations in the twin-engine aircraft.

KEYBOARD CONTROL

The **keyboard** is not used to fly the aircraft, but rather only to provide shortcut key commands to assist the user in general operations and map functions. These functions can be found on the **MAIN MENU** dialog box, scrolling to **MAP** screen and pressing the "**?**" at the bottom of the screen.

MAP Screen Shortcuts:

Zoom

I = In
O = Out
N = Normal View
Alt + Click/Drag = Zoom In
Alt + Shift + Click = Zoom Out

Scroll

Left Arrow = Left
Right Arrow = Right
Up Arrow = Up
Down Arrow = Down

Route

Ctrl + Click = New Point
Ctrl + Shift + Click = Move Point
Ctrl + Alt + Click = Delete Points
Ctrl + "CLEAR" = Delete all Points

HDG/Dist

Shift + Click = Show heading and distance

Position

C = Center map to ACFT
Ctrl + C = Move ACFT to Map center

Custom Zoom

Ctrl + Click in "Zoom level Window" = Store Actual zoom level
Click in "Zoom level Window" = Set stored zoom level

General Shortcuts:

Visual

T = Look Down
G = Look Center
B = Look Up
Shift + Left Arrow = Look to left
Shift + Up Arrow = Looks to Front
Shift + Right Arrow = Look to Right

Simulation Speed

S = Slower
F = Faster

Control

Alt + F = Freeze
Alt + Q = Quit
Alt + H = Help

Engine Sound

E = On/Off

MOUSE CONTROL

Manipulation of **ELITE** controls are simple but may require practice. The mouse cursor is a hand.

Press buttons, grab knobs or slide switches by placing the virtual "fingertip" on the button, knob or switch on the instrument panel and pressing the left mouse button and moving the mouse left or right (called click and drag). Operation is the same for stacked knobs or bezel rings. The fingertip is used as you would use your finger in the cockpit.

To move an actuator such as flaps or gear handle, move the fingertip over it, press and hold the mouse button (as if seizing the actuator in the cockpit), drag it to the desired position and then release the mouse button.

Always hold the mouse perpendicular to the computer display. This is best accomplished by sitting in front of the screen and holding the mouse at about the position where the power controls are mounted, relative to the cockpit seat. If you hold the mouse at the wrong angle, the hand does not move in a natural way.

Pushing Buttons:

Push Buttons control many cockpit functions, and in **ELITE**, they appear three dimensional. Version XTS improves the recognition of push / toggle buttons as well as knobs and switches. Control sensitivity on the instrument panel can beviewed instantly when you press the Ctrl or Shift key.

- Red: Button to click
- Blue: Knob (drag from bottom-left to top-right)
- Magenta: Switch/Wheel (drag from bottom to top)
- Cyan: Switch/Wheel (drag from left to right)

Press SHIFT key to show sensitive areas on the instrument panel

Press CRTL key to show sensitive areas on the instrument panel

A **Push Button** is activated by moving the fingertip over it and pressing the mouse button. Any button that is in its *down* or *on* position appears *"pushed-in,"* a button in its *up* or *off* position appears *"popped-out."* Some push buttons are *toggle buttons*. They remain *down* or on once they have been pushed. To release a toggle button just push it again. Some buttons also light up when pushed in and others are labeled with text or a symbol, indicating their operation.

Knobs and Rotary Dials:

Knobs and rotary dials are common types of devices in a cockpit. They are used, for example, to set the heading bug and the Course Deviation Indicator (CDI) on the HSI, or to set radio frequencies. Rotary dial functions are simulated in ELITE by knobs and push buttons.


Rotary Dials are activated by positioning the fingertip cursor on the edge of the dial, holding the mouse button down, and then moving the mouse diagonally. Right movement turns the dial to the right (clockwise) and increases numbers, movement to the left has the opposite effect. In order to continue turning, a rotary dial changes to "**auto scroll**" when the fingertip is held at the edge of the screen and can't be moved further. The button keeps turning as long as the fingertip stays at the edge area or as long as the mouse button is held.

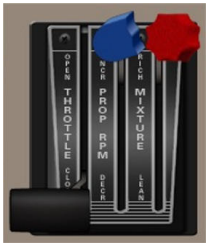
NOTE: An alternative to changing avionics frequencies is to click on the numbers themselves. Clicking on the right side of the number decreases and clicking on the left side increases the numerical count.

Switches:

Switches work similarly to push buttons. Click on them to operate like a typical rocker switch.

Power Levers:

In the **ELITE** cockpit, power levers are graphically modeled and colored according to those in the aircraft, like throttle, propeller (RPM), mixture, flaps and gear.



Operate the levers by moving the fingertip cursor over the lever, press and hold the mouse button, then drag the lever up or down by moving the fingertip. Release the mouse button when the settings are as desired.

Wheels:

Rudder and elevator trim wheels are operated like levers. Move the fingertip cursor over the wheel, press and hold the mouse button, rotate the wheel by moving the fingertip. Release the mouse button when the settings are as desired.

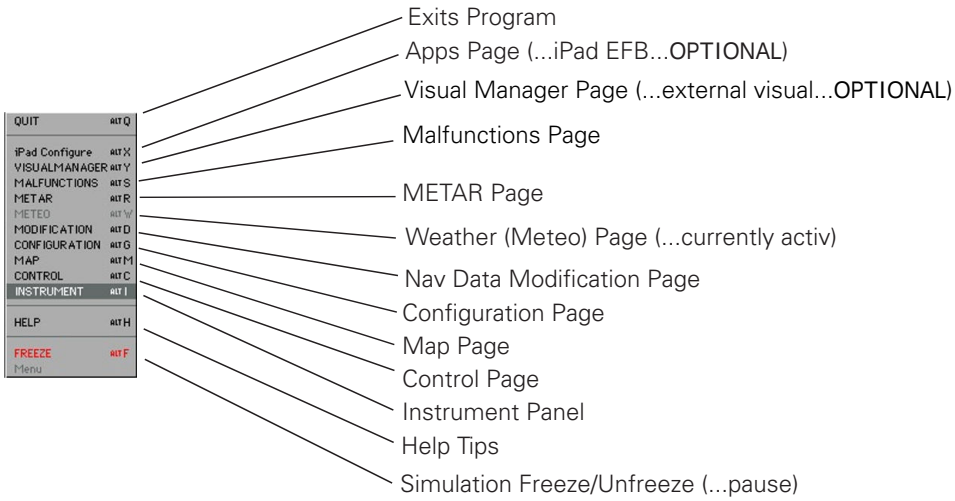
NOTE: The mouse "holds" the lever or wheel as long as the mouse button is held, even after the fingertip has left the lever or wheel symbol.

PROGRAM MENU

After starting the program, you will enter the simulation in the cockpit (in front of the Instrument panel).

A right click in within the instrument panel or on any area of the additional pages opens a pop-up menu on the mouse pointer position. As you move through each selection, the item to be opened will be highlighted. Keyboard shortcuts are listed beside their corresponding menu item. For shortcuts, hold the keyboard **ALT** key and the designated letter. CAPS Lock should be OFF.

NOTE: The simulation is in the FREEZE mode if red blinking FREEZE word is displayed on top left corner



The following is only an overview of the MENU layout. For detailed capabilities and operations, see Chapter 4, Program Features.

MALFUNCTIONS PAGE

The MALFUNCTIONS Page is used to create failure scenarios. You have the opportunity to selectively or randomly fail individual instruments, systems, avionics, engines, gear, flaps and more.

METEO PAGE

The METEO (meteorological) Page is used to create the weather environment. Various parameters such as visibility, ceiling, wind, turbulence, pressure and temperature can be adjusted as desired.

METAR PAGE

The METAR Page is used to download real-time weather reports from METAR reporting stations for use in ELITE GenView. When

METAR weather is "engaged" (activated) to function in ELITE, the weather dynamically changes when flying between METAR reporting stations and METAR time.

MODIFICATION PAGE

The MODIFICATION Page is used to add, delete or modify navigation data base facilities.

Fifty modifications/additions are possible for **each** navigation data base. The US is divided into 9 areas.

CONFIGURATION PAGE

The CONFIGURATION Page is used to:

- set ELITE start up preferences
- adjust control sensitivity
- change units of measurement for fuel and weight
- turn sounds on/off; adjust volume levels
- calibrate steering devices
- load new aircraft modules and
- save instrument configurations where applicable.

Aircraft operational characteristics and limitations are also shown (but cannot be modified).

MAP PAGE

The MAP Page is a graphical representation of the flying area showing navigation facilities, frequencies, lat/long, runways, boundaries and much more. An aircraft symbol shows the flight path in real time (both horizontal and vertical profile views) that can be replayed, saved and printed for evaluation. Over 15 map features can be displayed at 8 separate zoom levels. The aircraft flight parameters (magnetic heading, altitude and IAS) can be set from the map page. In addition, you can also save and load training states or load ATC scenarios.

CONTROL PAGE

The CONTROL Page allows you to set date and time of day, airport lighting features and runway markings. Activate/deactivate yaw control(for using rudder pedals), adjust fuel loading and aircraft weight configuration. Save and load training situations you created (training states) or load ATC scenarios.

INSTRUMENT

Selecting INSTRUMENT brings you back to the chosen aircraft's instrument panel (cockpit) on single monitor setups.
On multi-monitor setups the instrument panel is always displayed.

FREEZE

The FREEZE selection suspends the simulation. Aircraft parameters (i.e. power settings, frequency changes, OBS selections, etc.) can still be changed. When first entering **ELITE**, the program is in the FREEZE mode as indicated by a red "Freeze" label on the instrument upper left corner.

QUIT

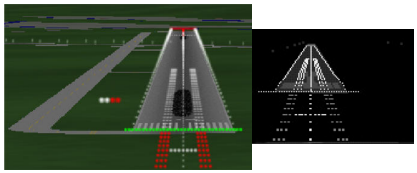
Selecting QUIT ends the program and returns you to the operating system.

INSTRUMENT SCREEN

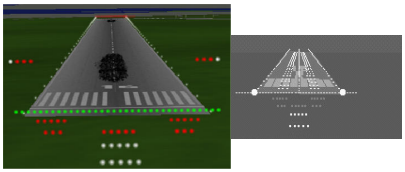
The instrument screen incorporates all particular items needed to pilot an aircraft. A cockpit window in the upper part of the screen offers outside views such as runway environments,ground and weather obstructions to visibility such as fog andlow ceilings. This area will become black when using an external visual system (optional).

NOTE: The runway considered active by **ELITE** *has its edge lights, centerline lights and approach lights on.* **ELITE** *determines the active runway based on the position of the aircraft and course relative to the runway, or in other words, the closest aligned runway with the aircraft. Depending on environmental settings, lighted runways can appear gradually out of fog.*

As the aircraft descends below the programmable cloud base, the runway and ground become visible.
See Chapter 4, Program Features, for information on changing and customizing environmental conditions.



This window shows a runway with a British CALVERT II high intensity approach light system in a night approach. The visibility is set such that the entire runway is visible.



This window shows the scene at decision height on an ILS approach with minimal visibility to a runway with an ALSF high intensity approach light system (HIALS) in daylight.

Many aircraft use the same instruments and avionics configuration. Basic features of this equipment will be listed here. Any variations specific to aircraft models will be explained in that aircraft's section.

GENERAL INSTRUMENTS

ARTIFICIAL HORIZON

The Artificial Horizon or attitude indicator is the most important instrument in the cockpit for instrument flying. It displays pitch and bank in the usual way. Pitch lines are spaced 5° apart.

AIRSPEED INDICATOR

The Airspeed Indicator (ASI) is indicated in knots on the ASI instrument. The white, green, and yellow arcs as well as the red line have the standard meaning. True airspeed may be calculated by applying the usual techniques assuming ISA temperature. Airspeed indicator window adjustments for TAS function on some **ELITE** aircraft. If the airspeed indication should decrease without speed reduction, the "Pitot" may be iced. In order to prevent "Pitot" icing, turn on the **PITOT HEAT**.

TURN INDICATOR

The Turn Indicator (Turn Coordinator) is actually a combination of two instruments. The aircraft symbol indicates rate of roll and

rate of turn and is proportional to the roll rate. When the roll rate is reduced to zero, the instrument provides an indication of the rate-of-turn. The marks stand for a standard rate-of-turn (3° per second). The ball reacts to gravity and centrifugal force to indicate the need for rudder application.

ALTIMETER

The Altimeter which is shown on the picture, is a conventional three-pointer type, but the type can vary. The air pressure is indicated in inches Hg (on the rightside) and millibar in hPa (on the leftside). Be aware that the instrument only shows the true altitude when its pressure setting corresponds to the QNH setting in the Environment panel on the Meteo screen.

VERTICAL SPEED INDICATOR

Vertical speed indicators are instantaneous and non-instantaneous, the latter exhibiting trend and lag effects. The image to the right shows a non-instantaneous vertical speed indicator.

GYRO COMPASS

The Gyro Compass indicates the actual heading. It has a turning compass card. The directional gyro (DG) is not slaved with the compass and will precess. As in the actual aircraft, it must be adjusted.

The orange arrow (heading bug) can be set with the rotary dial at the bottom right.

The DG/ADF configuration can be changed to an HSI/ RMI configuration in some ELITE aircraft such as the Piper Arrow IV. See
the Aircraft Information section on how to do this.

HORIZONTAL SITUATION INDICATOR

The Horizontal Situation Indicator (HSI) is connected to the NAV1 receiver. It consists of a turning compass card, a yellow course pointer (CDI) turned by the left rotary dial, an orange heading bug moved by the right rotary dial and a yellow glide slope mark on both sides (when on ILS). The actual course is indicated by the white lubber line on the compass card. The HSI replaces the standard directional gyro the Course Deviation Indicator (CDI) in the aircraft's panel, combining slaved heading and VOR/LOC/Glideslope deviation information into one compact display.

This HSI is set to an ILS

This HSI is set to a VOR

NOTE: A red HDG or NAV flag indicates absence of station reception or malfunction of the receiver.

COURSE DEVIATION INDICATOR

The Course Deviation Indicator (CDI) is of the conventional cross-pointer layout. It is connected to the NAV receivers (NAV1 or NAV2). The CDI compass card is rotated by the rotary dial.

This CDI is set to a VOR

This CDI is set to an ILS

RADIO MAGNETIC INDICATOR

The Radio Magnetic Indicator (RMI) incorporates a slaved (self-rotating) compass card, a green single pointer, and a yellow double pointer. The green single pointer may be switched between NAV1 receiver and NAV2 receiver. The double-line pointer is pointing to the ADF receiver. If any navigation set is not receiving a valid signal from a station, the corresponding needle is parked in the horizontal position.

MOVING DIAL INDICATOR

The Moving Dial Indicator (MDI) is connected to the ADF receiver. It is an improved Relative Bearing Indicator (RBI) which has a fixed 360° compass card, whereas the compass card of the MDI can be turned by the rotary dial. The actual **Variation**, which is the difference between magnetic and true North, is automatically picked up from the variation

of a navigation facility tuned in from a runway in the vicinity. **Bearing Pointer** indicates relative or magnetic bearing to station as selected by HDG knob. If the relative heading of north is manually selected under the lubber line by the pilot, then the bearing pointer indicates the relative bearing to the station. If the aircraft's magnetic heading is selected under the lubber line by the pilot, then the bearing pointer indicates the magnetic bearing to the station.

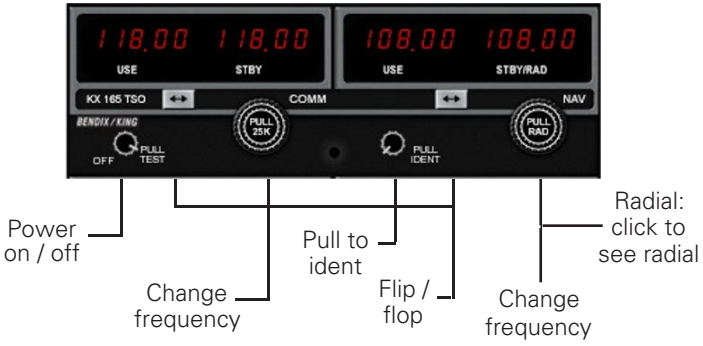
RADIO NAVIGATION RECEIVERS

ELITE is equipped with up to five radio navigation equipment receivers and two communication receivers. The two "NAV" receivers are combined with the "COMM" receivers (COMM1/NAV1), (COMM2/NAV2).

NAV/COMM

On the "COMM1/NAV1", "COMM2/NAV2", and the "ADF" receivers,

Nav / Comm KX 165 TSO

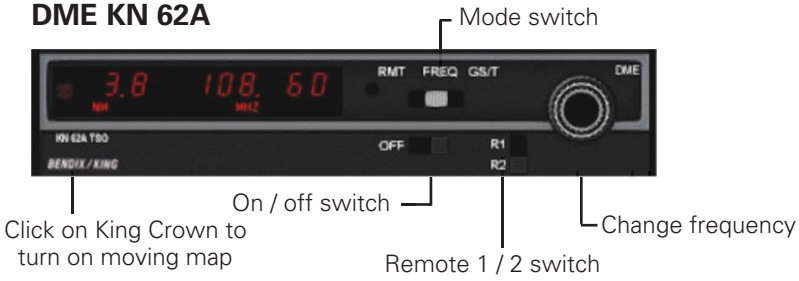


the right window displays the standby frequency and the left one displays the active frequency. Setting a frequency is done in the same way as on a real receiver. Use the rotary dials to count up or down the standby frequency, or click on the numbers themselves (Clicking on the right side of the number decreases and clicking on the left side increases the numerical count). Pushing the double-arrow button will toggle ("flip-flop") the frequencies. Each receiver may be switched on and off individually by dragging the **ON/OFF** button. The receivers are initially all on. The identification code of the currently selected "NAV" station will be audible over the computer's built-in speaker, or external speakers, while the **ID** button is pressed.

When the **RAD** button (Radial) on the NAV1 or NAV2 receiver is activated, the actual radial from the VOR station is displayed in place of the standby frequency and you set with the rotary dials direct the active frequency. There is, of course, no radial available when an ILS frequency is tuned.

DME RECEIVER

DME KN 62A



Frequence Mode:

Distance and selected frequency are displayed.

The DME receiver is in the frequency mode by default. It is then channeled internally with its own two concentric frequency selection knobs (rotary dials) which count up or down the active frequency. If a tuned station is DME equipped the relative distance to the station is indicated.

GS/T Mode:

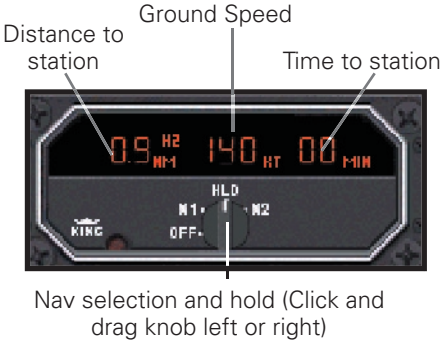
Distance, Ground Speed and TTS are displayed.

Activating the **Ground Speed** (GS) button results in displaying the Ground Speed relative to the DME station (in knots) instead of the DME frequency. In addition, the **Time-to-Station** (TTS) is displayed. Rotating the frequency selector will have no effect on the display, because the DME is in *"Frequency Hold."* This mode prevents accidental rechanneling of the DME when the frequency is not displayed.

RMT Mode:

Distance, Ground Speed and TTS of remote frequency are displayed.

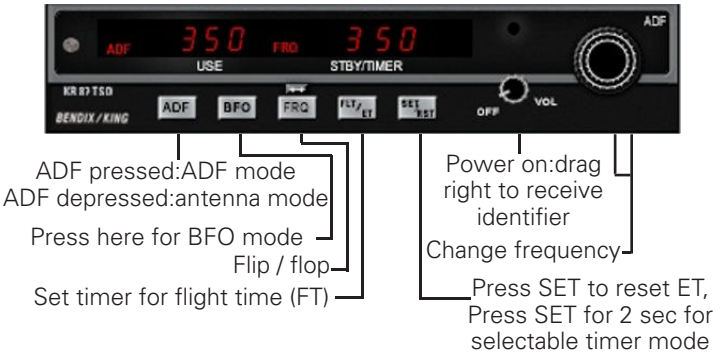
By activating the **R1** or **R2** button, the corresponding frequency is automatically taken from the NAV1 or the NAV2 receiver. Search time is about one second. When no ground station can be



locked, *"dashes"* will be displayed. Distance, Ground Speed and TTS are only available if the station remotely tuned is DME equipped.

ADF RECEIVER

ADF KR 27 TSO



The Automatic Direction Finder Receiver (ADF) in **ELITE** selects a Non Directional Beacon (NDB) in the frequency range ±600 Hz around the frequency set. This means that, for example, an NDB with a frequency of 371.5 kHz may be received with the ADF set to either 371 or 372.

NOTE: When a receiver is tuned to a frequency, the closest NAVaid with this frequency is received. When two facilities in the same area have identical frequencies, **ELITE** *will show a dialog box to select the desired one.*

MARKER RECEIVER

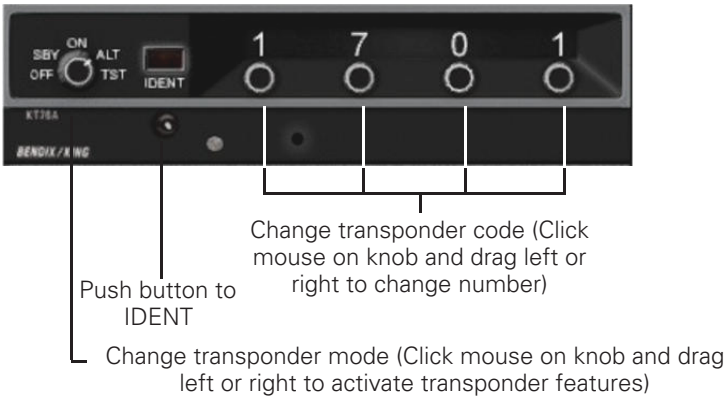
The Marker Receiver can be switched to LO, HI and TEST. The LOW selection may be made to set marker reception to low sensitivity, i.e. markers will only receive data at a short distance, such as during the approach. The marker lamp panel consists of the conventional: **A** lamp (white when lit, airway marker, inner marker), **O** lamp (blue when lit, outer marker), **M** lamp (amber when lit, middle marker).

When passing a marker, the appropriate identification code is heard while the corresponding marker lamp flashes. The duration of the

marker reception as well as the reception range depends on the type of marker.

TRANSPONDER

Transponder KT 36A



The Transponder is a radio transmitter and receiver which operates on radar frequencies. Receiving ground radar interrogations at 1030 MHz, it returns a coded response of pulses to ground-based radar on frequency of 1090 MHz.

SILVER CROWN PLUS AVIONICS SYSTEM

The Bendix/King Silver Crown Plus avionics system is an advanced version of the venerable Silver Crown avionics system used by ELITE. The Silver Crown Plus avionics system incorporates all of the familiar usefulness and functionality found in the previous system while introducing new features to enhance an already popular product.

The Bendix/King Silver Crown Plus avionics system is available for use in all ELITE aircraft modules. To use the Silver Crown Plus avionics system simply go to the CONFIGURATION Page of that particular aircraft module and select the Bendix/King Silver Crown Plus option from the item labeled Avionics Stack in the Instrument Configuration column. ELITE must be restarted to activate the Silver Crown Plus avionics system for use. The Silver Crown Plus avionics system will automatically be the default avionics system upon program start until another system is chosen to replace it.

Please refer to the ELITE USB Memory stick or the SUPPORT section of the ELITE website www.flyelite.ch for information and operating instructions pertaining to the Bendix/King Silver Crown Plus avionics system.

EFS 40 - EADI/EHSI

The Bendix/King EFS 40 is an advanced Electronic Flight Instrumentation System (EFIS) designed to meet the demands of today's complex flight environment. The actual real-world EFS 40 has numerous installation options/configurations that can be tailored to an individual aircraft and owner's preferences. The ELITE EFS 40 installation consists of the ED 461 control/display unit, ED 462 display unit, and the CP 470 control panel. The ED 461 and ED 462 function as the EHSI (electronic horizontal situation indicator) and EADI (electronic attitude direction indicator) respectively while the CP 470 is a separate control panel for the EADI. The EFS 40 EFIS is selectable in all aircraft currently available.

To select and add the EFS 40 EHSI by itself or the EHSI/EADI combination to any aircraft, simply go to the CONFIGURATION Page and select the corresponding option as desired under the Instrument Configuration column. Press and HOLD the mouse button over the small down-arrow under HSI/ADI to view available options. Movethe mouse cursor over the desired selection and release the mouse button to select.
Once the selection has been made, press and HOLD the SAVE button at the top of the Instrument Configuration column.

Holding the SAVE button will save the selection(s) and quit ELITE in one step. Restart ELITE to use the new configuration changes.

The complete EFS 40 Pilot's Guide is on the Main ELITE USB Memory stick and is also available at www.bendixking.com or www.flyelite.com. Refer to the Pilot's Guide for specific operational techniques. Some of the EFS 40 functions are briefly outlined in the following diagrams. Please note that although most of the actual EFS 40 features/functions have beenimplemented in the ELITE EFS 40 unit, due to the numerous real world installation options/configurations possible, not all features/functions are available.

EADI

EHSI

System 1-2 Select

NAV source Select

360 Mode Select

Course Select/Direct To
Click on center of knob to automaticallly set course pointer and digital course readout to the direct course of the selected NAVAID or active waypoint.

RANGE Select

ARC Mode Select

Heading Select/Sync
Click on center of knob to automatically set heading bug to current aircraft heading

#1 Bearing Pointer Select

#2 Bearing Pointer Select

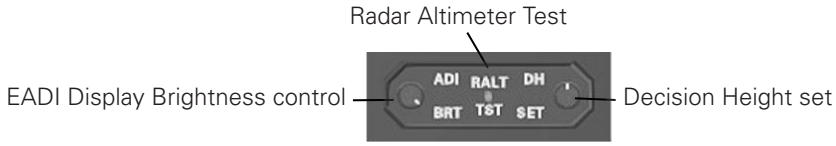
EHSI Display Brightness Adjust

CP 470 EADI Control panel

EADI Display Brightness Adjust

Decision Height SET

The EFS 40 EADI utilizes the CP 470 control panel pictured (below). Mode controls that are used with the EHSI are located on the periphery of the EHSI instrument itself.



"HEADING SYNC" feature: Click on center of knob to automatically set heading bug to current aircraft heading.

"DIRECT TO" feature: Click on center of knob to automatically set course pointer and digital course readout to the direct course of the selected NAVAID or active waypoint.

AUTOPILOT

KAP 150 / KFC 150

The KFC 150 and KAP 150 are both two-axis automatic pilot systems that operate almost identically. These autopilots each provide pitch and roll stabilization and automatic trim as well as automatic response to all selected autopilot modes. The only difference being the KFC 150 also has a flight director (FD) function. Since the KAP 150 does not have a FD function it uses a standard attitude reference without V-bar commands.

To use the KAP 150 and KFC 150 autopilots please follow these simple instructions:

Before each use please press the TEST button and wait for the system to perform its self-test function.

AP ENG:

The most basic form of autopilot operation is to engage only the autopilot engage (AP ENG) mode button. In this mode, with no other modes selected, the aircraft will maintain the pitch attitude existing at the time of AP ENG engagement and will fly with the wings level. Use of the vertical trim (UP/DN) switch in this mode will affect an approximate 0.9 degree per second pitch change.

HDG:

In heading (HDG) mode the aircraft will maintain the heading selected by the heading 'bug'. Be sure to place the heading bug in the desired position before engaging the HDG button, as the aircraft will immediately begin turning in the shortest direction toward the 'bug'.

NAV:

In navigation (NAV) mode the autopilot will intercept and track VOR courses. To use the autopilot with a conventional CDI-type VOR indicator first make sure the autopilot is in HDG mode and then tune the desired navigation frequency. Set the OBS to the desired course and then depress the NAV button causing the NAV indicator to flash signifying the mode is armed. Within five seconds move the heading 'bug' to the same value as selected on the OBS. The autopilot will then fly a 45 degree intercept heading until course capture whereupon the system will track the desired course.

NOTE: The NAV indicator will not flash if the NAV mode is selected while the aircraft is level within +/- 4 degrees and 2-3 dots of course deviation, but will rather go immediately into NAV mode directly.

To use the navigation feature of the autopilot with a HSI first tune the navigation frequency. Use the Course Set Knob to select the desired course line value. Set the intercept angle by placing the heading 'bug' on the desired heading and press the HDG button, if not already in HDG mode. Now press NAV button and fly the selected heading until course capture. The NAV light will flash until course interception to indicate that it is armed. (See the NOTE above.)

APR / GS / BC:

To use the autopilot in approach (APR) mode first make sure that the system is in HDG mode if using a conventional CDI-type VOR indicator. Tune the appropriate ILS, LOC or VOR frequency. Set the OBS to the final approach course. (NOTE: if intending to fly a back course be sure to use the front course setting. Press the BC button after pressing the APR button.) Press the APR button causing the APR light to flash indicating it is armed. Turn the heading 'bug' to the inbound course within five seconds. The system will fly a 45 degree intercept heading until capturing the course. If flying an ILS the GS will be captured automatically causing the GS light to illuminate.

If using the APR mode with an HSI please tune the appropriate ILS, LOC or VOR frequency first. Use the Course Set Knob to set the desired final approach course. Turn the heading 'bug' and press the HDG button if not already in HDG mode. Press the APR button. The autopilot will fly the desired heading until course capture. The BC and GS features operate the same way as described above.

ALT:

To operate in altitude hold (ALT) mode first fly to and level off at the desired altitude and then press ALT. Altitude adjustments may be made in ALT mode by using the vertical trim (UP/DN) switch. Moving this switch in either direction while in ALT mode will cause the aircraft to climb or descend at approximately 500 fpm. When the switch is released the autopilot will maintain the new altitude.

CWS:

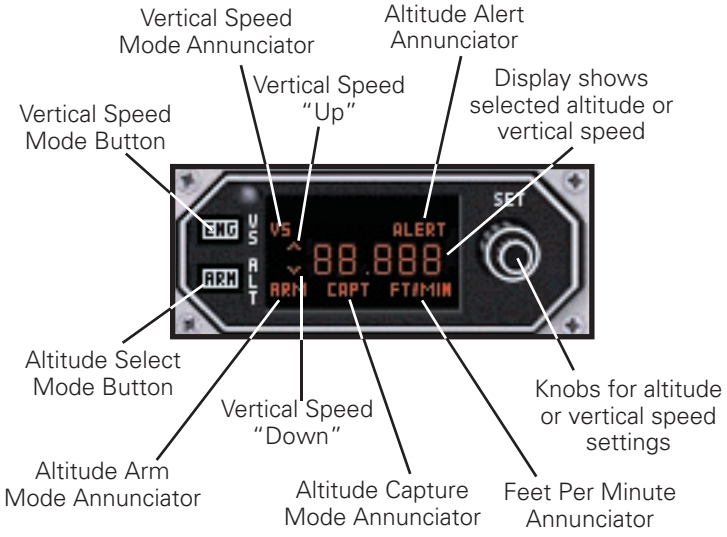
The control wheel steering (CWS) button located on the control yoke allows the pilot to maneuver the aircraft in pitch and roll without disengaging the autopilot. The autopilot resumes control when the button is released.

FD: (KFC 150 only)

The KFC 150 has a flight director (FD) function that the KAP 150 does not. ELITE aircraft modules using this autopilot have a V-bar that appears on the attitude indicator anytime the FD or AP ENG features are selected. If the FD function only is selected the V-bar will command

the user to make control inputs to satisfy the system requirements by maneuvering the orange delta wing into the V-bar.

ALTITUDE/VERTICAL SPEED SELECTOR



This feature is available only with the Bonanza, Baron, Seneca III and King Air (King radio option) aircraft modules only. The KAS 297B offers the user the ability to pre-select altitudes and vertical speeds while using the autopilot.

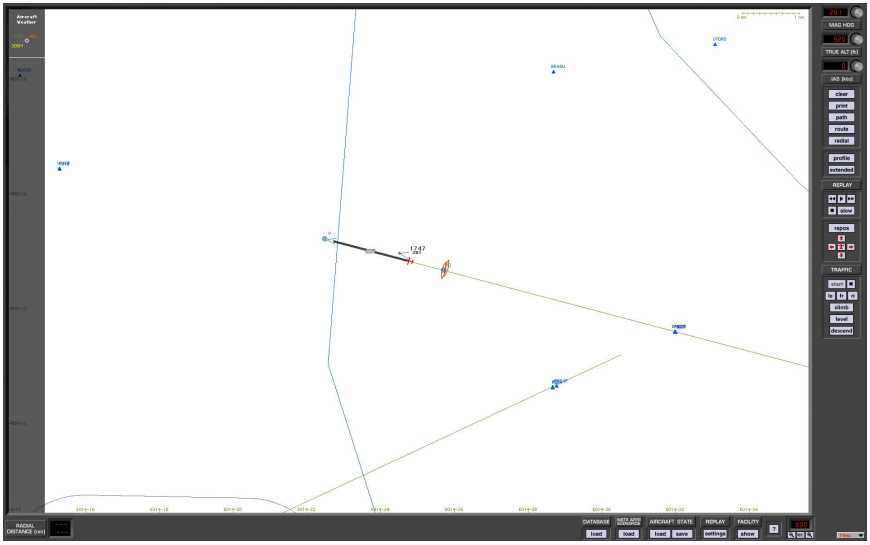
Altitude Pre-Select - to pre-select an altitude the unit must first be indicating FT. If it is not then either push in the inner concentric knob if using a mouse or flip the toggle switch to ALT if using an ELITE avionics panel. Using the knob(s), choose the desired altitude and then press the ARM button to arm the altitude capture mode. This will cause ARM to appear on the indicator. Use pitch attitude hold or select a vertical speed to guide the aircraft to the desired altitude. As the aircraft nears the desired altitude the system computes a roundout and will indicate altitude capture (CAPT) as the aircraft levels off. Once the aircraft has leveled off the vertical speed mode disengages and the CAPT indication disappears.

Altitude alerting is provided by the KAS 297B and alerts the user with a two second aural tone at +/- 1000 ft from the target altitude. An ALERT annunciation comes on with the tone and stays on until 300 ft from the target altitude. The aural tone also sounds again for two seconds when the aircraft reaches its selected altitude. The system also provides an aural warning any time the aircraft's altitude varies more than 300 feet from the selected altitude after level off.

Vertical Speed Pre-Select - to pre-select a vertical speed the unit must first be indicating FT/MIN. If not, pull the inner concentric knob when using a mouse or flip the toggle switch to V/S when using an ELITE avionics panel. Use the knob(s) to select the desired vertical speed. The indicated up/down arrows show whether a climb or descent has been selected. To engage the selected rate press ENG and VS will appear on the indicator. Engaging the vertical speed function will cancel the ALT mode if being used. There are several ways to change the rate of vertical speed once the function is engaged:

1. by rotating the knob while in V/S mode
2. by pressing the CWS button on the yoke and pitching to a new vertical speed value
3. by pressing the vertical trim switch on the autopilot. Using the vertical trim switch will affect a 100 feet per minute change in vertical speed for every second it is pressed

MAP PAGE



MAP page

"HELP Tips" are available anytime by pressing ALT-H. Move the help cursor (?) over any on-screen item that you would like more information about. When the help cursor reveals its document icon help is available for that item. Simply click on the item to display related help tips.

The MAP page is ***ELITE***'s command center. Its use is primarily to setup the aircraft's initial position for a given flight or procedure and to review the flight once you have finished flying. Systems equipped with a separate Instructor's Station monitor can also use the MAP page to monitor the progress of a flight in real time. You will probably spend more time using the MAP page than any other page in the software (other than the instrument screen of course).

Similar in appearance to an IFR Low Enroute chart, and laid out in approach plate-like format, the MAP page is familiar and easy to navigate. The main part of the MAP page displays the active (loaded) navigation region(s) and corresponding facility elements in plan (bird's-eye) view. Airports, runways, VORs, NDBs, airways, fixes, markers, DMEs, localizers, glideslopes, Flight Information Region (FIR) boundaries, country borders, comments and communication frequencies are all graphically and/or textually represented. Pressing the Profile button brings up a profile view (similar to the profile view on an approach plate). Other knobs, buttons, and data windows located around the periphery of the main map display are used to control the following items, discussed in detail later in this section.

- Aircraft HEADING
- Aircraft ALTITUDE
- Aircraft AIRSPEED
- Flight path CLEAR
- MAP Page PRINT
- Flight PATH save/load
- ROUTE save/load
- RADIAL (compass rose) display
- PROFILE view display
- Flight path REPLAY
- Aircraft REPOSition
- DATABASE (Nav region) load

- IAS (Instrument Approach Scenario) load
- AIRCRAFT STATE save/load
- REPLAY settings
- FACILITY display
- ZOOM

AIRCRAFT POSITION

The red aircraft symbol shows the actual **aircraft position**.

Geographical coordinates of the current view area appear in green and are located on the left side and bottom of the map for reference.

MAP SCALE

The actual scale of the Map is indicated on the top right of the screen. The scale appears in green.

The scale indication changes according the actual MAP view level, which can be changed with the **ZOOM** function.

NAV DATA SYMBOLS

The following **Nav Data Symbols** are visible on the Map page.

FIX (with identification)

NDB (with identification)

VOR (with identification)

VOR DME (with identification)

DME (with identification)

Holding (with direction arrow)

Glide path Track

Marker

Localizer (yellow) transmitter

Glideslope (red) transmitter

Runway with displaced threshold

Airport Symbol

COM Communication frequencies

MAP CURSORS

The **cursor** changes for different functions on the MAP page

NOTE: ***Alt*** *key references are for Windows.*

Normal cursor (fingertip)

Zoom in cursor (Alt Key)

Zoom out cursor (Shift-Alt)

Zoom limit (either enlarging or reducing)

Heading/Distance (Shift key)

Add point (Route planner) (Control key)

Remove point (Route planner) (CTRL-ALT Option)

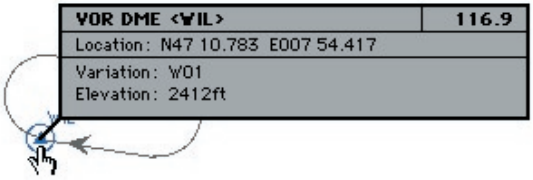
Change/Move Point (Route planner) (Shift-Control keys)

Active Runway

Click on the ? box for other shortcuts.

MAP INFORMATION

All elements displayed on the MAP page contain information applicable to that specific element such as variation, frequency, runway length, width, lighting, etc. To access information regarding a specific MAP element, click and hold on it with the mouse. For runway information, click on the runway's threshold.



In the example above, several facilities nearly occupy the same location or are co-located. Information on these facilities is layered. Clicking the same spot repeatedly cycles through these layers to reveal information about each specific facility.

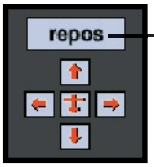
MAP BORDERS

Border types:

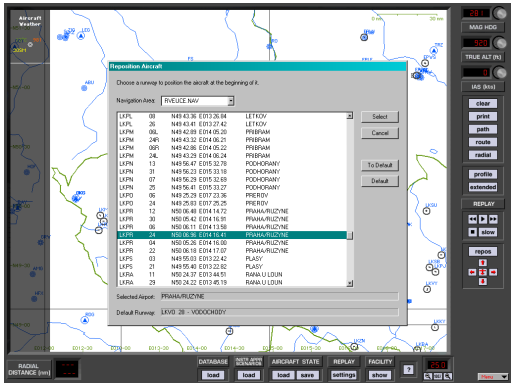
- Flight Information Region (FIR) borders appear in brown.
- Country borders appear in green.
- Waterways and lake boundaries appear in blue.
- States appear in gray.

REPOSITION

To easily reposition the aircraft to a specific airport and runway, click on the **REPOS** button located toward the bottom-right of the MAP page. A list of every airport in all currently loaded NAV databases will be listed alphabetically by ICAO airport location identifier (LOCID).



Click to reposition aircraft



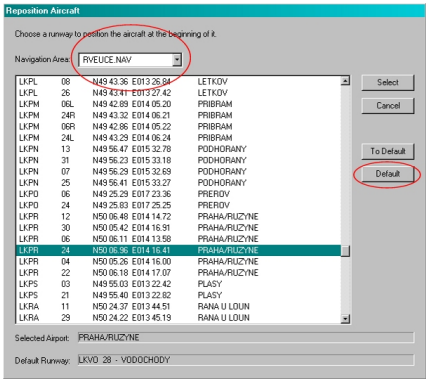
Choose:

If necessary, scroll until the desired airport identifier is visible. Select an airport and runway by clicking its identifier/runway combination. Notice that the airport/runway lat. lon. is now highlighted and the airport's name is indicated just below the scrollable viewing area. The example above shows Portland International (PDX) runway 10L selected. Click on **CHOOSE** to position the aircraft at the threshold of the selected runway.

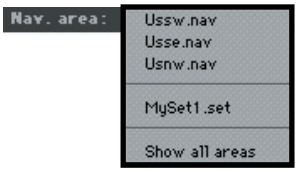
Cancel repositioning by clicking on **CANCEL**. You will return to the previous display.

Default Runway:

If you have a preferred airport/runway that you would like to be positioned at each time ***ELITE*** is started, you can designate a "default" airport/runway combination as described here.



It's first necessary to select the specific NAV database (or NAVset) that the desired default airport/runway is located in. Click and hold the small black arrow on the right side of the panel next to "Nav area" to open a drop-down menu of loaded databases and NAVsets. Move the finger cursor over the desired selection and release the mouse button to select it. In the example on the previous page, we have chosen to use "MySet1" (see "Creating NAV Sets" on page 216.) Click on the airport/runway you would like to make the default, then click **DEFAULT**. Notice the airport identifier and runway selected (**DEN 35R**) now appear in the "Default Runway" box at the bottom-left. To actually go to the default runway now (or at any time in the future) simply click on **TO DEFAULT**. With a default airport/runway now saved, ***ELITE*** will automatically position the aircraft there on each subsequent startup (assuming the same NAVdatabase/NAVset used to select the default airport/runway is utilized).



NOTE: You may choose one preferred (default) runway for each and every individual NAV database or NAVset. The default runway always remains associated with the NAV database or NAVset from where it was chosen. Since "MySet1" contained the USSW, USSE, & USNW databases, we could have chosen a default airport/runway for each individual database, in addition to the one created for the entire NAVset.

Manual Reposition

It is also possible to reposition the aircraft *manually* by **dragging the aircraft symbol** to a new location.

Do this by clicking on the aircraft symbol and moving the mouse while holding the mouse button.

If the desired new location is *outside* the current visible MAP area, the MAP will start scrolling when the aircraft symbol is brought toward the edge of the screen using the method described above.

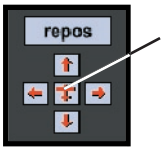
Aircraft Snapping

Bring the aircraft symbol near any runway threshold to "snap" to it. This will instantly place the aircraft on the runway threshold (at field elevation) of the runway "snapped" to. This is especially useful for quick repositioning from any location, altitude, heading, airspeed etc., *to* any specific airport runway. Although available at all ZOOM levels, this feature is much easier to use at HIGH (close-in) ZOOM levels, where the runway layout is clearly visible.

Map Scrolling:

Similar to the MAP scrolling described above while dragging the aircraft symbol, it's also possible to scroll the MAP view without dragging the aircraft symbol. This is accomplished by clicking anywhere on the **MAP page** NOT occupied by a facility or MAP element, and dragging the cursor (fingertip) toward the edge of the visible display. Scroll speed is controlled by varying the distance of the cursor to the edge of the screen and is dependent on the amount of data to be moved. The four "arrow buttons" (**UP**, **DOWN**, **LEFT**, **RIGHT**) located at the bottom-right of the display, and the cursor keys on the keyboard can also be used to scroll the visible MAP view. If your scrolling takes you away from the current aircraft position (i.e. to explore the surrounding area) and the aircraft is no longer visible, you can quickly locate the aircraft and re-center the MAP to it by clicking the red **aircraft symbol** surrounded by the four arrow buttons or pressing the "**c**" key on the keyboard.

Centering:



Click to locate aircraft

CTRL-click to bring aircraft to MAP center

Conversely, it is possible to move the aircraft to where you have scrolled. Hold down the **CTRL** (control) key on the keyboard and click the red aircraft symbol or just use the key combination (**CTRL-C**) by itself. The

aircraft will be brought to the center of the present map view. Following aircraft repositioning, Heading, Altitude, and Airspeed can all be adjusted as described in page 218.

MAP ZOOM LEVELS

Displays current ZOOM level controlled by I (in), O (out), and N (normal) keys respectively or "magnifying glass" buttons. When you first enter the MAP page, the display will be in normal zoom level, defined as the 100% view. Click on the **ZOOM IN** (🔍) or **ZOOM OUT** (🔍) buttons to increase or decrease the zoom level. The zoom percentage is indicated on the display relative to the *100% view* level.

Storing custom ZOOM Level:

You can store one custom ZOOM Level in addition to the preset ZOOM Levels (1, 5, 25, 50, 100, 250, 800, 1250). To store a custom ZOOM Level:

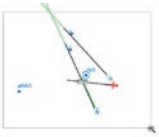
1. Select the area you would like to ZOOM on by holding down the ALT key and drawing a marquee around the desired area.
2. CTRL-Click in the ZOOM level window to store the custom ZOOM level created in previous step.
3. To ZOOM to this stored level again simply click in the ZOOM Level display window.

This custom ZOOM Level can be changed anytime by simply following the procedure above to overwrite with a new value.

NOTE: ZOOM level cannot be increased beyond 1250% maximum. With ZOOM level at maximum you will NOT be able to marquee a selection area to ZOOM in further. Marquee selection and ZOOM IN are disabled when maximum ZOOM level is reached. The ZOOM function is screen centered, NOT aircraft centered. If the aircraft is not in the

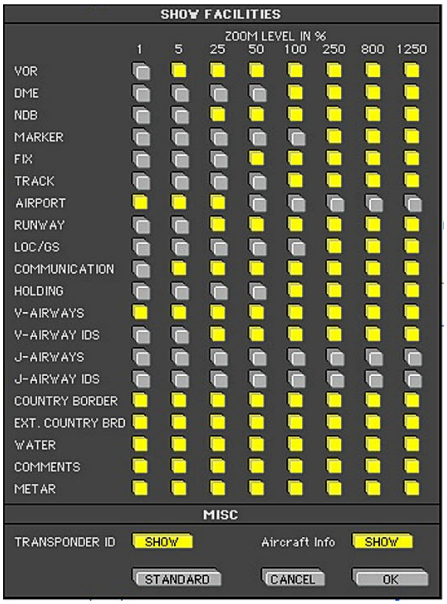
center of the MAP page and you ZOOM IN, the aircraft may be temporarily "lost." To "find" the aircraft and re-center the MAP page to it, click on the red aircraft symbol located near the bottom-right of the display.

You may zoom directly to an area of your choice (custom ZOOM) by tracing a rectangle around the perimeter of the area to be ZOOMed. Hold the **ALT** key, then click-and-dragto create an outline around the desired area. Release the mouse buttonfor the new ZOOMed view.



SHOW FACILITIES

Click on the **SHOW** button for the "Show Facilities" dialog box. Specific map details are displayed dependent upon ZOOM level. At high ZOOM levels for example, markers are visible and runways labeled with their magnetic direction. At lower ZOOM levels, certain map elements (facilities) are *not* displayed to prevent clutter and maintain map readability.



NOTE: You may determine which MAP elements (facilities) are displayed for corresponding ZOOM levels.

Click on the appropriate buttons to activate or deactivate the information to be shown in each ZOOM level. Yellow buttons indicate an active button.

- Click OK and your selections will take effect.
- Click CANCEL to return to the Map with no changes.
- Click STANDARD for a preset of active facilities.

TRANSPONDER TAG

In addition to the standard MAP elements (NAV facilities, airports, land borders, etc.) ***ELITE*** has the ability to display an information data block (transponder tag) that moves with the aircraft symbol. This tag is similar in appearance and function to one that might be found on an ATC radar scope. To enable this feature click on the TRANSPONDER ID **SHOW** button (it should turn yellow) located at the bottom of the **SHOW FACILITIES** dialog box. Although this tag will be visible anytime the MAP Screen is called up, users with an instructor's station (multi-monitor system) can observe it updating in real time as would an air traffic controller. Instructors can use this feature to aid in monitoring a student's flight progress by verifying the correct transponder code, heading, and altitude assignments.

The tag itself will appear dark-gray in color when the transponder switch is in the OFF or SBY (standby) position. With the switch in the ON position the tag will turn green (after sufficient time has elapsed for warm up). The tag will turn red when the **IDENT** button has been pressed.

The data block consists of two lines with a total of three fields. The upper line is the 4-digit transponder squawk code. The lower line displays

the aircraft *magnetic* heading and *indicated* altitude fields respectively. Note that the altitude will NOT appear unless the transponder switch is in the ALT (Mode-C) position.

MAP Page "Spot Weather" feature

The spot weather feature allows you to view the current WX conditions that exist at the aircraft's present position. The spot weather feature is especially handy when an instructor's station is being used as it allows the "instructor" to quickly ascertain the WX at any given moment without having to change screens and thus maintain uninterrupted monitoring of the student's flight. Outside air temperature (OAT), visibility, pressure, and wind will be displayed in a format similar to the "station model" symbology found on Surface Analysis charts. Please note that the reported pressure is the actual ambient pressure (not altimeter setting) at the aircraft's current altitude. Wind speed and direction are displayed graphically using a barb and flag system (see figure below connected to a "pole" that points in the direction FROM which the wind is blowing relative to True North. In the follow-ing example, the aircraft is at 3500 feet, wind is from the southeast at15 knots, OAT is 47° Fahrenheit, ambient pressure is 26.34 inches, and visibility is 25 statute miles. Note that unlike the station model used on Surface Analysis charts, no sky cover information is provided.

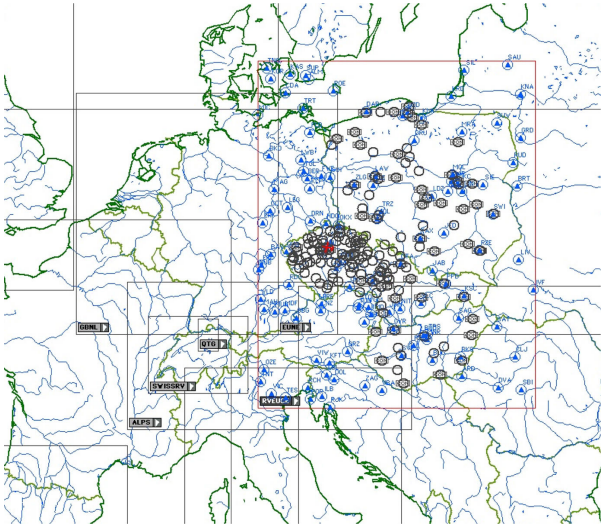
To turn ON/OFF aircraft spot weather simply click the FACILITY "show" button at the bottom of the MAP Page. On the "Show Facilities" dialog box click on the Aircraft Info "SHOW" button. This button is an ON/OFF toggle that will turn yellow when pushed in (ON). The spot weather

data appears at the upper-left corner of the MAP Page at the top of the shaded information display region.

NAVIGATION DATABASES

All airports, airport lighting, fixes, NDBs, VORs, localizers, glideslopes, communications data etc. are contained in regional navigation databases. This data must be loaded for use in the program.

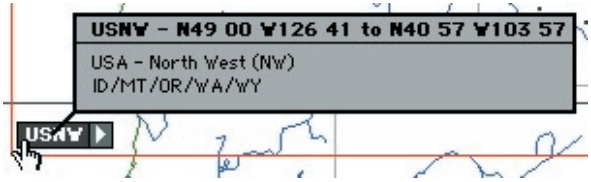
To understand the structure of the NAV databases, press the **ZOOM** out (🔍) button several times until an entire continent is visible. Using Europe (shown below) for example, notice there are boxes visible across the U.S. that define the regional boundaries of each NAV database. From this same view you can also determine if a specific NAV database (region) is loaded. Gray boxes indicate data is available but not loaded. Red boxes indicate the data within its boundary is loaded and ready for use.



Note: Each NAV database (region) is labeled for identification. The label (USNW) shown below is for the **U***nited* **S***tates* **N***orth* **W***est.*

NAV DATA Disclaimer: *We do our best to ensure the accuracy of the NAV data in the software. Unfortunately, inaccuracies originating from the data source are beyond our control and may be encountered at some point over time in the normal course of using the product. If you do encounter data that you feel is in error please make a note and let us know. The more information you can gather about the specifics of your experience, the better. Make note of data that is suspected missing, inaccurate, erroneous, or otherwise anomalous and notify us with the details. Thanks!*

Click and hold the mouse on **USNW** part of label for detailed information on that database.



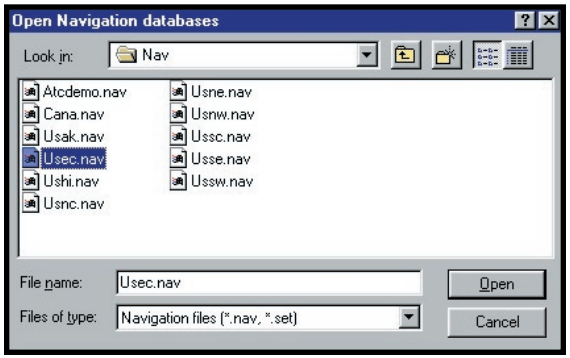
LOADING NAV DATA:

Click and hold on the arrow symbol part of the label. Move the cursor to **Load Database** and release the mouse button. When data has successfully loaded, the gray boundary box will turn to red. Click on arrow symbol once again and notice that **Load Database** is now grayed out and no longer available for selection but you can choose to release it (to free memory) or unlock it for modification (to be covered later).

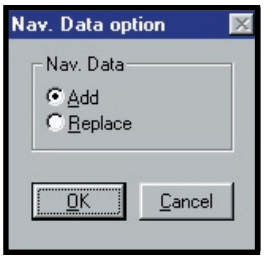
NOTE: Multiple NAV databases (regions) can be loaded simultaneously as desired. To load multiple databases, repeat the process described previously for each additional database.

Changing NAV Data:

Navigation databases can also be added or changed quickly by clicking the **DATABASE LOAD** button at the bottom of the MAP page. Choose a NAV database from those listed by double-clicking on its name, OR by clicking on its name then clicking **OPEN** to load. Databases NOT listed, which are located in other directories/folders, may also be used by navigating the correct path to locate them.



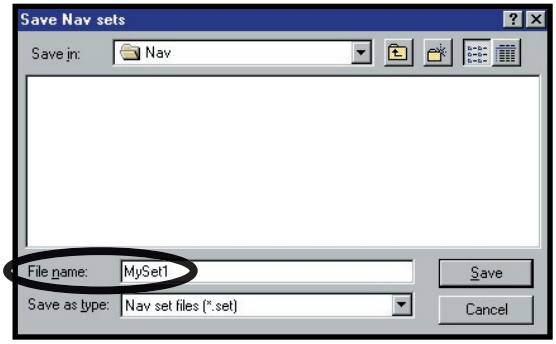
Following the **Open Navigation Databases** window, another smaller pop-up window will appear giving you the option to choose either add or replace. To Add the selected database to those already loaded, click on **ADD**. To replace a currently loaded database with the selected one, click on **REPLACE**. Click **OK** to complete the operation.



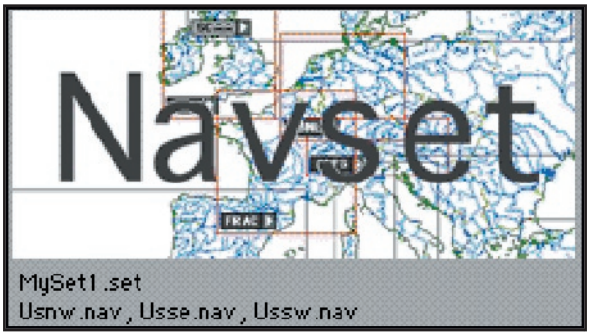
NOTE: The last database loaded with the **Load** *function is kept in memory and also used at the next startup.*

Creating NAV Sets:

As stated earlier, multiple NAV databases (regions) can be loaded simultaneously. These databases can then be saved collectively as one custom NAVset. You can save as many custom NAVsets as disk space will allow. Hold down the **CTRL** (Control) key on the keyboard and click on the **LOAD** button to display the following window:



You now may save all currently loaded databases as a NAVset. Type in a name for the NAVset and click **SAVE**. In the example above, we first loaded the USNW, USSE, & USSW database regions, then saved them as one custom NAVset named "MySet1." This NAVset will now appear with the other available databases and NAVsets at program startup. It will also be available for loading from the **Open Navigation Databases** window described earlier.



INSTRUMENT APPROACH SCENARIOS (IAS)

The Instrument Approach Scenarios (several add-on regions available) are scripted approach exercises flown in a simulated ATC environment. Each scenario begins with the aircraft at a predetermined altitude and generally positioned 15-20 miles from the IAF (Initial Approach Fix) of the selected approach.

Three sample scenarios are included with each ELITE package (an ILS, NDB, & VOR approach into Bakersfield, CA). Approach charts for the sample instrument approach scenarios can be found in the back of the ELITE Ops Manual or can be viewed with the HotPlates viewer (see page 240).

To load an Instrument Approach Scenario simply click on the "INSTR APPR SCENARIOS" load button at the bottom of the MAP Page. Contact your local ELITE dealer for further informations about the IAS-add-ons.

If necessary, open the appropriate IAS folder (EC3, SE3, etc.) for the region you would like to fly in. Select and open the desired Instrument Approach Scenario from those listed. NOTE: A description of each scenario can be viewed (before it is opened) by highlighting any scenario file name with a SINGLE MOUSE CLICK. Follow on-screen dialog box instructions to start scenario.

Important IAS notes:

Make sure to load and/or verify that the appropriate Navigation Database (IASEC3, IASSE3, etc.) is active **before** using the Instrument Approach Scenarios. For example, to fly a scenario in the EC-3 (Illinois/Wisconsin) IAS package, make sure to load the IASEC3 database.

The autopilot is ON by default at the start of each scenario. Keep the autopilot ON briefly to let the aircraft stabilize. After the aircraft stabilizes you can continue to fly the scenario utilizing the autopilot or you can disengage the autopilot and fly the aircraft manually.

Approach plates for the Instrument Approach Scenarios can be accessed by clicking on the approach plate icon on your desktop. The plates are in Adobe Acrobat® format (.pdf) and can be printed for more convenient use.

Whenever the program requires your attention you will here a series of alert tones. When these tones are heard, direct your attention to the information display area along the top of the screen for more information.

CTRL-R

Press CTRL-R to repeat the last ATC transmission directed at your aircraft. Your aircraft identification throughout the scenarios will always be N054EG. Listen carefully for this callsign and follow ATC's instructions to properly execute the approach.

CTRL-K

Press CTRL-K to acknowledge and/or answer a request from the program. One example of this might be if a controller asks you to "report field in sight." Since there is no way to actually converse with the virtual controllers, CTRL-K is used by the program as a communication trigger. This is similar to a quick double-click of a push-to-talk switch in a real aircraft (sometimes requested by ATC to verify communication).

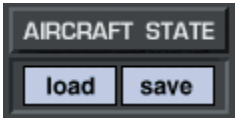
CTRL-S

Press CTRL-S to **disable** the automatic setting of radios by the virtual instructor (see next section).

Instructor Help

At the beginning of the each scenario the program will ask if you would like to have the help of an instructor. By answering "yes" to this option you will be inviting a virtual instructor into the cockpit. The virtual instructor will act more like the copilot or PNF (pilot not flying) in these scenarios, setting up essential radios and thus taking some of the workload. The virtual instructor will also provide tips along the way when appropriate which will be displayed at the top of the screen in the information display area. Always make sure to stay in the loop and check the inputs of the virtual instructor!

STATE PANEL

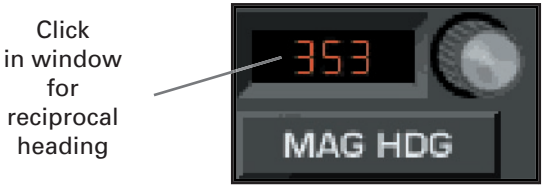


The state panel makes it possible to save and load aircraft "state" files. You can think of state files as a way to take a "snapshot" of the aircraft's state at any given moment in time. When you save a state file the aircraft's position, altitude, heading, airspeed, etc. are stored along with current avionics settings (frequencies, auto pilot configuration, etc.). In addition, you have the option of storing Navigation, Meteo (weather), and Malfunction data as well. The saved state file can then be loaded at any time in the future and instantly position the aircraft where it was (with the same settings) when the file was saved. State files are veryuseful when you want to practice the same approach, procedure, fl ight,or situation repeatedly. Individual pilots and instructors often create alibrary of state files, which allow them to conveniently return to a desired "lesson" without having to setup the aircraft again manually.

State files can be saved at any time. Before saving a state file make sure that the aircraft is set up just the way you want it. Once everything is to your liking be sure to name the state file something that will be meaningful now and in the future. A good naming convention is to include an airport identifier or nearby Navaid and brief description such as "ORL ILS RWY 7 Low Ceilings." Even if you haven't loaded this file in a while it will be easily identified as the ILS approach into Orlando Executive's runway 7 (with low ceilings). This is much better than "My first ILS."

HEADING PANEL

Aircraft **Heading** can easily be changed with the **MAG HDG** panel. Magnetic heading in degrees is displayed in the window next to the heading adjust knob. To change it, click and drag on the heading adjust knob until the desired value is indicated. Notice the red aircraft symbol on the **MAP** screen turns as heading is changed to reflect the actual indicated value. Click in the **Heading** window to instantly get the reciprocal of the displayed value.



ALTITUDE PANEL

Aircraft **Altitude** can easily be changed with the **TRUE ALT** panel. Altitude in feet (MSL) is displayed in the window next to the altitude adjust knob. To change altitude in 10 foot increments, click-and-drag on the altitude adjust knob until the desired value is indicated.

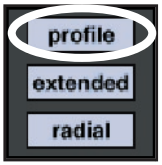
To change altitude in 500 foot increments, first single-click on the altitude adjust knob. The knob will push in. Click and drag on the altitude adjust knob for changes in 500 foot increments. The knob will reset in 5 seconds if there is no activity, or you can click on it a second time to reset it. Upon reset, the knob will pull out to its normal position and revert back to 10 foot increment adjustment.

AIRSPEED PANEL

Aircraft **Airspeed** can easily be changed with the **IAS** panel. Indicated airspeed in knots is displayed in the window next to the airspeed adjust knob. To change it, click and drag on the airspeed adjust knob until the desired value is indicated. Airspeed changes usually require some re-trimming of the aircraft upon switching back to the instrument panel. Set airspeed with attention to the particular aircraft's V-speeds. Speeds appropriate to the desired flight condition should be selected. Keep in mind that it is possible to dial in speeds near or below stall.

PROFILE BUTTON

Clicking the **PROFILE** button brings up the MAP profile. Similar to the profile view on an instrument approach plate, the MAP profile is a side view plot of aircraft altitude and flight path over time. The **PROFILE** button functions as a toggle switch turning the display ON/OFF. The display also contains distance marks corresponding to the DME station selected (when applicable) and shows the nominal glidepath when an ILS station is tuned in.



Profile View Options:

The **MAP profile view** provides several options for varying display presentation. These options let you tailor the appearance of the profile display allowing for improved flight analysis. The four buttons located at the bottom-right of the MAP profile display control these options.

Glideslope Limits:

The "**G**" (**glideslope limits**) button toggles the glideslope limits overlay ON/OFF. This overlay graphically represents the electronic glideslope signal limits of the specific approach flown. The "**G**" button and glideslope overlay only become available after the proper ILS frequency has been tuned in and the approach begun. Color coding is used to represent course deviation as follows:

Yellow lines = half-scale, Red lines = full-scale

Altitude Grid:

The "**A**" (**altitude grid**) button toggles the altitude grid lines. These lines are used in conjunction with (and are extensions of) the altitude scale markings on the right side of the profile display.

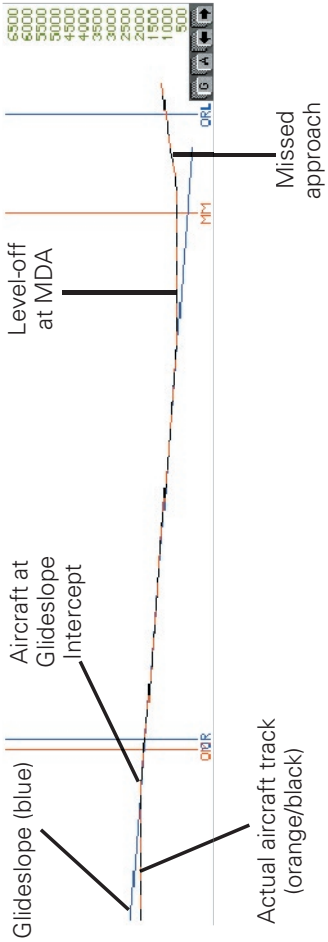
Profile Scroll:

The two **arrow** buttons are used to scroll the profile view left and right respectively, and operate independent of the main MAP view.

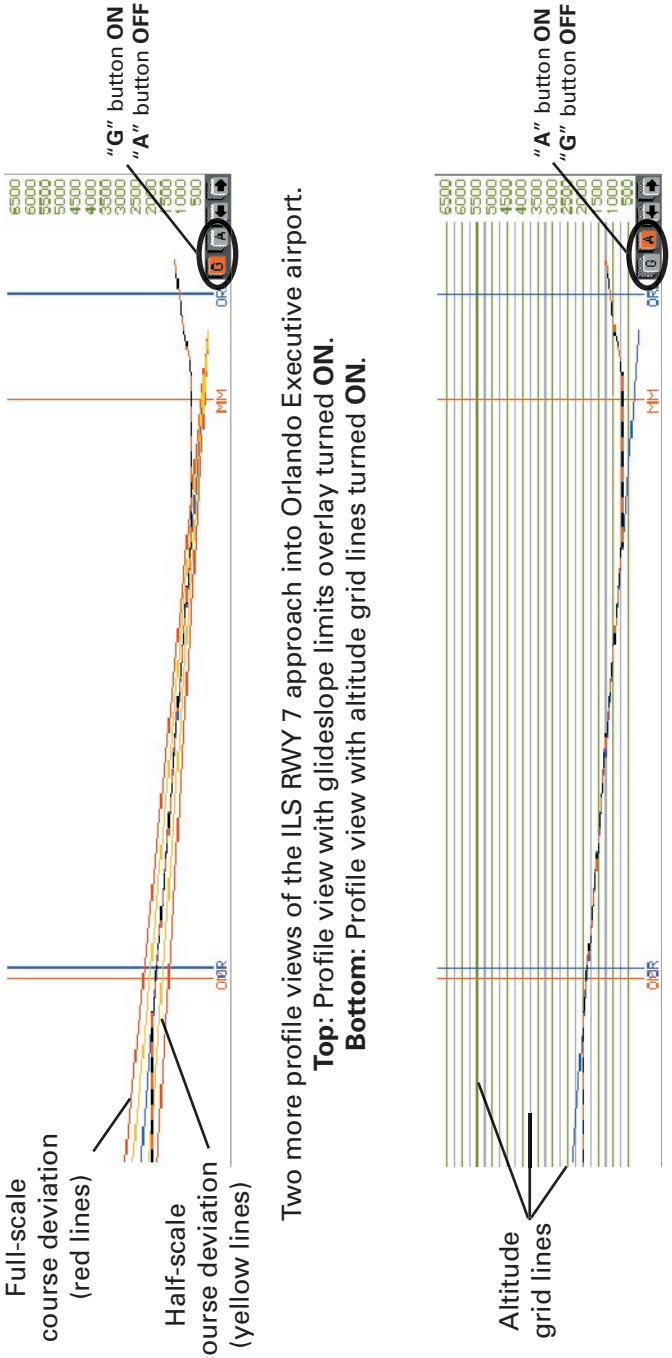
In combination with the four buttons pictured above, use the ZOOM functions (previously explained) to get more detailed MAP profile views. While LOW (distant) ZOOM levels are better for viewing the big picture, HIGH (close in) ZOOM levels are good for showing minute flight path and airspeed deviations.

Profile View Examples:

The following example profiles demonstrate several of the different view options described on the previous section. The profile was created flying the ILS RWY 7 approach into Orlando Executive (ORL) airport. For illustration purposes, the glideslope was tracked to the non-precision Minimum Descent Altitude (MDA) and NOT to Decision Height (DH). A level-off at MDA and subsequent missed approach was started shortly thereafter.



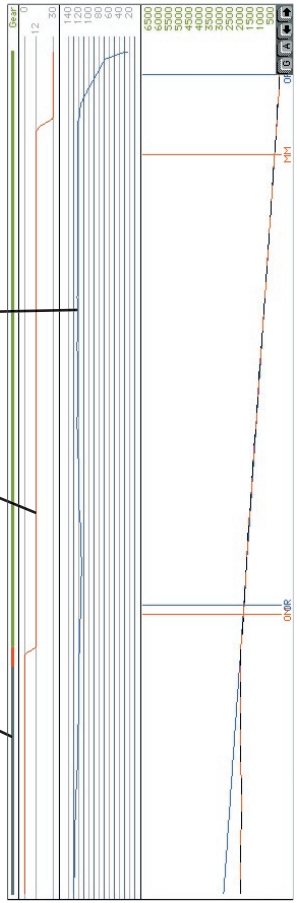
Profile view of ILS RWY 7 approach into Orlando Executive airport.



Two more profile views of the ILS RWY 7 approach into Orlando Executive airport.
Top: Profile view with glideslope limits overlay turned **ON**.
Bottom: Profile view with altitude grid lines turned **ON**.

EXTEND BUTTON

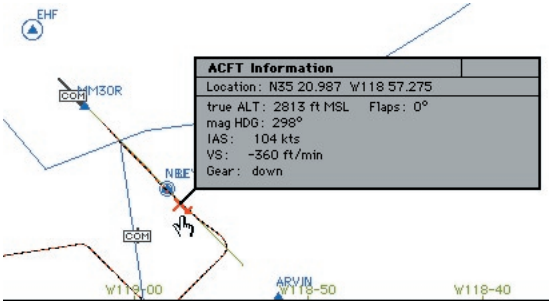
Clicking the **EXTENDED** button when the MAP PROFILE is displayed expands the profile view to include airspeed plot as well as gear and flap position graphs. The **EXTENDED** button functions as a toggle switch turning the expanded display ON/OFF. You can also click the **EXTENDED** button first (instead of the **PROFILE** button) to display all four (altitude, airspeed, gear, and flaps) profile sections immediately.



Expanded MAP profile view with **EXTENDED** button.
Notice gear, flap, and airspeed graphs in addition to altitude plot.

ACFT INFORMATION

While viewing the MAP profile, even more detailed aircraft information is accessible for any position along the plotted flight path. First verify ***ELITE*** is in the **FREEZE** mode and the replay function is not activated. Click and hold the mouse button inside the **profile area** to display detailed information for any position along the plotted flight path. A vertical line appears at the selected location in the profile and positions the red aircraft symbol (on the main MAP screen) to the place on the aircraft track corresponding to the selected profile location clicked on. Accompanying the red aircraft symbol is the **ACFT Information** box with data on location, altitude, heading, airspeed, vertical speed, gear and flap positions.



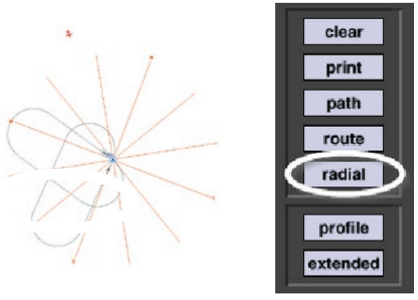
The red aircraft symbol and **ACFT Information** box are displayed as long as the mouse button is held inside the MAP profile.

NOTE: The "ACFT Information" box is not available during flight path replay.

RADIAL BUTTON

The **Radial** feature allows you to place a compass rose around any FIX or NAVaid facility in the database. Before clicking the **RADIAL** button look at the BEARING TO or RADIAL and DISTANCE windows near the bottom-left of the MAP screen. They should both have dashes in them. Now click the **RADIAL** button then click on any FIX or NAVaid in view

on the MAP. ***ELITE*** instantly draws a compass rose around the selected FIX or NAVaid. Notice at the same time that the dashes located next to BEARING TO or RADIAL and DISTANCE have been replaced by actual values. Click and drag the red aircraft symbol to different positions and watch the values change in these windows to reflect the actual BEARING TO or RADIAL (from) and DISTANCE relative to the selected FIX or NAVaid. This feature displays the exact aircraft location relative to the selected FIX or NAVaid and is helpful for quick, easy, and precise aircraft positioning. In addition, simple aircraft orientation can be demonstrated without "flying" or leaving the MAP page. To toggle BEARING TO or RADIAL indication, just click on the value displayed inside the adjacent window. In the example below, the compass rose is visible around the selected (UBG) VOR.



Click inside window to toggle BEARING TO / RADIAL

VIRTUAL FLIGHT DATA RECORDER

VCR style buttons control playback of the Virtual Flight Data Recorder (VFDR).

Replay:

As you fly, ***ELITE*** continuously records your progress with an integrated virtual flight data recorder (VFDR). All recorded flight parameters are accessed via the MAP Page. Flight path and profile, gear/flap position, airspeed, altitude and heading are all shown and available during the course of your flight. This same data can then be used to replay the last 60 minutes of the flight or saved as a "path" file for replay at any point in the future.

Play/Pause Button:

CLICK to START replay. **CLICK** again to PAUSE replay. Replay can begin at any point in the recorded flight path. Select a different Replay start point by moving the red aircraft symbol using the Rewind and Fast-Forward buttons.

Rewind Button:

CLICK-AND-HOLD to move BACKWARD through recorded flight path. **DOUBLE-CLICK** to jump to BEGINNING of recorded flight path.

NOTE: Profile and extended profile data traces will still be plotted from left-to-right even when rewinding.

Fast-Forward Button:

CLICK-AND-HOLD to move FORWARD through recorded flight path. **DOUBLE-CLICK** to jump to END of recorded flight path.

Slow Button:

CLICK to SLOW replay speed.

Stop Button:

CLICK to STOP Replay.

*NOTE: The "**ACFT Information**" box is not available during flight path replay.*

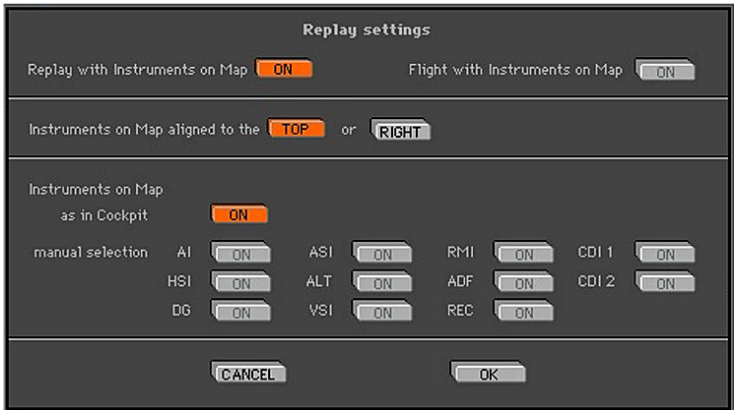
FLIGHT WITH INSTRUMENTS ON MAP

Cockpit instruments can be displayed on the MAP Page for real time reference and/or flight path replay and review. Real time instrument display is especially useful for systems with a "remote" Instructor's Station that is not in close proximity to the main system. Systems such as those with an enclosure often have the Instructor's Station physically located outside of the cockpit environment entirely. Installations with a remote Instructor's Station are common and often purposely designed to prevent the student from "peeking" at the Instructor's Station monitor (otherwise known as the Instant Situational Awareness Indicator). Such systems require an instructor to have to look some distance over-the-shoulder of the student if he/she wants to observe the instrument presentations. By having the instruments displayed on the MAP Page this problem is eliminated. The instructor no longer has to worry about the proximity of the Instructor's Station to the main system and can easily monitor the flight by concentrating solely on the MAP Page.

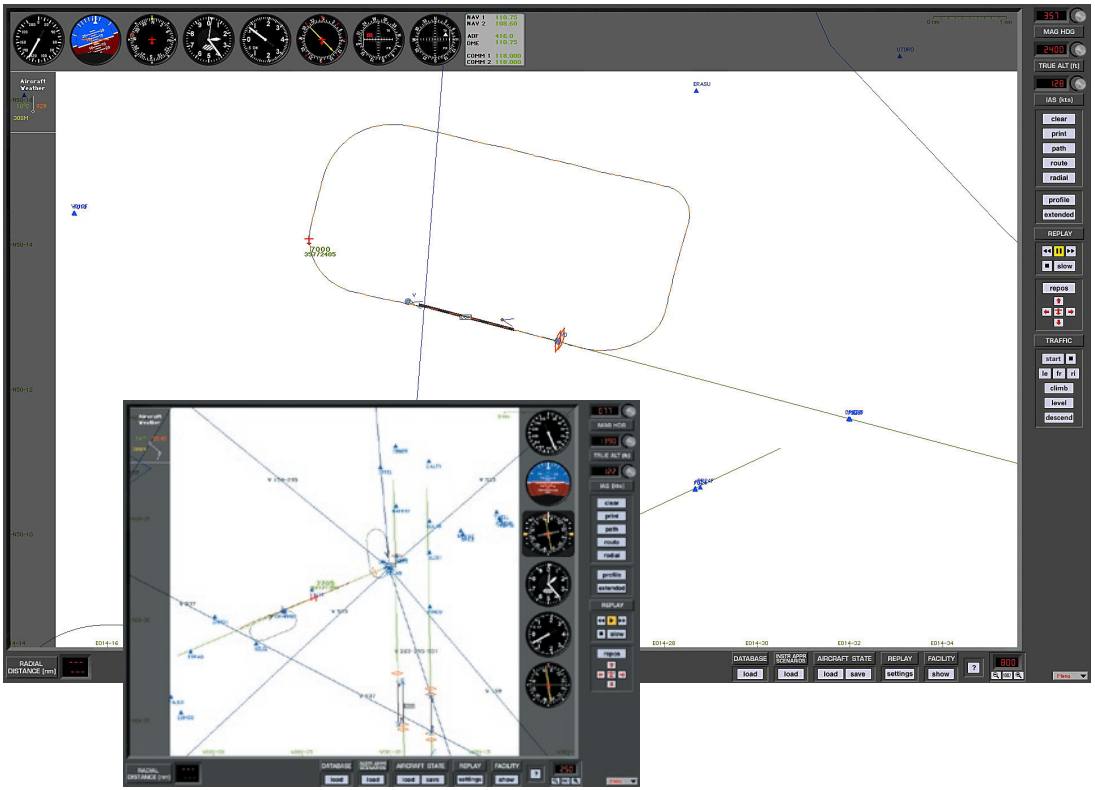
In addition, both student and instructor can review a recorded flight on the MAP Page with an enhanced total picture having the MAP *and* instrument presentations displayed as the flight is replayed back.

REPLAY feature / REPLAY options button:

The first time the REPLAY feature is used an "Initial settings for Replay functions" dialog box will appear. This box specifically relates to, and is used to define, how the instruments will be displayed on the MAP Page.



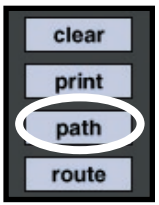
You can control if/when/where/how the instruments are displayed...



Change or modify the initial replay settings as desired. These settings can be changed/modified at any point in the future by simply clicking on the "settings" button at the bottom of the MAP Page under REPLAY.

PATH BUTTON

Flight path and associated data recorded by ***ELITE***'s VFDR can also be saved in a path file. The number of path files stored is limited only by available disk space. These stored path files can be loaded at any time in the future and then displayed and/or replayed on the MAP screen for analysis.



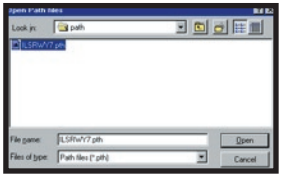
Click the **PATH** button to bring up the following box:

Save:

To **save** the flight path just flown, click the **SAVE** button to bring up the **Save Path files** window. Type a name in the "File name:" box ("BCRWY25" in the example) for the flight path file then click **Save** to complete the operation.

Load:

To **load** a flight path, click the **LOAD** button and select a path from the previously saved paths listed.

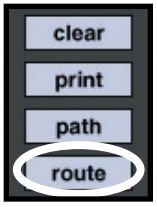


Clear:

The **CLEAR** button clears the flight path from the **MAP** page and deletes all associated flight path data from memory.

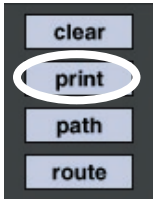
ROUTE BUTTON

Similar to the flight path files discussed on the preceding page, you may also save a self created route into a Route file by using the **ROUTE** button. Routes are explained further on in this chapter.



PRINT BUTTON

Clicking the **PRINT** button captures an image of the **MAP** page. Once captured, you can then print the image or save it to disk for viewing later. Set MAP **ZOOM** level and select **PROFILE** as desired to "customize" the MAP to your taste before clicking the **PRINT** button.



Print:

To print the **MAP page** click **PRINT** and follow the print dialog boxes specific to your operating system.

Save:

To save the **MAP page** image, click **SAVE** and type a name for the graphic file. On Windows, the graphic is saved as a **bitmap** (.bmp). On Macintosh computers, the graphic is saved as a **picture** (pict) file.

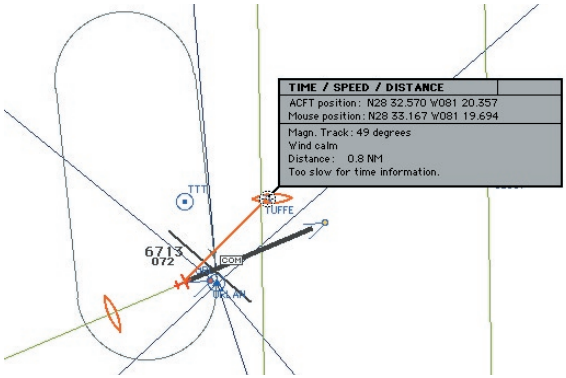
HEADING / DISTANCE CURSOR

E6B-style calculations can be displayed using the **TIME/SPEED/DISTANCE** feature. To display magnetic track, heading, distance and time from the red aircraft symbol, to any point in the selected NAV database:

Hold down the **SHIFT** key on the keyboard.

The TIME/SPEED/DISTANCE cursor appears

Click and hold anywhere on the Map Page. An orange course line representing the desired track from the aircraft symbol to the selected point will appear. In addition, the TIME / SPEED / DISTANCE information box appears as shown in the next page.



The upper portion of the TIME / SPEED / DISTANCE information box contains the actual location of the aircraft and selected point (mouse position) displayed as coordinates in degrees lat/lon.

The lower portion of the TIME / SPEED / DISTANCE information box contains magnetic track, aircraft heading, wind speed/direction, distance, ETA, and groundspeed.

NOTE: Heading shown (course corrected for wind) incorporates wind correction angle (WCA). This is NOT necessarily the aircraft's current heading, but rather the heading required to maintain the desired track across the ground.

Time (ETA) shown is calculated from the aircraft position to the selected point based on groundspeed.

NOTE: Change wind settings on the METEO Page to see the effects of different winds on ETA, heading, and groundspeed. You can also observe the effects of differing aircraft speed and/or altitude in a similar manner. Simply change values in the IAS (kts) and True ALT (ft) windows (panels) respectively to have the TIME / SPEED / DISTANCE information box figures recalculated.

ROUTE PLANNER

The route planner is a special tool for quick flight planning. To design a route, you need the keyboard.

Add Point:

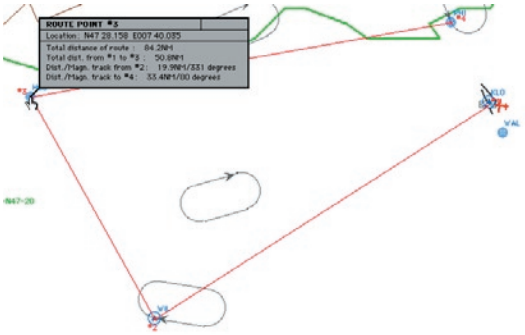
Push the **CTRL** (control) key on the keyboard and the cursor changes to "add point." Click on any location from which you will start your route and you get the first route point #1. The next click displays route point #2 and so on, until you release the **CTRL** key. To add a point between existing points, click on the route line itself.

Remove Point:

Push the **CTRL & ALT** keys (Windows) or on the Mac **CTRL & OPTION** keys on the keyboard and the cursor changes to "delete point." Click on any route point you want to remove from your route and it disappears while the other route points renumber.

Move Point:

Push the **CTRL & SHIFT** keys on the keyboard and the cursor changes to "move point." Click on any route point you want to move and drag it with the mouse to another location. Release the mouse button and changes take effect.



Route Info:

Click and hold on individual route points to get route and leg information. Point coordinates, as well as track and distance information are displayed in an accompanying window as long as the mouse button is held down.

SHORT CUTS

To display the **Shortcuts Information** window, click on the **"?"** button. The **Shortcuts** window will open and display all shortcuts (keycombinations that enable certain functions).

SHORTCUTS

MAP SCREEN:

Zoom

I	In
O	Out
N	Normal view
ALT + Click/Drag	Zoom In
ALT + Shift + Click	Zoom Out

Scroll

Left arrow	Left
Right arrow	Right
Up arrow	Up
Down arrow	Down

Route

Control + Click	New Point
Control + Shift + Click	Move Point
Control + ALT + Click	Delete Point
Control + 'CLEAR'	Delete all Points

HDG/Dist

Shift + Click	Show time, speed and distance

Position

C	Center map to ACFT
Control + C	Move ACFT to Map center

Custom Zoom

Control + Click in 'Zoom level window'	Store actual zoom level
Click in 'Zoom level window'	Set stored zoom level

Runway

ALT + 'A' and click on runway	Manually select active runway
ALT + 'A' and click off runway	Deselect manually selected active runway

Taxiway

Click and hold on aircraft / press 'ALT' and drop on runway end	Reposition aircraft on taxiway parallel to runway
Click and hold on aircraft / press 'Shift' and drop on runway end	Reposition aircraft on taxiway perpendicular to runway

GENERAL:

Visual

T	Look down
G	Look center
B	Look up
Shift + Left arrow	Look to left
Shift + Up arrow	Look to front
Shift + Right arrow	Look to right

Control

ALT + F	Freeze
ALT + Q	Quit
ALT + H	Help

Simulation speed

S	Slower
F	Faster

Engine sound

E	On/Off

Click the mouse button to continue.

GenView Specific Shortcuts

Placing aircraft abeam the runway threshold on parallel taxiway:

Click-and-hold on aircraft symbol / press ALT and "drop" aircraft runway threshold, then release first the mouse and ALT key.

Placing aircraft perpendicular to runway threshold in a "hold short position on taxiway:

Click-and-hold on aircraft symbol / press SHIFT and "drop" aircraft on runway threshold, then release first the mouse and ALT key.

Manual selection of "active" runway toggle:

Press ALT-A to engage or disengage mode. Once engaged, enables you

to manually select ***ELITE***'s "active" runway by clicking on the threshold of desired runway (runway color changes to green to identify that it is active). You can change your selection as many times as you like while the manual selection mode is engaged. Manual selection mode will stay engaged until ALT-A is pressed again. Only one runway at a time can be "active." To deselect a manually selected active runway press ALT-A (if not already in manual selection mode) and click anywhere on the MAP Screen NOT occupied by a runway.

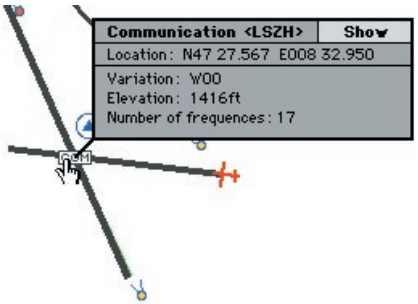
Summary:

1. ALT-A to engage manual selection mode
2. Click on runway threshold as desired to make "active"
3. Change runway selection as desired
4. Deselect by clicking anywhere off the selected runway
5. ALT-A to disengage manual selection mode

An active runway is normally selected automatically by the software based on aircraft orientation and distance from a given runway. Once the active runway has been determined, runway lights are turned ON for that runway. You can however override this automatic selection by manually selecting the active runway following the procedure above.

AIRPORT FREQUENCY INFORMATION

COMM (communication) & NAV (navigation) frequencies for associated airports and NAV facilities are in the database. As described earlier in the chapter, the **MAP page** also functions as a virtual A/FD (airport/facility directory). Click and hold on the COM symbol in the center of the runway complex. A **Communication** box will come up displaying information and number of frequencies available at this airport.



Frequency Column:

While holding down the mouse button, move the cursor to the SHOW corner located at the top-right of the **Communication** box. All frequency information available for the airport will be displayed as shown below.

FREQ	12GRH	CALLSIGN
APP 125.32	RN	ZURICH FINAL
APP 127.75	RY	ZURICH TERMINAL
ARR 118.00	RY	ZURICH
ARR 119.70	RY	ZURICH
ARR 120.75	RY	ZURICH
ARR 127.75	RY	ZURICH
ATI 128.52	T N	
CPT 121.80	Y	ZURICH DELIVERY
DEP 125.95	RY	ZURICH
DEP 127.75	RY	ZURICH
GND 118.10	Y	ZURICH
GND 119.70	Y	ZURICH
GND 121.90	Y	ZURICH
RMP 121.75	N	ZURICH APRON
TWR 118.10	Y	ZURICH
TWR 119.70	Y	ZURICH
TWR 127.75	Y	ZURICH

Following is some of the information that may appear in the Frequency Information display.

ACC	Area Control Center
ACP	Airlift Command Post
APP	Approach Control
ARR	Arrival Control
ATI	Automatic Terminal Info. Service (ATIS)
AWO	Automatic Weather Observing Station (AWOS)
CLD	Clearance Delivery
CPT	Clearance Pre-Taxi
CTL	Control
DEP	Departure Control
DIR	Director (Approach Control/Radar)
EMR	Emergency
FSS	Flight Service Station
GND	Ground Control

GTE	Gate Control
HEL	Helicopter Frequency
INF	Information
MUL	Multicom
ODP	Parametres (French Radio)
OPS	Operations
RDO	Radio
RDR	Radar Only Frequency
RFS	Remote Flight Service Station (RFSS)
RMP	Ramp / Taxi Control
RSA	Airport Radar Service Area (ARSA)
TCA	Terminal Control Area
TRS	Terminal Radar Service Area (TRSA)
TWE	Transcribed Weather Broadcast (TWEB)
TWR	Air Traffic Control Tower
UAC	Upper Area Control Center
UNI	Unicom
VOL	VOLMET

Column 1:

The following characters may appear in Column 1.

A	Airport Advisory Service
C	Community Aerodrome Radio Station (CARS)
D	Departure Service
F	FlightInformationService (FIS)

I	Initial Contact (IC)
L	Arrival Service
S	Aerodrome Flight Information Service (AFIS)
T	Terminal Control Area

Column 2:

The following characters may appear in Column 2.

A	Air / Ground
G	RemoteCommunications Air toGround (RCAG)
L	Language other than English
M	Military Frequency
P	Pilot Controlled Lighting (Air/Ground)
R	RemoteCommunications Outlet (RCO)

Column G:

The following characters may appear in Column G.

G	Guard
T	Transmit
< >	both (blank)

Column R:

This column indicates if radar service is available:

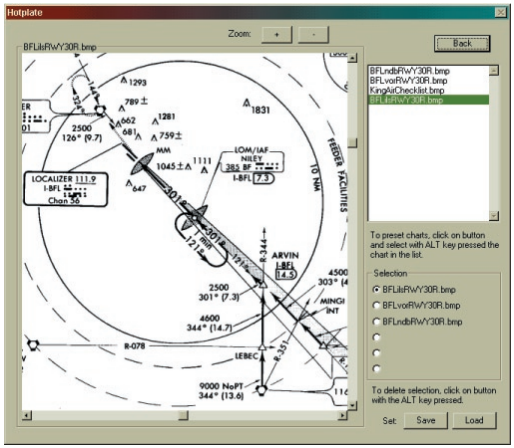
R	Yes
N	No

Column H:

Indicates if 24 hours service is available.

Y	Yes
N	No

HOTPLATES



HotPlates™ is a handy feature that allows you to view an approach plate any time you are in the INSTRUMENT (cockpit) Screen.

Press the "P" (plates) key on your keyboard to bring up the HotPlates viewer. The first thing you will notice is the large main window on the left. This viewing window can be ZOOMed using the +/- buttons located at the top of the viewer or scrolled using the horizontal and vertical scroll bars to focus in on a specific area of a chart. For faster (and easier) chart repositioning, click-and-drag anywhere in the main window. You will see the finger cursor change to a closed hand that grabs the chart for easy moving.

The window to the upper-right displays the contents of the "Plates" folder. Approach plates must be stored in this folder to be viewed with the HotPlates viewer. In addition to approach plates, other items such as check-lists can be placed in this folder for viewing. Three approach plates are included with ***ELITE***. These are the plates for the three "sample" ATC Scenarios at Bakersfield, California. To select a plate for viewing choose one from those listed and click on it.

As you build your approach plate library you may find it difficult to keep your charts organized due to the number of files in the Plates folder. The HotPlates viewer has a simple way to reorganize your plates

into logical "sets." A set is a grouping of six files (maximum) that can be loaded for use as needed. Once loaded, the files are placed in the **Selection** box for convenient access. To create a plate set click on one of the six "radio" buttons located at the bottom-right of the HotPlates viewer. Hold down the **ALT** key (Windows) on your keyboard and select a file from those listed above. The selec-tion will appear next to the selected radio button. Repeat these stepsto add files (plates) to the set as desired. Files can be assigned to theradio buttons in any order. To remove a selection from a radio buttonat any time just hold down the **ALT** key (Windows) again and click on the desired radio button.

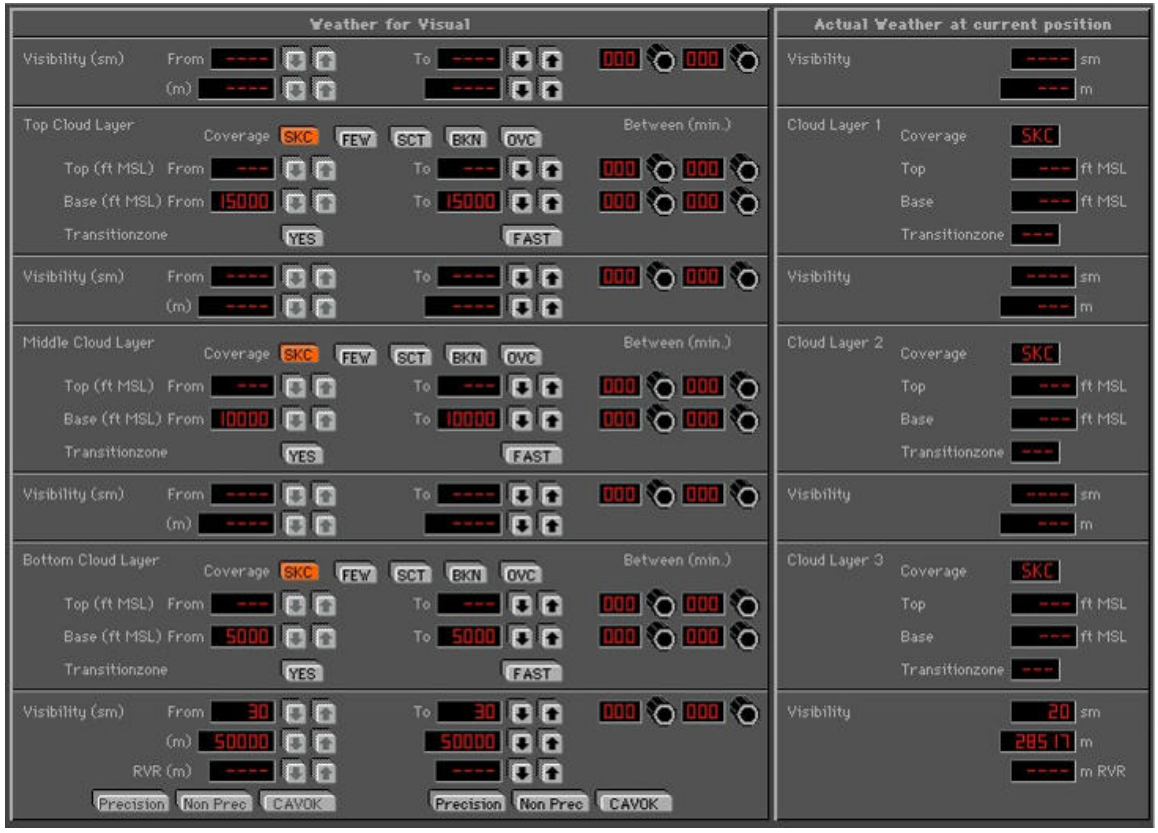
When you have created a set and are happy with it click on the Set **Save** button. In the **Save plate set** dialog box, type in a unique name for the set next to **File name:** such as "Bakersfield" and click **Save**. Now any time you want to bring up that (or any other) set click on the Set **Load** button. Select a set from those listed in the **Load plate set** dialog box and click **Open**.

Any file formatted as described below and placed in the **Plates** folder will be available for display in the HotPlates viewer. Files must be in bitmap (.bmp) format to be viewed by the HotPlates viewer. In general, files with a resolution of144dpi (dots per inch) tend to look good in the HotPlates viewer althoughsome experimentation may be necessary to achieve best results.

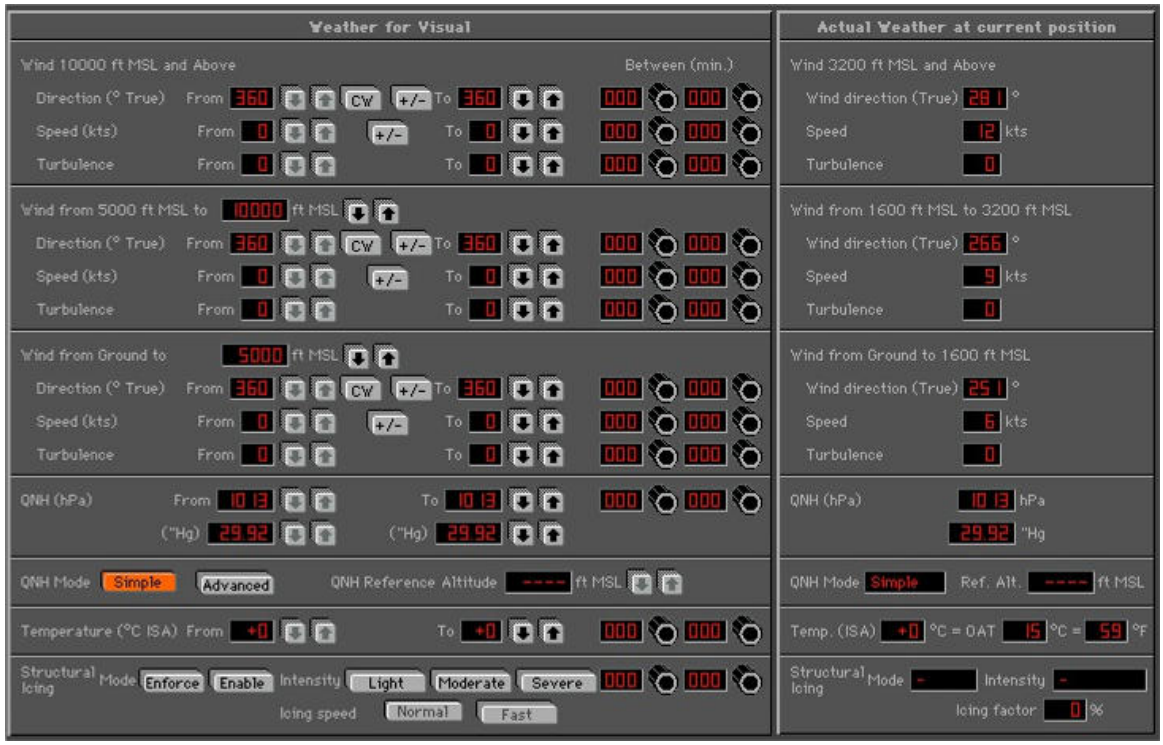
NOTE: HOTPLATES are available in U.S. navigational database only!

METEO PAGE

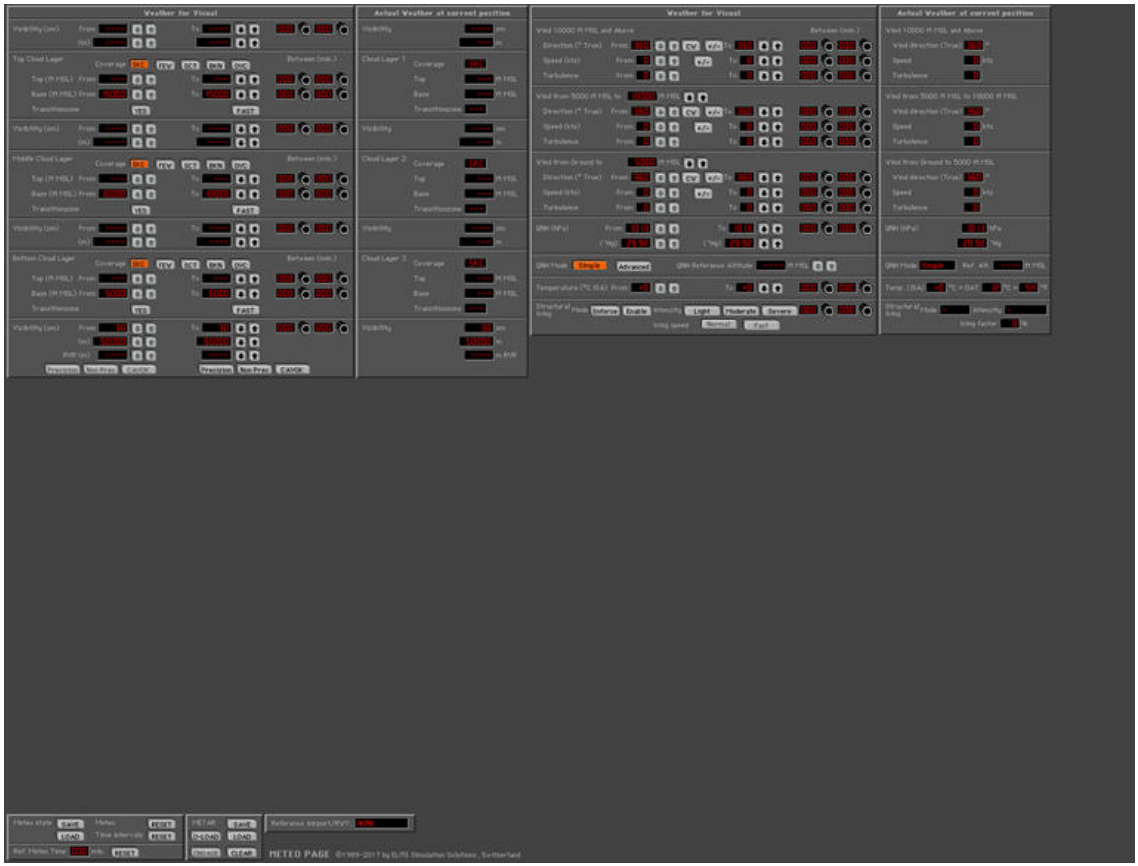
Depending on the monitor size and resolution, the METEO page displays the winds/clouds settings on the same page (on HD displays) or displays either the winds/clouds settings, which can be selected by a button at the bottom of the page.



METEO Clouds Settings



METEO Wind Settings



METEO Wind / Cloud Settings on HD monitors

"HELP Tips" are available anytime by pressing ALT-H. Move the help cursor (?) over any on-screen item that you would like more information about. When the help cursor reveals its document icon help is available for that item. Simply click on the item to display related help tips.

The **METEO** (meteorological) **Page** is used to create the weather environment in ***ELITE***. Parameters such as visibility, ceiling, wind, turbulence, pressure and temperature can be set and changed as desired to tailor the weather to meet your specific training requirements.

It's advisable to practice procedures *without* "weather" initially so as to gain a degree of proficiency in their execution. Then, progressively increase the level of difficulty by adding weather to these same procedures. One example might be to practice holding without wind at first, then adding winds and turbulence as you begin feeling more comfortable. This way it's easier to visualize the big picture first (without wind) and grasp the essence of the procedure. After a while you'll be shooting approaches to minimums and practicing holds in strong winds and turbulence without a problem.

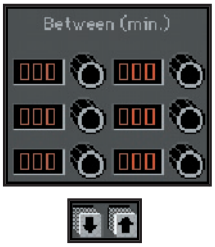
The **METEO Page** is extremely flexible and provides an opportunity for an almost infinite amount of weather possibilities. Please feel free to experiment.

GENERAL LAYOUT (GENVIEW)

The METEO Page is rather comprehensive and might look a bit intimidating at first glance. Actually, it is set up quite logically and is easy to use once you understand its layout. The METEO Page is actually two separate pages, the "CLOUDS" Page, and the "WIND" Page. Both pages are set up in the same format left-to-right with "From" weather, "To" weather, and "Actual" weather respectively. The CLOUDS Page is set up top-to-bottom as Layer 1 (top layer) Cloud and Visibility, Layer 2 (mid layer) Cloud and Visibility, and Layer 3 (bottom layer) Cloud and Visibility respectively. The WIND page is set up top-to-bottom as Wind (top layer), Wind (mid layer), Wind (bottom layer), Altimeter setting, Temperature, and Structural Icing respectively. We will examine each of these elements in greater detail in upcoming sections. To get from one page to the other simply click on CLOUDS or WIND as applicable near the bottom of the current page.

DYNAMIC WX

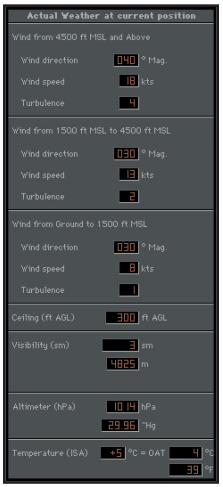
In addition to setting static (unchanging) weather conditions, the METEO Page also allows you to create dynamic (changing) weather conditions. Dynamic weather is set up by first specifying a time period within which these changes will occur by dialing in values (minutes) in each of the windows under the corresponding "Between" column. This is the dynamic weather time interval and determines both when and over what period of time the weather conditions will change. Next, define the conditions that will exist at the beginning (the "From" weather) and end (the "To" weather) of the specified period of time. To set the initial "From" weather simply click on the appropriate UP and DOWN arrow buttons to adjust the value of the desired weather parameter(s). Repeat this in the same way to set the "To" parameters. It is important to remember that the intensity or rate-of-change of the weather is also controlled by the procedure described in the previous section. For example, large parameter variances in relatively short time intervals produce rapidly changing weather as opposed to small parameter variances over longer time intervals.



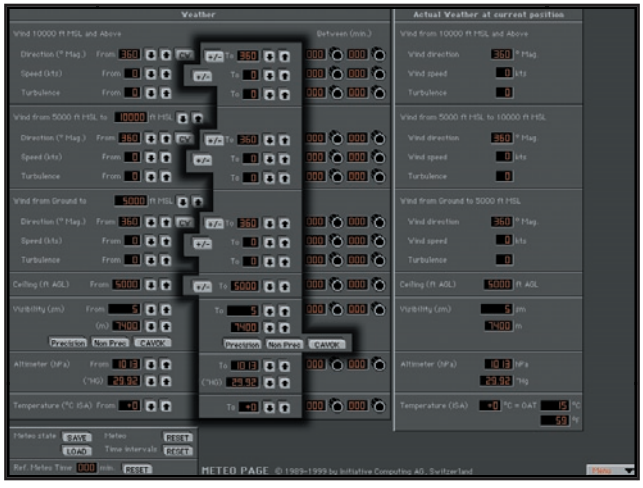
NOTE: "From" column UP/DOWN buttons will remain grayed-out (not active) until a dynamic weather time interval is entered.

ACTUAL WEATHER COLUMN

The "Actual" weather column at the far-right of the METEO Page displays the current actual weather parameter values and cannot be adjusted. Think of it as a "snapshot" of the weather conditions at the current location and time. This is especially useful if dynamic weather has been set up and you would like to see the exact current conditions change over the time period specified. In addition, this column can be referenced when Active METAR data is engaged, as it will reflect weather changes over time and location.



As both dynamic and static weather are reflected, it is easy to get a quick picture of the weather with just a glance.



STATIC WEATHER

To set *static* (unchanging) weather use the "To" weather column ONLY and do NOT set in a time interval. If a time interval *is* set then the "From" weather automatically becomes the current weather.

NOTE: Remember, it is possible to use any combination of static and dynamic weather settings.

WIND

There are three wind layers in the ***ELITE*** weather environment. Each wind layer can have its own characteristics and are all configured in the same way on the **METEO Page** utilizing identical control panels. Wind layers can NOT be less than 200 feet thick. The thickness of each layer is defined by the values entered on the panels. Note that the top of the

bottom wind layer is also the base of the mid wind layer. The top of the mid wind layer is also the base of the top wind layer.

TRANSITION ZONES

GenView:

Transition Zones are available for each of the three Cloud Layers and can only be selected when overcast (OVC) coverage is in use. A Transition Zone creates a gradual visual transition to and from the cloud conditions existing above or below the layer where it is used and is noticeable only when climbing or descending into, or out of, the overcast layer it is associated with.

Standard View:

There are two inherent "transition zones" each 100 feet thick between the top/mid layers and the mid/bottom layers respectively. These transition zones comprise the last 50 feet of each layer (the lowest part of the higher layer and the highest part of the lower layer). Depending on the parameters set in each of the wind layers you may experience some turbulence and changing conditions when transitioning through these shear zones.

WIND DIRECTION

Wind direction is always **MAGNETIC** and can be set in 10° increments by clicking the UP and DOWN arrow buttons. To make the wind direction variable (with respect to the selected direction) simply press the +/- button. When setting up dynamic (changing) winds it is possible to have the winds change in a clockwise or counter clockwise manner. The CW (clockwise) button is a toggle switch that when depressed will change to CCW (counter clockwise). Simply leave this button up (unselected) for clockwise rotation of the changing winds or down (selected) for counter clockwise rotation.

WIND SPEED

Wind speed in knots (0-60) is set by clicking the UP and DOWN arrow buttons. To make the wind speed variable simply press the +/- button.

TURBULENCE

Turbulence level 1(light) through 12(extreme) is set by clicking the UP and DOWN arrow buttons. Separate turbulence levels can be set for each of the three corresponding Wind Layers.

CEILING (Standard View)

Ceiling in feet **A**bove **G**round **L**evel is set by clicking the UP and DOWN arrow buttons. To make the ceiling variable (with respect to the selected height) simply press the +/- button.

VISIBILITY (GenView)

Above Cloud Layer 1:

Select visibility using UP/DOWN arrows as desired.

NOTE: Visibility can only be adjusted if cloud layer 1 coverage is set to OVERCAST.

With an OVERCAST layer programmed, selected visibility will become the controlling visibility above the TOP of the OVERCAST up to FL400 (40,000ft). If no layer 1 OVERCAST is programmed, visibility adjustment is disabled and the visibility setting associated with next lowest OVERCAST layer will control visibility. If no lower OVERCAST layer is programmed, then “surface” visibility will be the controlling visibility for all altitudes from the surface up to FL400 (40,000ft).

Cloud Layers 2 and 3:

Select visibility using UP/DOWN arrows as desired.

NOTE: Visibility can only be adjusted if cloud coverage is set to OVERCAST.

With an OVERCAST layer programmed, selected visibility will become the controlling visibility above the TOP of the OVERCAST up to the next highest OVERCAST layer programmed. This then becomes the visibility between the OVERCAST layers. If no higher OVERCAST layer is programmed, then the selected visibility will become the controlling visibility for all altitudes from the TOP of the OVERCAST up to FL400 (40,000ft).

If no OVERCAST is programmed at the current layer, visibility adjustment is disabled and the visibility setting associated with the next lowest OVERCAST layer will control visibility. If no lower OVERCAST layer is programmed, then "surface" visibility will be the controlling visibility for all altitudes from the surface up to the next highest OVERCAST layer programmed. If no higher OVERCAST layer is programmed, this will be the controlling visibility for all altitudes from the surface up to FL400 (40,000ft).

Surface:

Select visibility using UP/DOWN arrows or preset buttons as desired. Preset buttons have the following corresponding visibility values:

Precision = 1/2 statute mile
Non Precision = 1 statute mile
CAVOK (Ceiling/Visibility OK) = 30 statute miles
NOTE: CAVOK by definition also indicates (in part) that no clouds or precipitation exist below 5,000ft. Pressing the CAVOK button in ***ELITE*** *with Cloud Layer 3 Base set to <= (less than or equal to) 5100ft MSL will also set cloud coverage to Sky Clear (SKC) in addition to changing visibility to 30 statute miles.*

Preset buttons can be used to "jump" quickly to 1/2, 1, and 30 statute mile values respectively and then further adjusted as desired.

Visibility value selected will become the visibility from the surface up to the next highest OVERCAST (OVC) cloud layer programmed. If no OVERCAST layer is programmed, this will be the controlling visibility for all altitudes from the surface up to FL400 (40,000ft).

CLOUDS (GENVIEW)

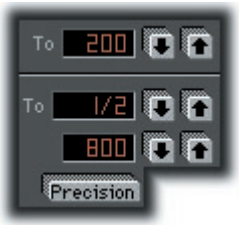
The CLOUDS Page has three Cloud/Visibility layers. Layer 1 (top), Layer 2 (mid), and Layer 3 (bottom) respectively. Select cloud coverage for each layer as desired by pressing any one of the buttons corresponding to the following :

SKC	Sky Clear
FEW	1/8 cloud coverage
SCT	2/8 to 4/8 cloud coverage
BKN	5/8 to 7/8 cloud coverage
OVC	8/8 cloud coverage

Cloud bases can also be defined by pressing the corresponding UP/DOWN buttons. Tops can only be specified for an overcast (OVC) layer.

VISIBILITY (STANDARD VIEW)

Visibility in **S**tatute **M**iles and/or Meters can be set by clicking the appropriate UP and DOWN arrow buttons. In addition, there are three combination visibility/ceiling presets that allow you to quickly choose Precision, Non-Precision, or CAVOK minimums respectively. Once selected, these preset values can then be further adjusted as necessary. These preset minimums are as follows:



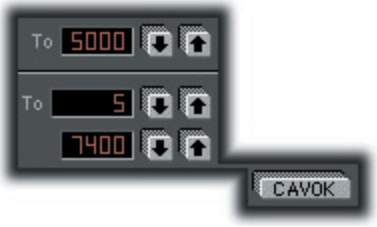
Precision:

200ft. (ceiling),

1/2 Mile (visibility)

Non-Precision:
500ft. (ceiling),1
Mile (visibility)

CAVOK:
5000ft. (ceiling),
5 Miles (visibility)



ALTIMETER

Altimeter setting in hectoPascals (same as millibars) and/or inches of mercury can be set by clicking the appropriate UP and DOWN arrow buttons.

NOTE: By creating a dynamic (changing) pressure over time scenario it is easy to demonstrate the "Going from a HIGH to a LOW lookout below" adage. This is great for instructors who want to make sure their students always perform a thorough approach briefing (checking the ATIS etc.). Simply set your "To" Altimeter value lower than your "From" Altimeter value, then set in a time interval for the pressure change to take place. As the pressure drops, the student will have to descend to maintain indicated altitude. If the student doesn't ask you for the local altimeter setting or tune in the ATIS, he/she will get a big surprise on the approach.

TEMPERATURE

Temperature in degrees Celsius can be adjusted by clicking the UP and DOWN arrow buttons. Note that this is NOT setting the temperature directly but is actually adding to or subtracting from the ISA (**I**nternational **S**tandard **A**tmosphere) values. If your performance tables call for an ISA + or - (X°) day simply dial in X° to increase or decrease the OAT temperature by X° amount.

At the lower-left of the **METEO Page** you will find a box containing functions that are applicable to the entire **METEO Page** as opposed to the control of *individual* weather parameters described previously.

STRUCTURAL ICING

Ice is not that hard to make. Despite reports to the contrary, the recipe hasn't been lost (nor is it a secret). Any child can recite the recipe just for the asking.

All instrument pilots are familiar with the dangers of icing and the coincident degradation of aircraft performance associated with the accretion of ice on an aircraft. Various insidious aspects of icing can creep into an otherwise "normal" flight and make for a really bad day. Increased weight, alteration of airfoil shape and disruption of airflow to name just a few, can often yield unpredictable flight characteristics at best. At worst, these elements can conspire to become catastrophic.

Like most things in life, preparation is probably the most important part of success. Aviation is no different. Proper training, pre-flight planning (you did check the icing forecasts and PIREPs right?) and overall forethought are your best course for a successful, non-eventful trip. Preparation also refers to the act of being prepared for something that may occur during a flight. This is where "staying ahead of the airplane" comes in. As Rod Machado says, "the two most important things in aviation are the next two." If conditions are ripe for icing then be on alert for subtle performance changes and/or indications that may be symptomatic of icing.

The goal of any simulation is to sharpen your "situational" awareness. This is not only geographic (positional) awareness but "how are things going" awareness. ***ELITE***'s intent is not to prepare you for how to exactly react to an icing "encounter" (that is best learned from the POH, aircraft manufacturer, & experience) but rather to enhance your ability to recognize that "something is not quite right" feeling and thus get you thinking. Your ability to properly analyze and successfully resolve a problem is greatly improved by quick recognition in the first place. Time and altitude are precious. In other words, don't be caught cruising along "fat, dumb, and happy." With a good scan, and knowledge of what indications should be normal/abnormal, the degradation of aircraft performance associated with icing should be readily apparent. Always stay ahead of the airplane and maintain a constant self-dialogue. If you notice an abnormality or something doesn't feel quite right then try and maintain focus.

* Recognize...

* Analyze...

* Solve...

Always be aware of the "symptoms" of icing.

Icing can be implemented in two different ways.

1. Press "Enforce" and choose an intensity level (Light, Moderate, Severe) to activate icing regardless of OAT or visible moisture present. This can be used by an instructor for example to demonstrate the affects of icing on aircraft performance at any time.
2. Press "Enable" and choose an intensity level (Light, Moderate, Severe) to activate temperature/moisture dependent icing. Ice will begin forming at the intensity chosen anytime the aircraft is in visible moisture and at a temperature of approximately 32 degrees Fahrenheit and lower. For the purposes of the simulation, visible moisture is defined as 1/4 statute mile visibility and less, or flying in an overcast (OVC) layer.

With either icing implementation, intensity levels affect "icing factor" in the following ways:

Light: icing factor goes up to 50% in 60 minutes
Moderate: icing factor goes up to 100% in 20 minutes
Severe: icing factor goes up to 100% in 10 minutes

Icing factor is defined as a decrease in lift, an increase in drag, and an increase in weight.

Icing factor: 100% = 50% less lift / 40% more drag / 20% more weight

Notice that Pitot Tube icing is NOT part of the icing factor equation. Pitot Tube icing is actually controlled separately on the MALFUNCTIONS Page. This separation of control is intentional. Although Pitot Tube icing is often coincident with structural icing, structural icing can be subtler to reveal itself (initially). In most instances the onset of Pitot Tube icing is more apparent and thus more easily recognizable. One form of Pitot Tube icing is readily identified by a rather quick loss of airspeed indication. Airframe icing MAY be a bit harder to detect initially depending on accretion rate, icing type, etc.

NOTE: Active METAR does NOT modify the chosen Icing Settings. You still have to ENABLE or ENFORCE Icing manually.

SAVING & LOADING METEO FILES

The **SAVE** and **LOAD** buttons next to **Meteo state** are extremely powerful. Let's say you have set up a weather scenario on the **METEO Page**. You get it just exactly the way you want it with all the parameters set, but you would also like to save this Meteo "state" for future use. Simply click on the **SAVE** button to open the **Save Meteo files** dialog box.

Type a name in the "File name:" box then click **Save** to complete the operation. To load this Meteo state (or any other) in the future, just click on the **LOAD** button to open the **Open Meteo files** dialog box. Select a Meteo state from those listed (previously saved) and click **Open**. This feature allows you to create an unlimited library of Meteo states that can be recalled almost instantly.

The two **RESET** buttons provide a quick way to "zero-out" the **METEO Page**. The **Meteo** RESET returns all parameter settings to zero where applicable, sets the Ceiling/Visibility to CAVOK, and sets the Altimeter/Temperature to standard. The **Time Intervals** RESET clears all the time interval settings used for dynamic weather. The **Ref. Meteo Time** RESET button sets the Reference Meteo Time back to zero minutes. This is used in conjunction with the interval settings to control dynamic weather as explained next.

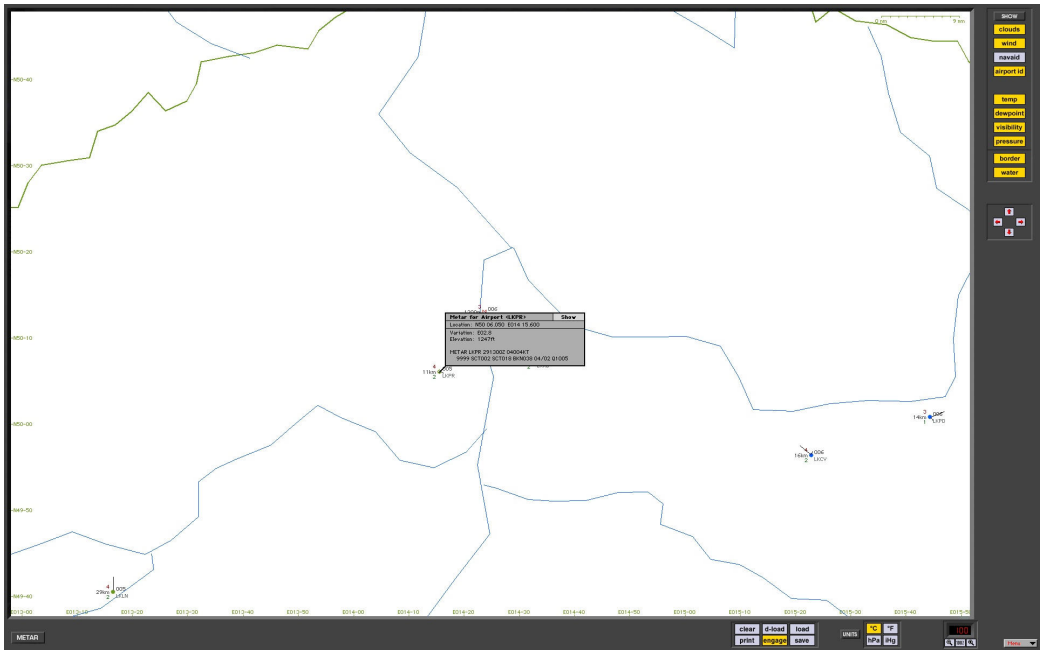
REFERENCE METEO TIME

The **Reference Meteo Time** is simply an elapsed time counter that runs as the aircraft is flown. The dynamic weather time intervals discussed previously use this time to determine when to begin changing the weather as set up by the "From" and "To" parameters. If for example you set the bottom layer winds to increase between 005 and 015 minutes and the ceiling to lower between 010 and 020 minutes, these changes

will not begin to take affect until the Reference Meteo Time reaches 005 minutes. At 005 minutes the bottom layer winds will begin increasing (and continue increasing) until 015 minutes where the "To" parameter values will have been reached. Five minutes after the bottom layer winds begin to increase (010 minutes) the ceiling begins to lower and will continue to lower until 020 minutes. Weather parameters that do NOT have a time interval set (static weather) remain constant.

The **Reference Meteo Time** can be **RESET** back to zero at any time in the flight. This will allow dynamic weather scenarios to be easily repeated. One important point to keep in mind is that if you have been flying a given sim session for an extended period of time, **then** set up some dynamic weather, make sure to either RESET the Reference Meteo Time or set time intervals in the future. If the time intervals set are *before* the Reference Meteo Time then the changes will never occur.

METAR PAGE



"HELP Tips" are available anytime by pressing ALT-H. Move the help cursor (?) over any on-screen item that you would like more information about. When the help cursor reveals its document icon help is available for that item. Simply click on the item to display related help tips.

NOTE: METAR page is available with GenView/RealView™ visual databases - on single machine (instrumentation/visual on the same PC) and also with external visuals. The METAR page is not available when P3D visual is used.

ACTIVE METAR

Active METAR means that you can download real-time weather reports from METAR reporting stations for use in ***ELITE*** GenView. When METAR weather is "engaged" (activated) the weather dynamically changes when flying between METAR reporting stationsand METAR time. Sky conditions, visibility, wind speed, wind directionand turbulence are accurately depicted in the visual system.

METAR weather conditions represent the actual weather derived from the local Airport stations. Although ***ELITE*** calculates the precise coverage of the clouds, ***ELITE*** can not represent a specific cloud type such as a Cumulus or Nimbostratus. If the downloaded METAR readout of a visibility is '9999', ***ELITE*** will set a value between 10 km and 30 km, otherwise it will take the reported value such as i.e. 24 km or 15 sm.

WIND AND GUSTS

ELITE calculates the weather between the METAR conditions received by the Aircraft. If the wind is 270° and the next available METAR station reads 260°, ***ELITE*** will constantly update the wind from 270° to 269, 268, 267 etc. until reaching 260°. The same appears for all other values such as wind speed, cloud coverage, temperature, dewpoint, visibility and QNH/ALT. The symbols used in the METAR Page are ICAO standard. When gusts are reported, ***ELITE*** will set the appropriate wind speed and turbulence to level 2 for a short period.

USING THE METAR PAGE

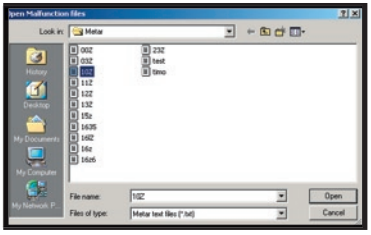
Open the METAR page through the menu or type 'alt & R' on your keyboard.

Once in the METAR page, you have the choice of selecting existing METAR conditions which have been downloaded from the Internet. Or you can download METAR data online by using of the **D-LOAD** function in ***ELITE***.

USING EXISTING METAR

1. Press the **LOAD** button in the METAR page to open existing METAR files previously saved to your harddrive.

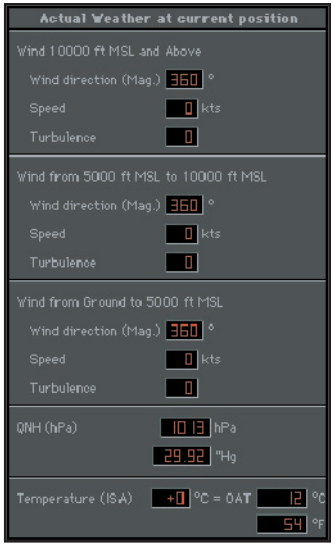
2. Select from the directory list the METAR file. (i.e. *05Z.TXT*) 05Z means zulu time, 434.5Kb is the size of the file and May 29 08:07 represents the date and time the file was downloaded. To select a different path from the directory list, use the **UP** button to browse to a higher directory level.
3. To select the file, highlight the time and click **OPEN** or double click the file.



4. As METARs are updated very frequently and have only the zulu-time, you have to 'link' your selection to a specific date. Click the **OK** button to continue.

5. To activate the METAR conditions, click the **ENGAGE** button in the METAR Page.

6. When you are flying, you can check the actual Weather at current position in the METEO Page.



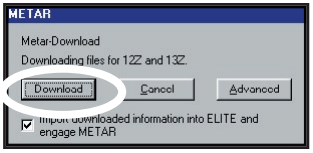
7. Once the METAR is active, all other weather conditions previously selected in the METEO Page are inactive. To de-activate the METAR conditions, press **ENGAGE** and it will turn from yellow to gray.

DOWNLOADING METAR FILES

Basic:

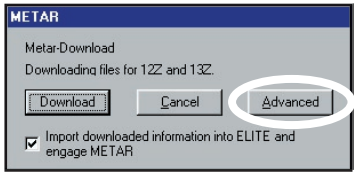
1. Press the **D-LOAD** button on the METAR or METEO Page.

2. Press **Download** button on the METAR dialog box to begin download. METAR reports will be downloaded and engaged automatically.

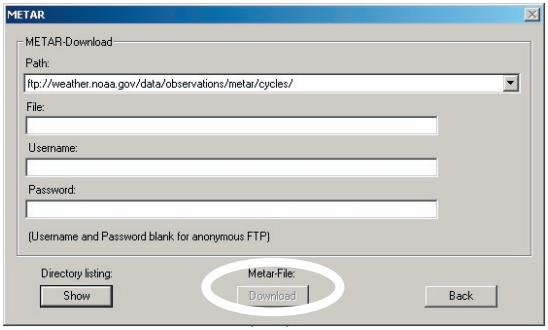


Advanced:

Press **Advanced** button and follow the procedure below for manual selection of METAR files as desired.



1. Press the **SHOW** button for the Directory listing. The METAR-Download page has a default internet addresses ready. This will connect you to the Internet.

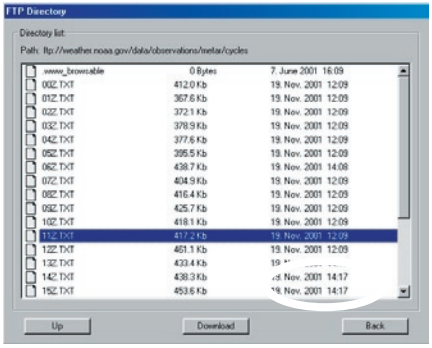


2. Select a file you wish to download, i.e. 1300Z (1300Z represents the UTC time of the report)

NOTE: Downloading METAR from the Internet requires an Internet connection.

NOTE: METAR files cover the entire world.

3. Click the METAR-File **Download** button to start the download process. Click **SAVE** to put the file into your METAR folder.



4. Once the download process has finished, click the **BACK** button to leave this menu.
5. In the METAR or METEO Page, press the **LOAD** button to select the file from the directory list you downloaded.

*NOTE: **ELITE** will only open the METAR files from your installed GenView Navigation data.*

6. Once the file is selected, click the **BACK** button to leave the directory list.
7. METAR reports are updated frequently and correspond to specific UTC times and dates. These reports however can be linked to any specific date. To 'link' your selection to a specific date choose the date and click the **OK** button to continue.

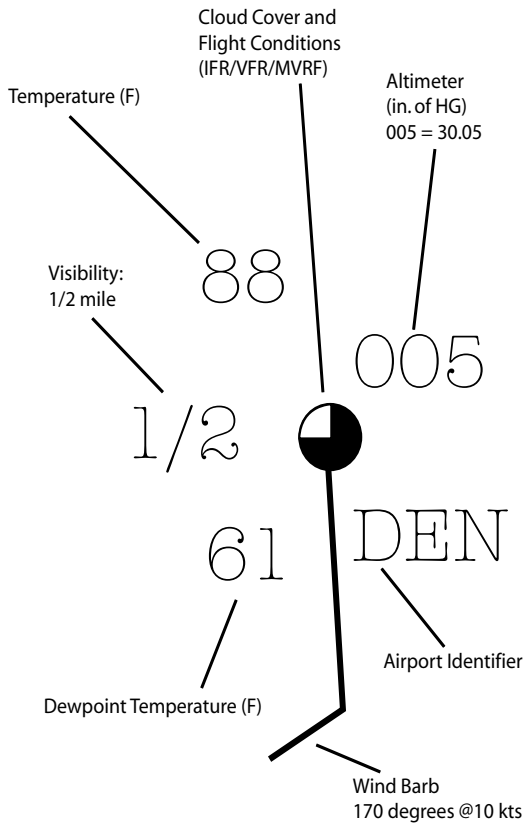
8. To activate the METAR conditions, click the **ENGAGE** button in the METAR Page. To view the current weather, change to the METEO Page while unfreezing the simulation.

All METAR stations are graphically depicted on a map overlay in the METAR Page. Symbols in red indicate METAR stations under IFR conditions with a ceiling below 1,000 ft and/or visibility less than 3 miles. Blue indicates stations under MVFR conditions with a ceiling 1,000 to 3,000 ft and/or visibility 3 to 5 miles. Green indicates stations under VFR conditions with ceiling greater that 3,000 ft and visibility greater than 5 miles.

On the MAP Page, METAR stations are marked with a red circle. Clicking on the red symbol opens an information window that shows the airport METAR. Selecting the SHOW button gives you all reports loaded for that station sorted by date and time.

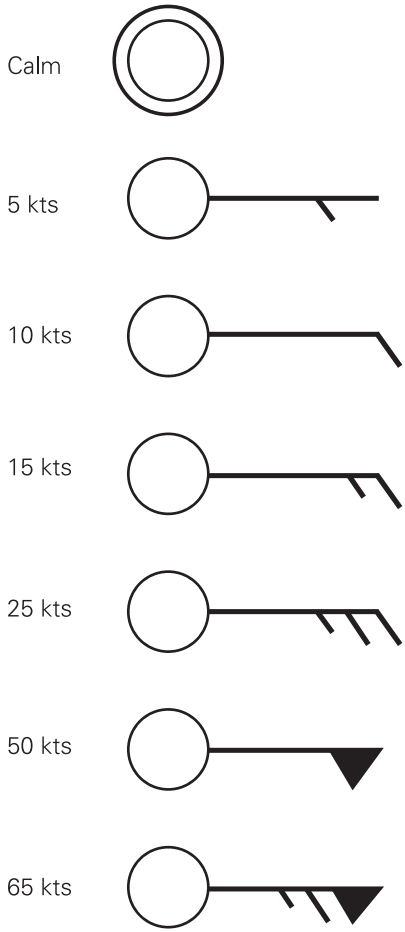
NOTE: Several clicks may be necessary in order to access the METAR information.

STATION PLOT



NOTE: Temperatures are in C° or F°. Altimeter settings are either hPa or iHg.

WIND BARB DESCRIPTION IN THE NORTHERN HEMISPHERE



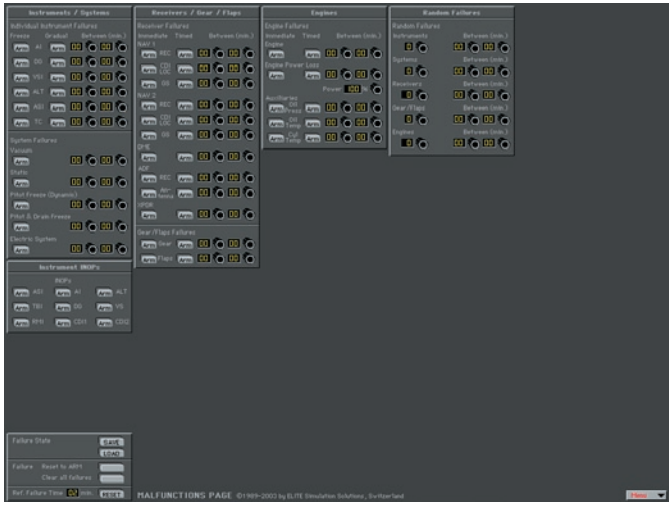
AERODROME ACTUAL WEATHER METAR AND SPECI DECODE

Pressure	$Q P_H P_H P_H P_H$	QNH in whole hectopascals or inches, tenths and hundredths of an inch depending on indicator
		Indicator of QNH in hectopascals If Q = A then QNH is in inches
Temp and Dew Point	$T'T'/T'_dT'_d$	Dew-point temperature in whole degrees Celsius (if below 0° C preceded by M)
		Temperature in whole degrees Celsius (if below 0° C preceded by M)
CAVOK		Cloud And Visibility OK. Replaces visibility RVR, present weather and cloud if: 1. Visibility is 10 km or more 2. No cumulonimbus cloud and no cloud below 1500 meters (5000 ft) or below the highest minimum sector altitude whichever is greater, and 3. No precipitation, thunderstorm, sandstorm, shallow fog or low drifting dust, sand or snow
Visibility	WW	Minimum horizontal visibility in meters 9999 = 10 km or more
Identification	G G g g Z	Indicator (Z) of UTC
		In individual messages, time of observation in hours (GG) and minutes (gg) UTC
	CCCC	ICAO four -letter location indicator

Clouds	
$N_sN_sN_sh_sh_sh_s$	
Height of base ($h_sh_sh_s$) of clouds in units of 30 meters "100 ft"	Cloud amount: SCT = SCATTERED (half or less than half the sky covered) BKN = BROKEN (more than half but less than OVC) OVC = OVERCAST (entire sky covered)
Replaced when there are no clouds and CAVOK is not appropriate by.	
SKC	
Sky Clear	

Surface Wind										
$d\ d\ d\ f\ f\ G\ f\ f_m f_m$ KMH or KT or MPS										
Wind speed units used	Maximum wind speed "gust" ($f_m f_m$) - if necessary	Indicator of gust (G) - if necessary	Mean wing speed (ten minute mean or since discontinuity)	Mean wing direction in degrees true rounded off to nearest ten degrees (VRB = VARIABLE)						
0000 = calm										
Followed when there is a variation in wind direction of 60° or more and wind speed >3 kt by:										
$d_nd_nd_nVd_xd_xd_x$										
Other extreme direction of wind (measured clockwise)	Indicator of Variability (V)	Extreme direction of wind ($d_nd_nd_n$)								

MALFUNCTIONS PAGE



Malfunctions Page

"HELP Tips" are available anytime by pressing ALT-H. Move the help cursor (?) over any on-screen item that you would like more information about. When the help cursor reveals its document icon help is available for that item. Simply click on the item to display related help tips.

The **MALFUNCTIONS Page** is used to create failure scenarios. The ability to set up and practice realistic failures is one of the most powerful features in any simulation. Many of these failures would be impractical, impossible, or unsafe to recreate in an actual aircraft. Yet, exposure to these same situations in a simulated environment can give you invaluable experience (the airlines and military have proved this for decades).

As we all know, the two most important things in aviation are the next two. With cognizant self-dialogue and previous experience dealing with similar events, it should be easier to visualize the next two actions with limited distress. What *was* the last thing I touched? How far off the airway was that airport I just passed? Is that drop in oil pressure just a bad gauge (better keep an eye on the temps). What is the most conservative action I could take if things just don't seem to be going right? Simulation is a tremendous tool that lets you get used to seeing, evaluating, and reacting to various failure "scenarios" *before* getting in an actual aircraft.

Although the **MALFUNCTIONS Page** might appear complex at first glance, it is actually quite easy to use and is one of the most comprehensive pages available. You have the opportunity to selectively or randomly fail individual instruments, systems, avionics, engines, gear, flaps, and much more.

Elements of the **MALFUNCTIONS Page** will be covered in greater detail in the following paragraphs, but to get started…

Setting up failures requires three simple steps:

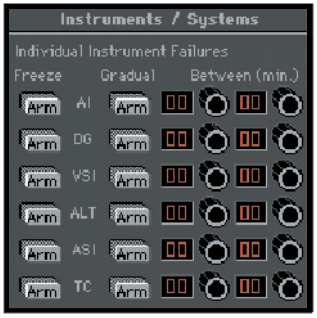
1. Decide on the failure(s) that you would like to invoke.
2. Determine when you would like the failure(s) to occur. Failures can be set to occur immediately, at a specified time, or at some point within a defined failure "time window."
3. Arm the failure(s) by pressing the associated **ARM** button(s).

Note that the **ARM** button will change to **FAIL** when that particular item has actually failed. Click on the **FAIL** button once to RESET the item to **ARM**. Click again to CLEAR the failure.

INSTRUMENTS AND SYSTEMS FAILURES

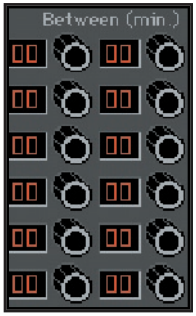
Individual instruments can be failed in two different ways:

1. Freeze (instrument maintains indications that exist at time of failure)
2. Gradual



To "Freeze" an instrument, click on its associated **ARM** button under the "Freeze" column. To have an instrument fail gradually, click on its associated **ARM** button under the "Gradual" column. A gradual failure of this type is sometimes referred to as an "insidious" failure as it is not as readily apparent and thus could potentially be more dangerous. Fixating on the **A**ttitude **I**ndicator and flying the aircraft to maintain "wings level" as it (the AI) slowly tumbles, is one example of the consequences of this type of failure.

FAILURE TIME WINDOW



The "Between" column is used to set the failure "time window" interval. The values entered in minutes (00-99) are compared to the Ref. Failure Time and determine when or during what time period (window) the corresponding ARMed failure will occur. If for example we want the Attitude Indicator to gradually fail at some point between seven and fifteen minutes from now, we would simply center 07 and 15 respectively in the "Between" column and press the ARM button in the "Gradual" column next to "AI." If this were done at the start of our flight the Ref. Failure Time would already be set to zero. But, if we had been flying for some time and wanted the failure to occur between seven and fifteen minutes from now we could just RESET the Ref. Failure Time. As the Ref. Failure Time counts up from zero as we fly, the Attitude Indicator will *begin* its gradual failure at some time between seven and fifteen minutes.

IMMEDIATE FAILURE

To invoke an immediate failure, enter the SAME values (minutes) in each window that correspond to the current Ref. (reference) Failure Time displayed at the lower-left. If for example the Ref. Failure Time displayed is 07 (7 minutes), enter 07 in BOTH "Between" windows next to the desired ARMed failure. An easier way to invoke an immediate failure is to leave both "Between" values at 00 and simply RESET the Ref. Failure Time by pressing the RESET button next to the Ref. Failure Time display window. Keep in mind though that all failure time window intervals use the Ref. Failure Time and as such will be affected.

SPECIFIC TIME FAILURE

To invoke a failure at a specific (future) time, enter the SAME values (minutes) in BOTH "Between" windows. If we had been flying for fifteen minutes and wanted the Pitot Tube to freeze over with an accumulation of ice three minutes from now, we would simply enter 18 and 18 respectively in the "Between" column. When the Ref. Failure Time reached 18 minutes, the Pitot Tube would freeze over and we would observe a subsequent erroneous indication on the Airspeed Indicator (a good time to turn ON Pitot heat).

Note that if a **System** failure is invoked its associated **ARM** button will change to **FAIL** when that particular System actually fails. Affected items within the failed system will be flagged (turn orange) for easy identification. The ARM buttons of these items will NOT change to FAIL. If for example we FAILed the Static System, the ARM button under "Static" would change to FAIL at the time of the failure and the VSI (Vertical Speed Indicator), ALT (Altimeter), and ASI (Airspeed Indicator) labels respectively would change to orange in color.

RECEIVERS, GEAR, AND FLAPS FAILURE

Failures in this panel are set up in much the same way as previously discussed *except* that immediate failures are invoked by using the ARM buttons in the "immediate" column. To set a specific failure time or a failure time window interval you must use the ARM buttons in the "Timed" column.

ENGINE FAILURES

Failures in this panel are set up exactly the same as the previous (Receivers / Gear / Flaps) panel. Note that it is not only possible to fail an engine, but to also simulate a power loss (leaving partial power). Combine this with various "auxiliary" failures and you have the opportunity to create some interesting failure scenarios.

A good way to see if a student is including engine instruments in his/her scan is to invoke an Oil Pressure failure and see if the student notices the pressure dropping. To really bring the point home set up a scenario as shown below in which the Oil Pressure drops followed by an increase in Oil Temperature and subsequent power loss.

NOTE: The Power Loss window shows the power available, NOT the percentage of power loss. If for example the power loss window were set to 40%, this would indicate a 60% loss of power.

NOTE: Once an engine failure or power loss has been invoked, the failure must be CLEARED to allow for engine restart or power restoration.

RANDOM FAILURES

The Random Failures panel allows you to experience what it is like to expect the unexpected. To set up a random failure simply enter the failure time window interval(s). As previously described, you can use these intervals to invoke failures immediately, at specified times, or within a defined failure time window. Then dial in the number of failures you would like to occur. If for example we entered in a failure time window of between 3 and 12 minutes, then entered 2 in the Instruments window, ***ELITE*** would randomly fail two of the six instruments (each at some random time between 3 and 12 minutes).

NOTE: "Engines" does NOT refer to the number of engines but rather to the number of possible engine failures. Depending on the aircraft there might be as many as 5 failure types (power loss, oil pressure, oil temperature, etc.) as shown on the engine failure panel.

INSTRUMENT INOPS

The Instrument INOP feature allows you to place a virtual instrument cover on a selected instrument or instruments. The covers are similar in appearance to the rubber suction cup covers used in instrument training for partial panel practice. The covers can be used independent of, or in conjunction with, specific malfunctions as follows:

Invoke a malfunction by itself (without the cover).

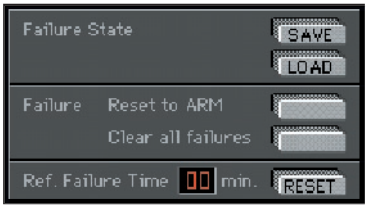
Cover the instrument (without invoking a malfunction).

Invoke a malfunction AND cover the instrument.

The third option allows the instructor to cover an instrument at his discretion once he is comfortable that the student has recognized and acknowledged the failure.

To place an instrument cover on one or more instruments, simply click on the desired instrument's ARM button. The button will turn orange and subsequently display "Fail" to indicate the instrument has been covered. Note that the Instrument INOP feature is activated almost immediately after ARM has been pressed. The Instrument INOP feature is therefore not "timed" nor does its use depend on the Ref. Failure Time. The graphic above shows that the attitude indicator and directional gyro have been selected and have INOP covers on them.

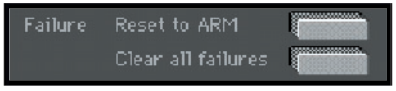
At the lower-left of the **MALFUNCTIONS Page** you will find a box containing several buttons that are applicable to the entire **MALFUNCTIONS Page** as opposed to the control of *individual* failures described previously.



FAILURE STATES

Similar to saving and loading METEO States, the SAVE and LOAD buttons next to "Failure State" enable you to Save and Load Failure States. You can literally develop a library of these states that can be instantly recalled for use anytime. Create a failure scenario (state) and tweak it until you are satisfied, then click the SAVE button to open the **Save Malfunction files** dialog box. Type a unique name in the "File name:" box such as "OilPressLoss" then click **Save** to complete the operation. To load this failure state (or any other) in the future, just click on the **LOAD** button to open the **Open Malfunction files** dialog box. Select a failure state from those listed (previously saved) and click **Open**.

RESET TO ARM



The "**Reset to ARM**" and "**Clear all failures**" buttons provide a quick way to RESET the **MALFUNCTIONS Page** as required.

Use the "Reset to ARM" button when a completed failure scenario sequence needs to be repeated. Pressing this button will leave the entire

failure "state" intact, but RESET all FAIL buttons back to ARM (much easier than having to reset each individual Fail button).

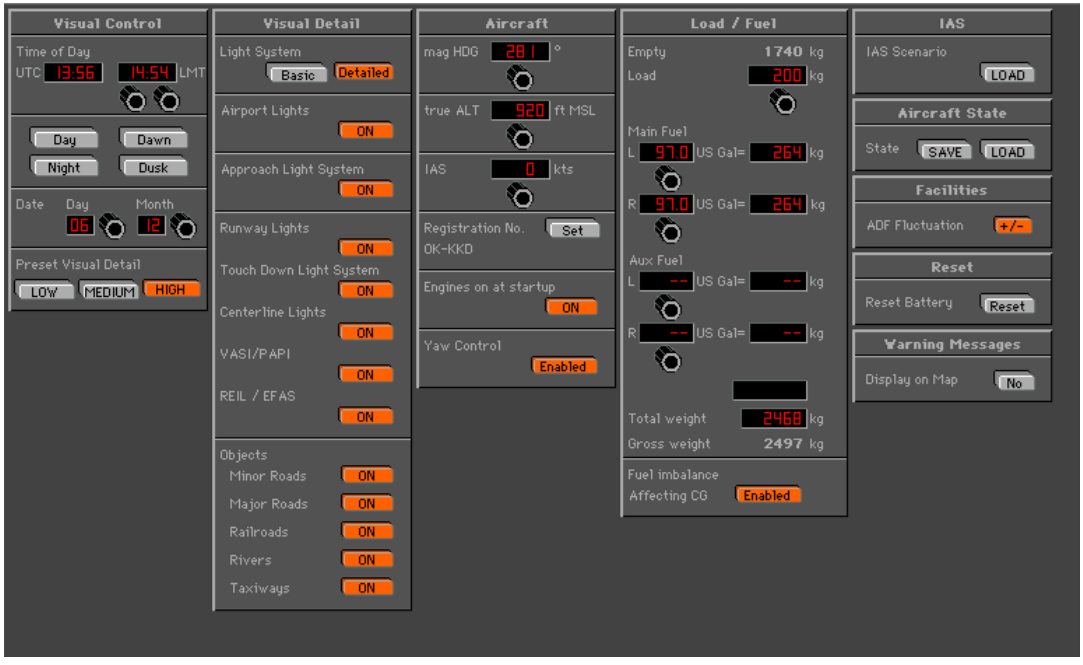
Use the "Clear all failures" button to RESET the entire **MALFUNCTIONS Page** (including failure time intervals).

REF. FAILURE TIME

The **Ref. Failure Time** RESET button sets the Reference Failure Time back to zero minutes. This is used in conjunction with the failure time window interval settings as described previously.

The **MALFUNCTIONS page** is extremely flexible and provides an opportunity for an almost infinite amount of failure scenarios. Please feel free to experiment.

CONTROL PAGE



Control page

"HELP Tips" are available anytime by pressing ALT-H. Move the help cursor (?) over any on-screen item that you would like more information about. When the help cursor reveals its document icon help is available for that item. Simply click on the item to display related help tips.

Use the **CONTROL** page to configure aircraft load and fuel, control visual settings, load ATC Scenarios, save/load "STATE" files, and more.

VISUAL PANEL

Use the **Visual** panel to configure ***ELITE*'s** visual display settings. Everything from Time-of-Day to the amount of runway environment detail displayed can be changed.

Set Date and Time:

Set the **Time of Day** and **Date**. Daylight is accurately reflected based upon navigation data loaded and time set.

At program start, ***ELITE*** references your computer's internal clock, then applies the (**LT**)/(**UTC**) offset from the General settings dialog box on the **Configuration** screen. The calculated current UTC (Universal Time Coordinated) time is then used for all cockpit clocks and appears on the **Time of Day** panel in the UTC window. The time displayed in the LMT (Local Mean Time) window will probably **NOT** reflect the current local watch time of the area flown in. THIS IS NORMAL! LMT is used to calculate accurate sunrise and sunset times. Depending on **aircraft location** within the specific Time Zone flown in, and Daylight Saving Time, LMT may be "off" by as much as 2 Hrs. Use this time only as a reference for setting day/night flying conditions. To change time of day, click and drag on hours/minutes adjust knobs located below LMT display window.

PRESET LEVEL OF DETAIL (GenView)

Software "performance" is directly related to the computer hardware and associated capabilities used to run it. Many factors such as proces-

sor speed, memory, video card and drivers, come together to formulate what the end user perceives as computer "power." Some performance gain may be achieved however through the software by fine-tuning GenView's visual settings.

Based on the processing power of your computer, you may want to adjust the Level of Detail (LOD) setting by pressing one of the LOW, MEDIUM, or HIGH buttons. These buttons control various parameters used to create the view of the outside world and determine the resulting "Level of Detail" implemented by these parameters. "Fast" computers can normally use a HIGH setting, while relatively "slower" computers may require a LOW or MEDIUM LOD setting. In addition, these same buttons can be used to select one of three Visual Detail presets.

Unlike the LOD parameter settings, which are broader in nature, the Visual Detail settings are related to specific lighting and scenery object elements. The processing power required to display these elements might cause the simulation to run sluggish on relatively slower computers. The Visual Detail panel allows you to tweak these settings to get the best performance possible from a given system.

Simply CTRL-click on any one of the LOW, MEDIUM, or HIGH buttons (turns orange) and its corresponding Visual Detail preset will become activated. Presets can then be modified manually as desired by selectively turning ON/OFF items in the Visual Detail panel. The selected LOW, MEDIUM, or HIGH button will remain orange as long as the Visual Detail buttons corresponding to that preset match. If the Visual Detail buttons are modified after selecting a preset, the selected LOW, MEDIUM, or HIGH button will return to gray to signify the preset has been modified. Experiment to determine what configuration yields the best combination of performance and visual detail.

SCENERY/RUNWAY LIGHTING (Standard View)

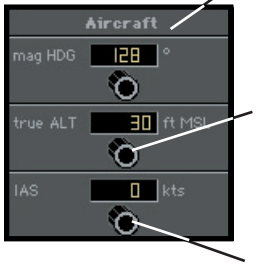
As mentioned in the previous section, software "performance" is directly related to the computer hardware used to run it. Based on the processing power of your computer, you may want to turn OFF various scenery elements, as these tend to increase computer workload and possibly cause the simulation to be less than smooth. Pressing the Detailed button under Scenery simply adds a grid of "city lights" for enhanced surface visual reference. To fly without this grid simply press the Basic button.

ENGINE STARTUP

The engine(s) start automatically at initial startup when the **ON** button is active.

AIRCRAFT PANEL

The heading, altitude, and airspeed panels found on the MAP screen are duplicated here for convenient aircraft setup while using the **Control** page. These panels function exactly the same as those on the MAP page discussed earlier in the chapter.

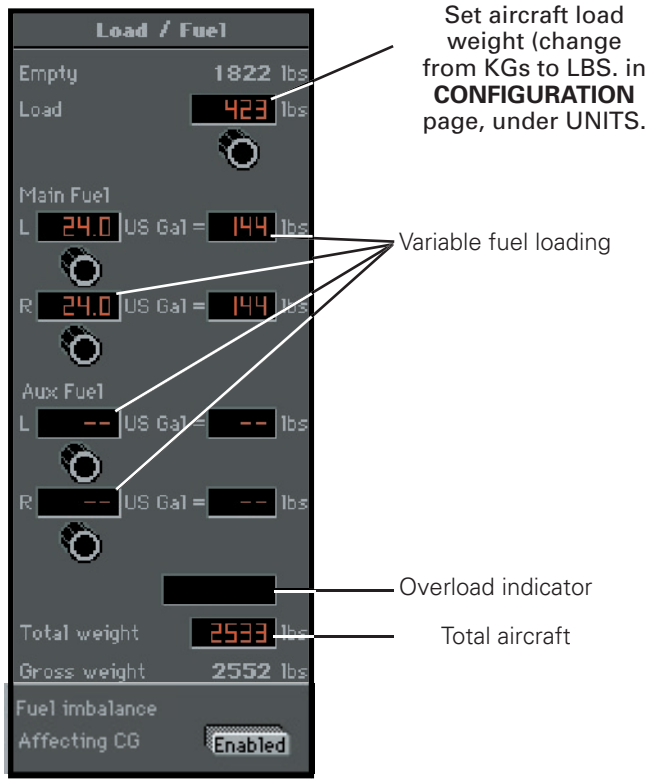


Set aircraft magnetic heading

Set MSL altitude. To increment by 500 ft., click in the number window. The knob will show an orange dot. When you use the knob, increments will be by 500 ft. Click again in the window to deactivate. Feature will deactivate itself in 5 seconds if there is no activity.

Set indicated airspeed (knots)

FUEL / LOAD PANEL



FUEL IMBALANCE

When ENABLED, allows for flight characteristics to be affected by lateral asymmetric fuel loading.

YAW CONTROL

YAW Control enabled when lit (for use with rudder pedals). If not lit, aircraft stays in coordinated flight and tracks runway centerline on take-off.

AIRCRAFT IDENTIFICATION

You can customize the aircraft identification "placard". Click on the **SET** button in the **Identification** panel.

Another dialog box will appear.

Enter the aircraft "Registration number" to be displayed on the instrument panel in the cockpit.

NOTE: This identification number is NOT reflected in the ATC Scenario call sign.

RUNNING THE INSTRUMENT APPROACH SCENARIOS (IAS)

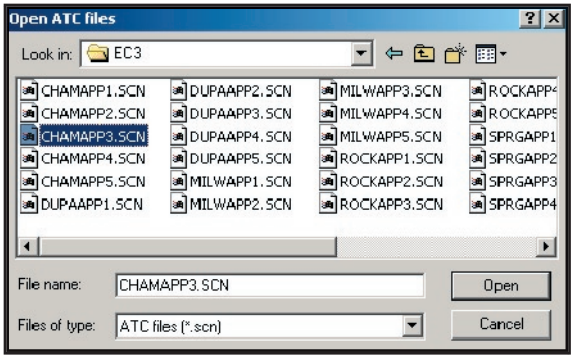
The **Instrument Approach Scenarios** are scripted instrument approach exercises flown in a simulated ATC environment. During these exercises, you must listen for your call sign "on frequency" amidst the chatter of other aircraft and controllers to hear your instructions. Follow clearances and vectors closely or you will be reminded to get back to your assigned altitude or heading.

The scenarios generally begin with the aircraft at a predetermined altitude and positioned 15-20 miles from the IAF (initial approach fix) of the selected approach scenario.

NOTE: IAS scenarios are optional. You can purchase these scenarios from your local dealer!

To load an IAS, click on the **IAS "LOAD"** button located at the bottom of the **MAP** page or use the LOAD button on the **CONTROL** page.

Highlight the IAS you wish to fly from those listed, then click **OPEN**.



*NOTE: Ensure that the correct NAV database (region) is loaded for flying the IAS (***USSW***-United States Southwest.)*

When you select OPEN, you will hear a succession of beeps followed by information and option dialog boxes. Make your selections and follow on-screen instructions.

After the last selections are made, you are ready to fly the approach. Return to the **Instrument** screen and release the **FREEZE** button.

NOTE: When you release the FREEZE button, the autopilot will engage and stabilize the aircraft. When the heading and altitude have stabilized, you can continue to use the autopilot or disengage it to manually fly the approach.

NOTE: If you miss an ATC instruction, you can have it repeated by pressing **CTRL R** *(R for repeat) on the keyboard.*

If you elect to have the copilot change frequencies, it's always a good idea to verify them anyway. Some copilots are better than others!

Loading and Playing Scenario Flight Paths:

1. Click on the **PATH** button on the MAP page and choose **LOAD**.
2. Choose the ATC Scenario path that you would like to see.
3. Click on **REPLAY** to review the flight path. Use the **PROFILE** and **EXTENDED** buttons on the MAP page as desired to display all associated aircraft data.

State Panel:

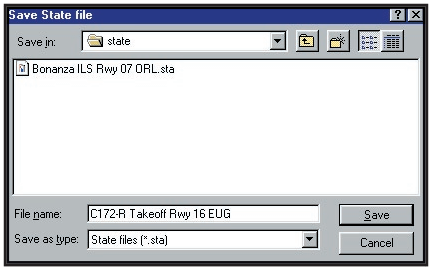
The **State** panel makes it possible to save and load aircraft "state" files. These files allow you to save aircraft position, frequencies entered, weather settings, NAV data etc. into a file. This file can then be loaded at any time to instantly position the aircraft where it was (with the same settings) when the file was saved.

The state panel makes it possible to save and load aircraft "state" files. You can think of state files as a way to take a "snapshot" of the aircraft's state at any given moment in time. When you save a state file the aircraft's position, altitude, heading, airspeed, etc. are stored along with current avionics settings (frequencies, auto pilot configuration, etc.). In addition, you have the option of storing Navigation, Meteo (weather), and Malfunction data as well. The saved state file can then be loaded at anytime in the future and instantly position the aircraft where it was (with the same settings) when the file was saved. State files are very useful when you want to practice the same approach, procedure, flight, or situation repeatedly. Individual pilots and instructors often create a library of state files, which allow them to conveniently return to a desired "lesson" without having to setup the aircraft again manually.

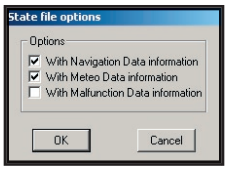
State files can be saved at any time. Before saving a state file make sure that the aircraft is set up just the way you want it. Once everything is to your liking be sure to name the state file something that will be meaningful now and in the future. A good naming convention is to include an airport identifier or nearby Navaid and brief description such as "ORL ILS RWY 7 Low Ceilings." Even if you haven't loaded this file in a while it will be easily identified as the ILS approach into Orlando Executive's runway 7 (with low ceilings). This is much better than "My first ILS."

Saving States:

To save the current aircraft state, click the **SAVE** button to bring up the **Save State file** window.

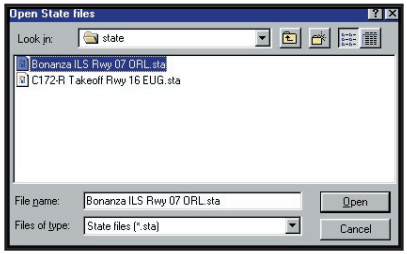


Type in a name for the "state" file and click **Save**.
Select "state" file options as desired, then click **Ok**.



Loading States:

To load an aircraft state file, click the **LOAD** button to bring up the **Open State files** window.

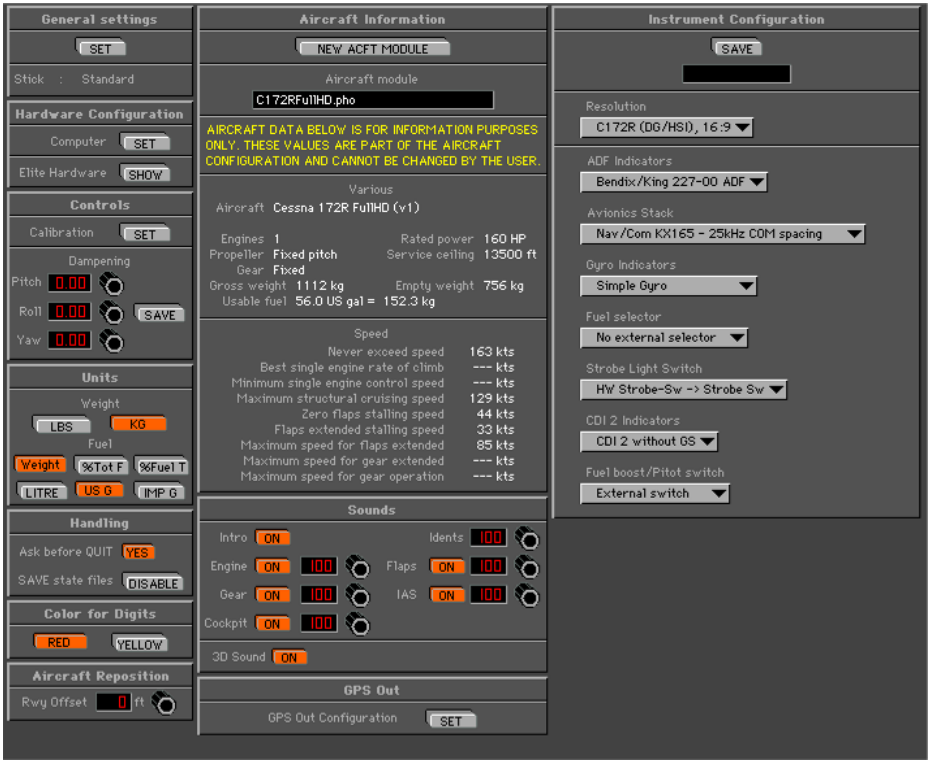


Highlight the "state" file you wish to load from those listed, then click **OPEN**.

TIME FLOWN PANEL

The **Time Flown** panel always indicates the elapsed time ***ELITE*** has been flown. Time automatically stops when the flight is frozen or while not flying on the **Instrument** panel.

CONFIGURATION PAGE

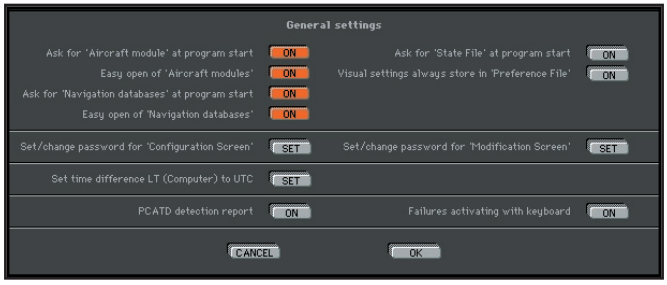


Configuration Page

"HELP Tips" are available anytime by pressing ALT-H. Move the help cursor (?) over any on-screen item that you would like more information about. When the help cursor reveals its document icon help is available for that item. Simply click on the item to display related help tips.

Use this page to configure flight controls, hardware, instrumentation, and sound.

GENERAL SETTINGS



Under **General Settings**, clicking the **SET** button opens a dialog box that lets you customize features in the startup sequence, set/change passwords, set LT/UTC offset, toggle PCATD detection report, and activate failure control from the keyboard. These settings are retained until changed or reset.

AIRCRAFT MODULE

When the **Aircraft Module** at program start" button is **ON** (orange), ***ELITE*** will ask you (on every startup) to select an aircraft module. "Easy open of aircraft modules" allows you to choose an aircraft by viewing thumbnails (small pictorial representations) of each aircraft cockpit. This is the default and recommended setting. The same is true for NAV databases.

NAVIGATION DATABASES

When "Ask for **Navigation Databases** at program start" button is **ON**, ***ELITE*** will ask (on every startup) to select a NAV database area to fly in.

"Easy open of Navigation databases" allows you to choose a NAV area by viewing thumbnail maps of all available individual navigation areas installed.

*NOTE: To have **ELITE** automatically start up (default) to the same aircraft and NAV area each time, first make sure you are currently using the desired aircraft and NAV area you would like for subsequent startups, then turn OFF both "Ask for Aircraft module" and "Ask for Navigation databases at program start" buttons.*

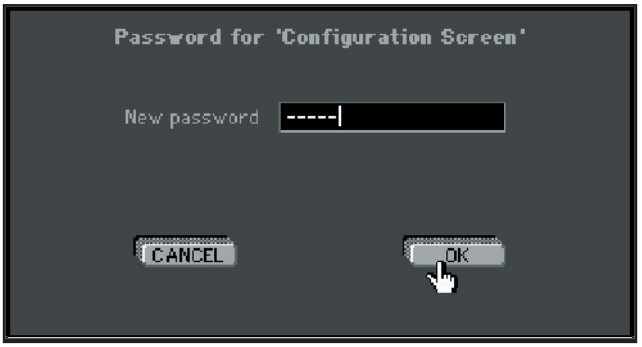
STATE FILES

When the "Ask for **State File** at Program Start" button is **ON**, ***ELITE*** will display a dialog box (on every startup) allowing you to choose any training "State File" previously saved. You will be positioned with the same aircraft in that specific state (including Nav data and Meteo State selected!).

VISUAL SETTINGS

When the "**Visual Settings** always store in Preference File" button is **ON**, all visual settings selected on the control page are stored.

PASSWORD PROTECTION



You may protect the **Configuration** and **Modification** pages with a password. Click on the **SET** button, type a password and follow written instructions on the screen. Click **OK** to save the settings. To delete the password, click the **SET** button and enter the password. When asked for a new password, select **OK** with the password field blank.

TIME DIFFERENCE LT TO UTC

For ***ELITE*** to properly calculate daylight (sunrise and sunset) times, you must set the difference between your local time (LT) and UTC (Zulu) time. First verify that your computer's clock is set correctly. Click on the **SET** button. Calculate your local time using 12:00UTC as a reference. For example in Orlando, Florida (UTC-5) you would set the local time value to 07:00, i.e. 12:00UTC - 5Hrs = 07:00. For periods of Daylight Saving Time (UTC-4) in Orlando, this value would be set to 08:00. To have ELITE perform this calculation automatically (recommended) simply click the "Take Local Time from Computer" SET button.

PCATD DETECTION REPORT

With **PCATD Detection Report** button **ON** (PCATD version only), ***ELITE*** will verify (on every startup) connection and proper communication with the required hardware necessary for use as an approved PCATD (**P**ersonal **C**omputer-based **A**viation **T**raining **D**evice). If a required device(s) is not present or proper communication can not be established, a warning message will appear during program start advising the system may NOT be used for credit in accordance with AC 61-126.

ACTIVATING FAILURES WITH KEYBOARD

Failures Activating with Keyboard ON allows the user to fail specific instruments and systems via the keyboard completely independent of the simulation. This is especially useful for system configurations not incorporating a separate graphical instructor's station (2nd monitor).

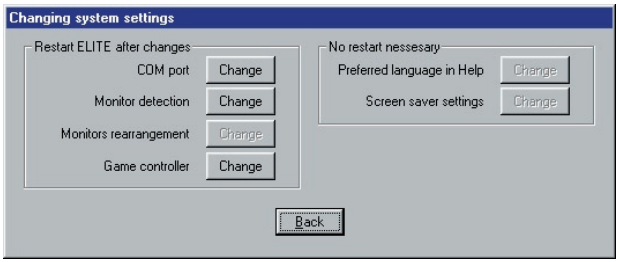
The instructor can control failures without interruption of the simulation or the student's flight. Keyboard commands are as follows:

INSTRUMENT FAILURE	ACTIVATE INSTANT FAILURE	ACTIVATE GRADUAL FAILURE	DEACTIVATE FAILURE
Attitude Indicator	1	7	SHIFT 1 or 7
Directional Gyro	2	8	SHIFT 2 or 8
Vertical Speed Ind.	3	9	SHIFT 3 or 9
Altimeter	4	0	SHIFT 4 or 0
Airspeed Indicator	5	Q	SHIFT 5 or Q
Turn Coordinator	6	W	SHIFT 6 or W
SYSTEM FAILURES			
Vacuum	ALT 1	N/A	SHIFT&ALT 1
Static	ALT 2	N/A	SHIFT&ALT 2
Pitot Freeze	ALT 3	N/A	SHIFT&ALT 3
Pitot & Drain	ALT 4	N/A	SHIFT&ALT 4
Electrical	ALT 5	N/A	SHIFT&ALT 5
Left Engine (or single)	ALT 6	N/A	SHIFT&ALT 6
Right Engine	ALT 7	N/A	SHIFT&ALT 7

HARDWARE CONFIGURATION

Computer Configuration:

Under **Hardware Configuration**, clicking the **SET** button next to Computer brings up a control screen for setting/changing COM port, Monitor detection, Monitors rearrangement, Game controller, and Help text language preferred.



COM port:

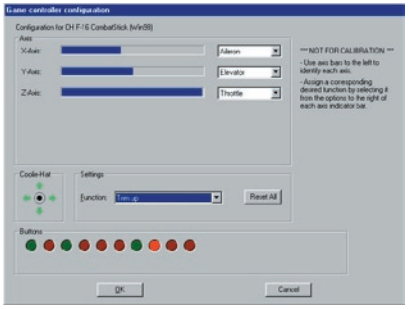
Clicking **CHANGE** next to **COM port** brings up the COM Port Detection dialog, where you can change the COM Port settings and Scan for new ***ELITE*** Hardware.

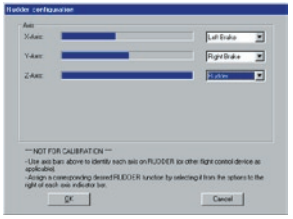
Game Controller:

Clicking **CHANGE** next to **Game controller** brings up a window for selecting flight control devices connected to the computer's joystick (game or USB) port.

Clicking on **CONFIGURE** from this window takes you to the **Game controller configuration** screen. Here you can program (assign) various simulator functions to flight control device buttons and Coolie-Hat switches. To assign a function to a specific joystick button for example, simply press and release the desired joystick button and notice one of the red lights under buttons illuminate. Now under settings, choose a function from the drop-down menu to assign to the button just pressed. Notice the red light turns green when assigned a function. Repeat this process for any remaining buttons you would like to program.

To view any button's assignment just click the button and look for its assignment next to Function. Click **OK** when finished, quit and restart ***ELITE*** for assignments to take affect.



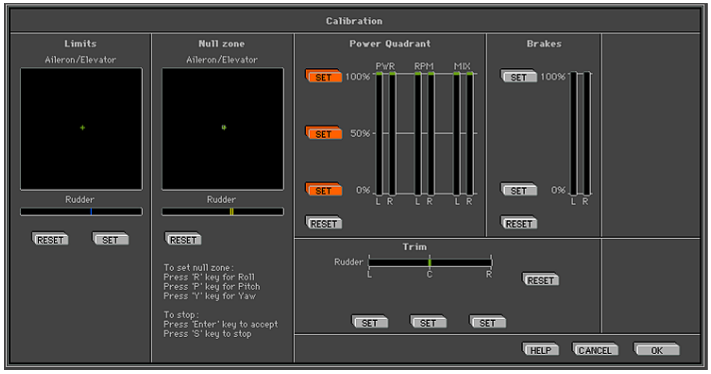


FLIGHT CONTROLS CALIBRATION

ELITE currently supports up to two third party flight control devices, e.g. a yoke and pedals or a yoke and a throttle quadrant. Calibration is necessary to bring these controls into proper tolerances and allow ***ELITE*** to learn the control nuances or limits of the specific devices being used.

NOTE: Flight controls connected to a computer's **joystick** *(game or USB) port must first be calibrated in the computer's operating system. For example, on Windows, calibration is performed through the* **Control Panel**.

Under **Controls** click the **SET** button next to calibration. The **Calibration** screen is divided into three sections or "panels". From left to right these are; Limits, Null zone, and Power Quadrant and Brakes.



Follow the following instructions to properly calibrate your flight control device(s):

Limits:

Under **Limits**, click the **RESET** button. Notice the small cross-hairs in the box just below "Aileron/Elevator". Now move your yoke or stick through its FULL range of motion, i.e. forward (down) elevator, back (up) elevator, FULL left and right aileron. The cross-hairs have now traced a blue box graphically representing the limits of the control device being used. If rudder pedals are connected, apply FULL left and right rudder. You will see a small vertical line move with the application of rudder input. Click **SET** to store the new limits settings.

Null Zone:

The center **Null Zone** panel allows the user to define a "box" within which the control device(s) is considered centered. If a flight control does not physically return exactly to center but is still within the limits of the "box" defined under the **Null Zone** panel, no flight command input will be sent to the software. Some experimentation with different Null zone settings may be necessary to achieve optimum control response. In general, larger Null zones require greater flight control travel accompanied by a coincident perceived decrease in sensitivity. Under **Null Zone,** click **RESET**. Press the **"R"** key on your keyboard and move the stick or yoke to adjust the size of the aileron (**R**oll) Null zone. To accept and store this setting hit **ENTER** or press the "**S**" key to return to the previously stored value. Next, press the "**P**" key on your keyboard and move the stick or yoke to adjust the size of the elevator (**P**itch) Null zone. To accept this setting hit **ENTER** or press the "**S**" key to return to the previously stored value. If rudder pedals are connected press the "**Y**" key on the keyboard and move the pedals to adjust the width of the of the rudder (**Y**aw) Null zone.

NOTE: Clicking the **RESET** *button returns ALL Null zone settings to default. Individual Null zones can be adjusted without clicking* **RESET** *by simply pressing "***R***", "***P***", or "***Y***" keys respectively.*

Power Quadrant:

Under **Power Quadrant**, click **RESET**. Now physically move the Mixture, Prop, and Throttle levers (if applicable) on your power quadrant or similar device to their halfway position.

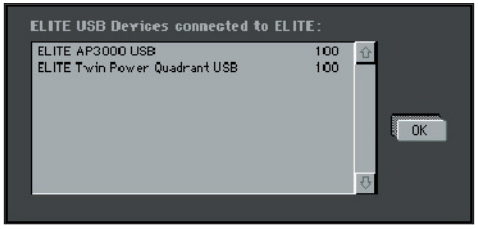
Do NOT use lines on screen under PWR, RPM, and MIX columns for reference. Once levers are positioned physically at 50% (on device) click the middle **SET** button next to the 50% marking on screen. Next, move the levers FULL forward (Throttle OPEN, Prop HIGH, Mixture RICH) and click the top 100% **SET** button. Finally, move the levers FULL aft and click the bottom 0% **SET** button.

Calibration is now complete! Click **OK** to save these settings & return to the **Configuration** page, or **CANCEL** to return and revert to previous

settings without saving. Quit and restart ***ELITE*** for new calibration settings to take affect.

Real aircraft are inherently stable. PC-based simulators are not. For inexperienced simulator pilots, the most common difficulty is over-controlling or getting used to the control sensitivity. Practice basic flying maneuvers as you would in any new aircraft transition before starting your IFR practice. Remember "the less is more" adage and make small pitch and roll corrections for variation in altitude and/or heading. Do NOT chase the VSI. Monitor instrument/needle trend, not just movement. This makes for smooth, precise, instrument flight and prevents awkward action/reaction responses.

Elite Hardware



Press "Elite Hardware" button to see ELITE USB hardware connected

Adjusting control sensitivity:

Control dampening is designed to desensitize or add slop to the controls. Start with low to mid-range values and adjust to your satisfaction. Yaw usually requires more dampening than pitch or roll. Click on **SAVE** to store new dampening values after adjustment.

Numbers between 0.00 (no dampening) and 0.50 (maximum dampening) change the sensitivity of flight control devices.

ELITE XTS BCLS-H CONFIGURATION

Overview

In addition to the existing Pro Panel II, ELITE XTS supports the new ELITE ProPanel III console and the Brunner CLSH yoke out of the box.

ELITE Startup

The following description apply only when a control loaded yoke is connected and detected by ELITE XTS.

When starting up ELITE XTS the control loaded yoke is initialized. This process takes a few seconds, during which the following message is displayed:

The initialization process moves the yoke through its whole range, so be careful not to inhibit the movement by any kind of objects, otherwise the calibration will fail.

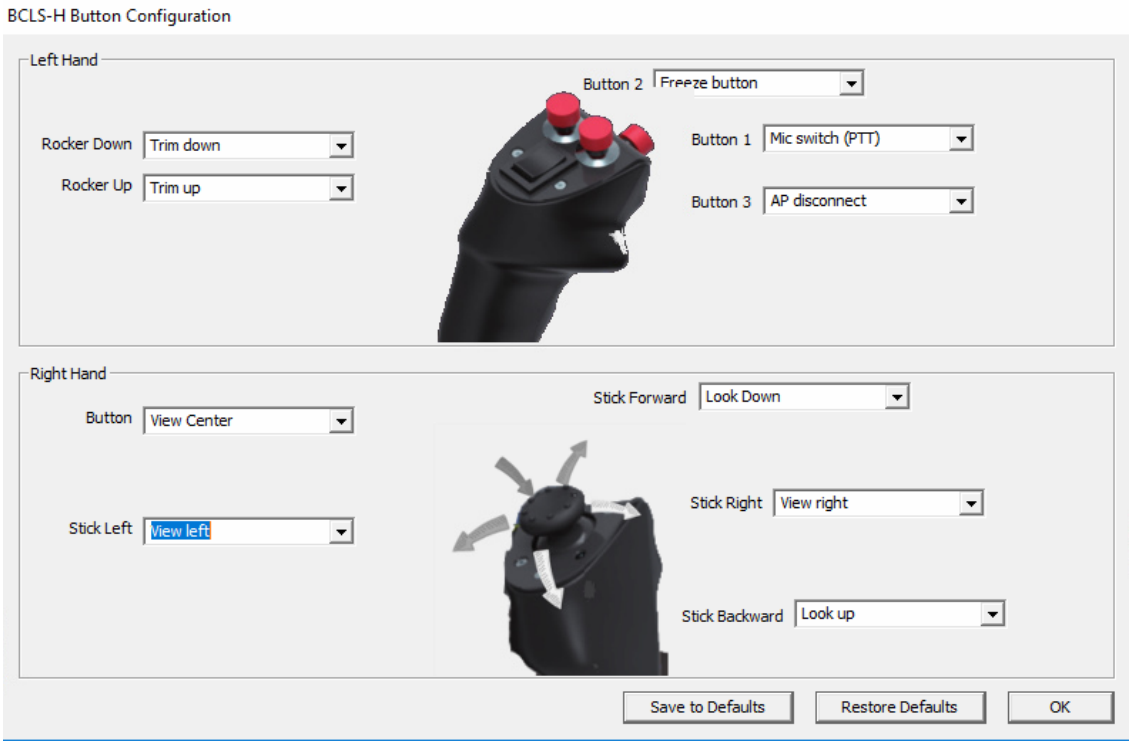
CLS Configuration

If a control loaded yoke is detected a new menu item named "CLS INFO" is added to the context menu.

Clicking on this menu item opens the following panel:

The figures shown on the left side reflect the current position and force of the various yoke axes and are for information only. The axes assignments are pre-defined by ELITE and cannot be changed.

Button assignments can be customized by clicking on the button " Configure Buttons", which opens the button configurationform.



The button configuration is quite straightforward, just select the action to be assigned to the corresponding button from the drop-down list.
The elements on the form are not animated (pressing on a button on the yoke will not be reflected in theform).Once the assignments have been done, click on OK to save the currentconfiguration or on the "Save to Defaults" button if you want the currentassignments to be saved as default.

Clicking on "Restore Defaults" will set back the button assignments to the configuration last saved as default.

MEASUREMENT FOR WEIGHT & FUEL

You can choose what units of measurement are displayed for weight and fuel values as desired.

- Weight in pounds or kilos
- Fuel in liters, U.S. gallons or Imperial gallons

CHANGING COLOR OF NUMBERS

For readability, you can change the color of numbers shown on all screens, except the photo-realistic panels. Click on **RED** or **YELLOW** as desired.

SECOND MONITOR

If you are using an ***ELITE*** system with a 2nd (instructor's station) monitor, an additional display panel will appear below the **Color for Digits** panel. Pressing the **2ND SCREEN** button assigns the program menu to the 2nd monitor. This allows easier access to the program menu items from the instructor's station.

SOUND AND VOLUME CONTROL

ELITE's **A**dvanced **T**rue **I**ntegrated **S**ound (ATIS) smoothly mixes multiple-channel aircraft and ATC sounds providing a realistic, uninterrupted, high quality, ((stereo)) audio environment (stereo sound card and speakers required). The **Sounds** control panel illustrated above lets you tailor or mix individual sound elements, giving you complete control of your ***ELITE*** sound experience.

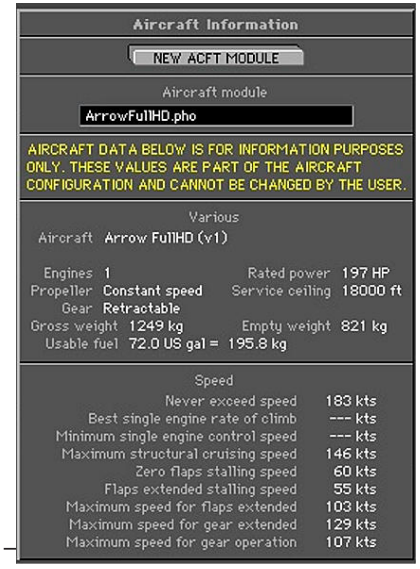
Engine sound can also be switched **ON** or **OFF** with the "**E**" key on the keyboard.

3D SOUND

When enabled, allows for an enhanced audio experience on 3D compatible sound systems.

AIRCRAFT INFORMATION

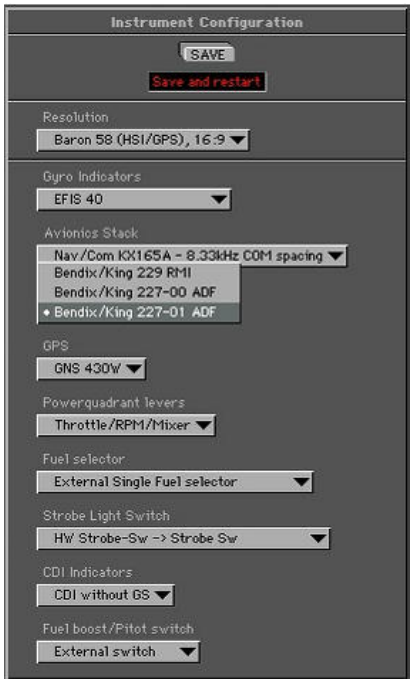
The **Aircraft Information** panel shows actual aircraft configuration details.



Figures cannot be changed and are for information purposes only.

INSTRUMENT CONFIGURATION

The **Instrument Configuration** panel is different for each aircraft module depending on the cockpit resolution(s), instrument configurations, power units, and external switches unique to that module.

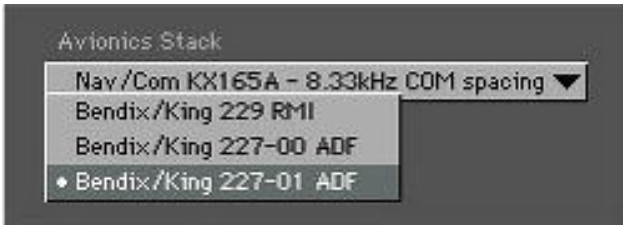


Instrument Configuration panel of B58 Baron

Clicking on a black arrow opens a drop-down menu displaying all available (changeable) options for that section. Drag the fingertip to the option desired and release the mouse button to make your selection.

The selected option will be indicated, replacing the previous selection.

The Baron B58 for example, has several instrument configuration options. Most notable is the ability to change from an HSI/RMI confi guration to a simple Directional Gyro (DG) and ADF configu-ration.



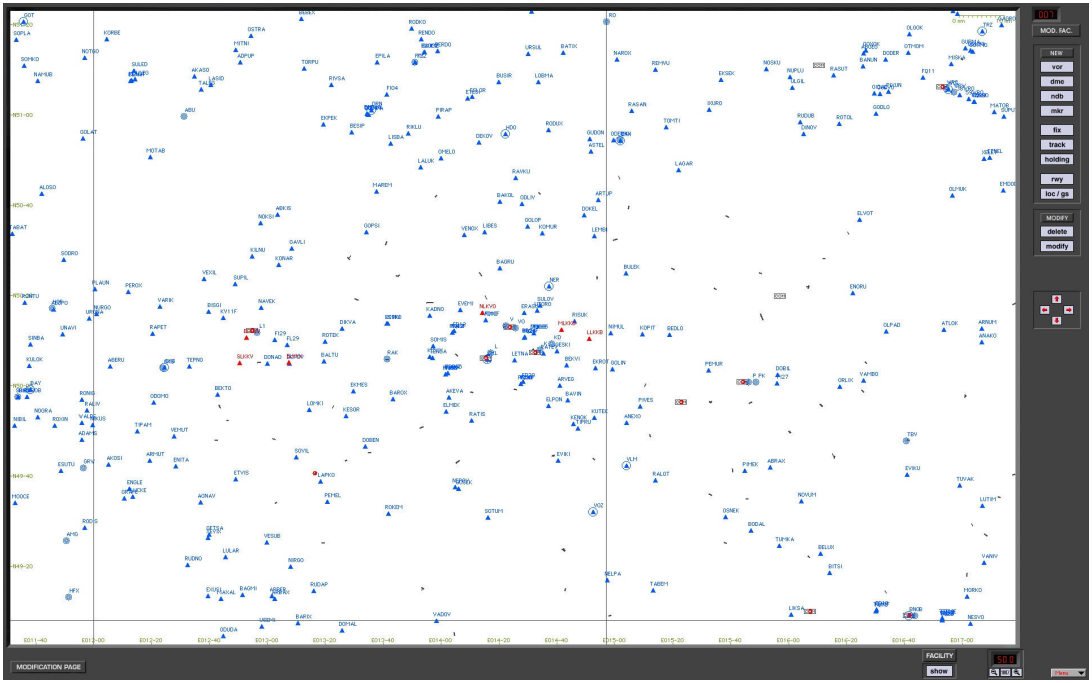
Instrument configuration panel for Baron B58

When you select and change an option on the Instrument Configuration panel you will be prompted to **SAVE** and **RESTART** ***ELITE*** for the changes to take affect.

NOTE: Changes must be saved and only take effect after a **RESTART**.

To save and quit in one action, press and hold **SAVE** button.

MODIFICATION PAGE



Modification Page

"HELP Tips" are available anytime by pressing ALT-H. Move the help cursor (?) over any on-screen item that you would like more information about. When the help cursor reveals its document icon help is available for that item. Simply click on the item to display related help tips.

The **Modification Page** allows you to create or modify up to 200 facilities, fixes, NAVaids or holding patterns in each navigation database worldwide.

CREATING FACILITIES

The desired facility can be created by clicking on the appropriate button. When a button is clicked, a window will appear showing the detailed data fields required to create the facility.

MODIFYING FACILITIES

Any facility can be modified by using the **MODIFY** button, shown on the **Modify** panel.

Click on the **MODIFY** button and then the desired facility to be changed. A window will appear with the specific data of the facility. Data can be changed and the change will take effect after clicking on the **OK** button.

DELETING FACILITIES

Facilities can be deleted as well as created and modified. Click on the **DELETE** button first and then on the facility you want to delete.

A pop-up window will ask for verification before the deletion takes place.

NOTE: A deletion or modification does not modify the original database file on your hard disk, but only a copy of the data.

If you choose to delete an original facility that has already been modified, a pop-up window asks for confirmation to delete the modification.

If you choose to delete a self-created facility, the pop-up window will ask you if you really want to irrevocably delete your self-created facility.

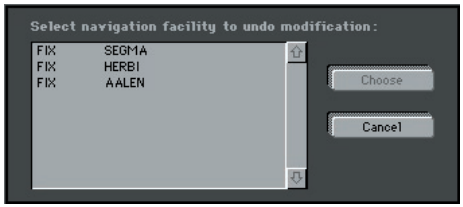
After creating, modifying or deleting a facility, click on the **OK** button to confirm the changes.

If you click on the **CANCEL** button, all previous instructions are cancelled and you return to the **Modification** page.

All self-created and modified facilities are displayed in red on the **Modification** page. When changing to the Map page, your modifications have the same appearance and color as all original data. When changing back to the MOD page, however, your changes will again appear in red.

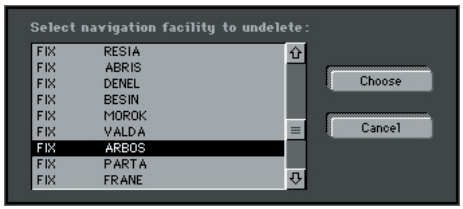
UNDO CHANGES

To return to the original status of facilities, you can undo modifications or deletions. Hold the **ALT** key while clicking on the **MODIFY** button. The following pop-up windowwill appear on the screen.



Now, select and choose to undo changes.

To restore an original facility that had been deleted, hold the **ALT** key while clicking on the **DELETE** button. The following pop-up window will appear on the screen.

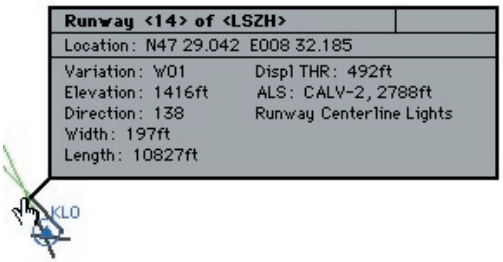


You can now undo a previous facility deletion and it will once again by displayed on the Map.

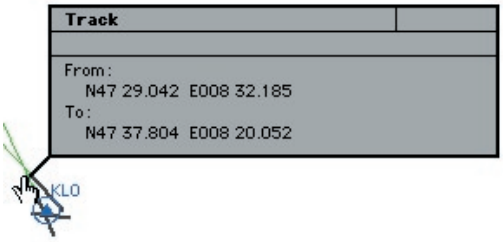
Deleting an existing (original) facility counts as one change. Deleting a self-created or modified facility releases one for further use. Undeleting a previous deletion of an original facility will also release a change for further use.

When 200 modifications have been made the following message appears:

Click on **Facilities** to display detailed information. For runway information, click on the runway threshold.



When facilities are in the same location or covered by other ones, click on the same spot once more and information about the next facility will appear.



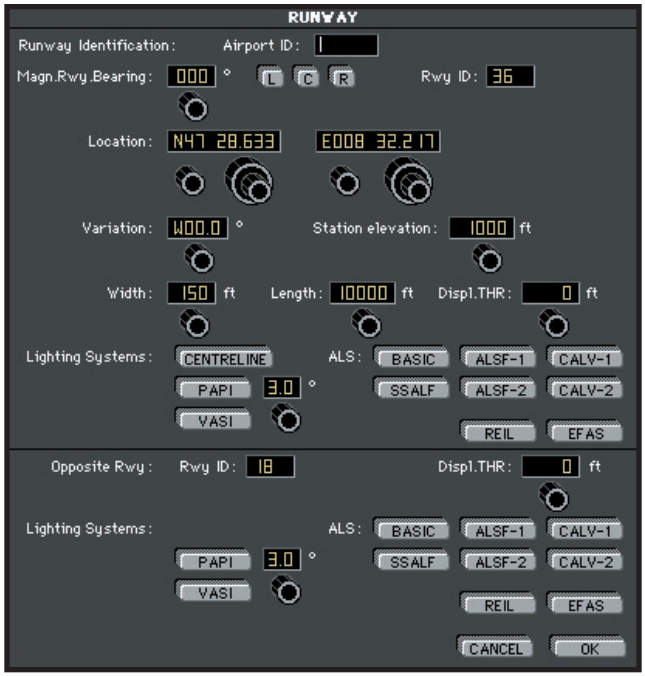
In the example above, several facilities nearly occupy the same location or are co-located. Information on these facilities is layered. Clicking the same spot repeatedly cycles through these layers to reveal information about each specific facility.


NDB
Identification code :
Location :
N47 28.633
E008 32.217
Variation :
W00.0
°
Station elevation :
1000
ft
Frequency :
350.0
KHz
CANCEL
OK


MARKER
Type :
OUTER
MIDDLE
INNER
AIRWAY
TERMINAL
Identification code (Awy/Term) :
Location :
N47 28.633
E008 32.217
Variation :
W00.0
°
Station elevation :
1000
ft
Orientation :
000
°
CANCEL
OK


FIX
Identification code :
Location :
N47 28.633
E008 32.217
Variation :
W00.0
°
CANCEL
OK


TRACK
From:
N47 28.633
E008 32.217
To:
N47 28.633
E008 32.217
or True HDG:
000
°
Distance:
0.0
nm
CANCEL
OK


RUNWAY
Runway Identification:
Airport ID:
Magn.Rwy.Bearing:
000
°
L
C
R
Rwy ID:
36
Location:
N47 28.633
E008 32.217
Variation:
W00.0
°
Station elevation:
1000
ft
Width:
150
ft
Length:
10000
ft
Displ.THR:
0
ft
Lighting Systems:
CENTRELINE
ALS:
BASIC
ALSF-1
CALV-1
PAPI
3.0
°
SSALF
ALSF-2
CALV-2
VASI
REIL
EFAS
Opposite Rwy:
Rwy ID:
18
Displ.THR:
0
ft
Lighting Systems:
ALS:
BASIC
ALSF-1
CALV-1
PAPI
3.0
°
SSALF
ALSF-2
CALV-2
VASI
REIL
EFAS
CANCEL
OK


LOC/GS
LOC:
Identification code:
Location: N47 28.633
E008 32.217
Variation: W00.0 °
Station elevation: 1000 ft
Front Crse W.: 3.0 °
Frequency: 108.00 MHz
Magn. Loc. Bearing: 000 °
BACKCOURSE
GS:
GS EQUIPPED
Location: N47 28.633
E008 32.217
GS Angle: 3.0 °
or HDG: 000 °
Distance: 0.0 nm
DME equipped:
LOC
GS
DISP
DME bias: 0.0 nm
CANCEL
OK


HOLDING
Identification code:
Location: N47 28.633
E008 32.217
Variation: W00.0 °
Inbound course: 000 °
Turn direction:
LEFT
RIGHT
Leg length: 2.8 nm
Turn radius: 1.5 nm
CANCEL
OK

SOFTWARE ISSUES

What does being a Windows native program mean?

It only means that the software will support the latest features of the windows operating system, allowing for better compatibility with computer hardware, support for new operating system features, and easier installation, setup and program navigation.

Serial Numbers Do Not Match:

The UCI/USB key and the software are encoded with the same serial number. If they do not match you will receive a warning message. Check the the sticker on the USB key (or the bottom of the UCI box if you are still using the serial ELITE hardware) and the sticker on the USB memory stick containing the ELITE software to see if they match.

Also check the bottom left corner of the program startup screen for the serial number of the program (or use the hardware COM port "Test" button if you are still using the UCI box) to determine the actual serial number of the UCI/USB key. If these numbers do not match, please contact your dealer immediately.

Bad installation media:

If there is an error in reading the USB Memory stick is physically damaged,please contact your dealer for a replacement. USB Memory sticks are tested prior to shipping. However, they store data magnetically. If exposed to extreme temperatures or magnetic fields, they can bedamaged. Please make backups of any USB sticks and store them in a safe place.

Aircraft Selection Menu:

When starting up the program and you do not get the Mini Pictures for selecting the aircraft, then the resolution of the Desktop area is not set from 1280 x 768 to 3840 x 2160. Change the Display Properties (Windows) to the proper resolution.

Navigation Data Selection:

If you receive an error when opening navigational database, then the serial number of the navigational database does not match the program or the navigation database has not been installed. Please contact your dealer immediately.

HARDWARE ISSUES

What does it mean that ELITE supports Multi-monitor capability?

Although not a requirement to run ELITE, the multimonitor capability allows for setting up a separate instructor's station on an additional monitor attached to the one computer equipped with two or more video cards or a video card with multiple monitor support. The use of the second monitor allows the ELITE program to displaythe outside view or the Map, Weather, and Control pages on one screen, while the otherscreen is dedicated to the instrument panel. By doing this, it allows an instructor to monitor a persons flight path, give "radar" vectors, invoke failures, and change weather all with out stopping and interrupting the students flight.

What flight control devices (sticks/yokes/rudders) are compatible with ELITE?

Just about any stick, yoke, or rudder pedals that are recognized by the operating system, Windows, will be compatible with the ELITE Pilot XTS programme. ELITE uses direct input from the Windows operating system to interface with controls plugged into the PC USB port (or SERIAL port). ELITE also has the ability to use a wide variety of other advanced control devices, such as Throttle Quadrants, Flight Consoles, and Avionics Panels. Currently up to two game devices are supported simultaneously by ELITE XTS, e.g. either a yoke and pedals, a yoke and a throttle quadrant etc.

Can I use the digital flight consoles, avionics panels, and throttle quadrants with other flight sims?

The ELITE hardware devices can be used with FSX, Prepar3D v3, Prepar3D v4, X-Plane 10 and X-Plane 11 with hardware specific drivers. These drivers can be downloaded for free from www.flyelite.ch or www.flyelite.com (FSX, Prepar3D) or purchased from www.simplugins.com (X-Plane). The throttle quadrants may operate without a driver with a few other programs, if those programs can interface with a device using an EPIC card.

How do I connect flight controls to my computer?

Yokes, joysticks, and rudder pedals can be plugged directly into the computer's USB, SERIAL port or a Serial2USB connector depending on the connection(s) required by each.

ERROR MESSAGES

"DISK FULL"

Hard drive space required not available.

Need to free up hard drive space.

INSTALLATION STARTING IN "DEMO" MODE

USB Memory stick not detected, or defective.

Insert or replace USB Memory stick.

PROGRAM FREEZES ON INSTALLATION

Another application is halting the installation.

End all pending tasks (CTRL +ALT+DEL).

"NOT ENOUGH MEMORY"

Computer does not have enough resources.

Restart CPU or free up more resource.

"RESOLUTION ERROR"

Elite requires a display set to at least 1280 x 768 resolution.

Need to change your screen resolution.

"NO OPEN GL SUBSYSTEM"

Elite can't display graphics.

Need to install an Open GL capable video card or latest drivers of your current video card.

"NO ELITE CONTROL DETECTED"

Control Interface or USB Key not detected.

"ELITE SERIAL NUMBER MISMATCH"

Elite serial number not the same.

Check physical number on the software to the one on the USB **WIBU** *key or UCI to be the same. (If not contact support dept.)*

CONTROLS DO NOT OPERATE CORRECTLY

Controls are not properly calibrated.

Re-calibrate controls in the Configuration Page (Under calibration section).

NOTES:

CHAMPAIGN-URBANA, ILLINOIS

LOC I-CMI	APP CRS	Rwy ldg	8100
109.1	316°	TDZE	749
		Apt Elev	754

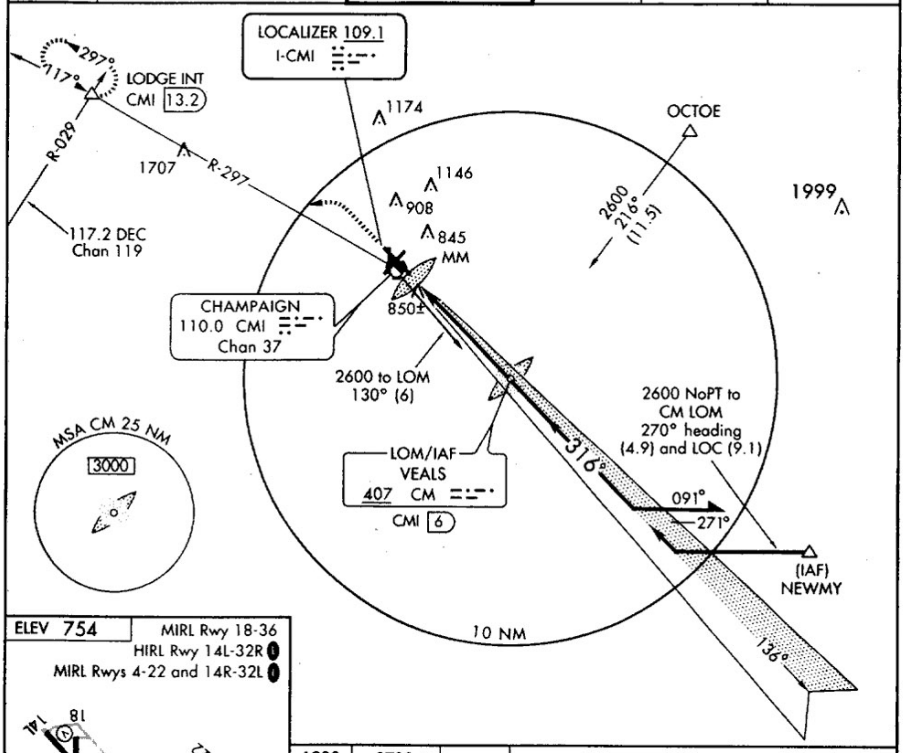
ILS RWY 32R
CHAMPAIGN-URBANA/UNIVERSITY OF ILLINOIS-WILLARD (CMI)

ASR

MALSR

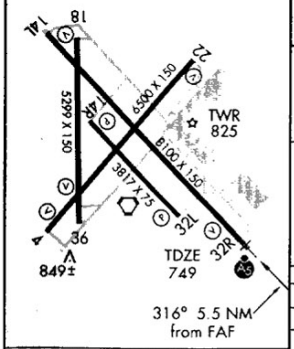
MISSED APPROACH: Climb to 1200, then climbing left turn to 2700 via CMI R-297 to LODGE Int and hold.

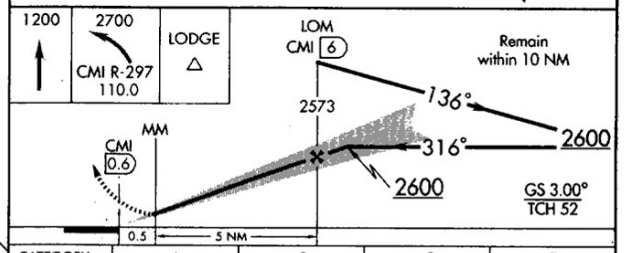
ATIS	CHAMPAIGN APP CON *	CHAMPAIGN TOWER *	GND CON	CLNC DEL	UNICOM
124.85	121.35 285.65 (316°-135°) 132.85 291.0 (136°-315°)	120.4 (CTAF) 229.4	121.8	128.75	122.95



ELEV 754

MIRL Rwy 18-36
HIRL Rwy 14L-32R
MIRL Rwys 4-22 and 14R-32L





FAF to MAP 5.5 NM					
Knots	60	90	120	150	180
Min:Sec	5:30	3:40	2:45	2:12	1:50

CATEGORY	A	B	C	D
S-ILS 32R	949/24 200 (200-½)			
S-LOC 32R	1100/24 351 (400-½)			1100/40 351 (400-¾)
CIRCLING	1160-1 406 (500-1)	1220-1 466 (500-1)	1220-1½ 466 (500-1½)	1320-2 566 (600-2)

Trimble 2000 Approach Plus
Quick Reference Card

The following principles apply to all Navigator functions:

SMALL, INNER SELECTOR KNOB

Use the small, inner selector knob to:

- Scroll thru Primary pages and top lines of displayed mode.
- Change alphanumeric or available option/function of any editable field.

LARGE, OUTER SELECTOR KNOB

Use the large, outer selector knob to:

- Scroll thru Flight Plan legs, Secondary pages and bottom lines of displayed mode.
- Move flashing cursor between editable fields on page.

D→	*(1st press)*	Selects displayed Waypoint, Procedure, or Flight Plan for activation.
	(2nd press)	Activates course steering as selected (escape provided by any other key).
ENT	*(1st press)*	Opens any editable field on displayed page.
	(2nd press)	Accepts entered data.

MSG

View 1 message per press.

(The Message key will flash until all messages have been viewed.)

Press Mode key multiple times to select desired category/function. Hold for >2 seconds to return to Primary page of mode. When the unit is first turned on, category/function will display in the following order:

NAV

(1st press)	Primary Navigation
(2nd press)	Waypoint Information

WPT

(1st press)	Airport
(2nd press)	Approach
(3rd press)	SID
(4th press)	STAR
(5th press)	VOR
(6th press)	NDB
(7th press)	Intersection
(8th press)	User

CALC

(1st press)	Flight Plan/Fuel
(2nd press)	Air Data
(3rd press)	Save Present Position

FPL

(1st press)	Active Flight Plan
(2nd press)	Active Leg, BRG, Distance & ETE

FPL

(3rd press)	Stored Flight Plan(s)
(4th press)	Stored Leg, BRG, Distance & ETE

AUX

(1st press)	Checklist
(2nd press)	System Status
(3rd press)	Sensor Status
(4th press)	Configure
(5th press)	Install

NRST

(1st press)	Nearest Airport
(2nd press)	Nearest Approach
(3rd press)	Nearest VOR
(4th press)	Nearest Agency
(5th press)	Nearest NDB
(6th press)	Nearest Intersection
(7th press)	Nearest User

The knob symbols (◉ Inner knob, ● Outer knob) apply for all pages following.

Selection of APPROACH/SID/STAR:

WPT

* APPROACH ** SID ** STAR *

```
SFOA <VOR B      >APR
IAF/TRAN: SAU
```

- Selects APR/SID/STAR for displayed Airport.
- View legs of selected procedure

Press ENT to edit Transition:

Airport or procedure

- Place flashing cursor on field to edit
- Change data in edit field

Press ENT to complete selection.

To activate APPROACH/SID/STAR:

WPT

* APPROACH ** SID ** STAR *

```
EUGA <VOR 34     >APR
IAF/TRAN: D130N
```

- Select Approach/SID/STAR

ENT - To select transition

Press ENT to complete selection.

- Turn to desired leg

  Press -D- to join above selected leg
- One click counterclockwise to go direct to *FROM* Waypoint
- If desired, select course to the *FROM* Waypoint

-or-

- One click clockwise to go direct to *TO* Waypoint
- If desired, select course to the *TO* Waypoint

Press -D- to activate.

Approach Flow:

At 30nm from Destination Airport, Approach Enabled message will appear.

```
APPROACH ENABLE? ENT
BARO: 30.12 CDI: ±5.0
```

The barometric setting field will flash. Enter barometric setting.

- Change data
- Change edit field

Press ENT to complete selection.

CDI Sensitivity

En route sensitivity is 5 nm. Within 30 nm of departure or destination airport, it is 1 nm. At 3 nm from the FAF, it is 0.3 nm.

At 2 nm from Final Approach Fix, APR annunciator comes on.

CAUTION:

If Approach annunciator is not lit;

- **DO NOT DESCEND**
- **COMPLETE MISSED APPROACH**

At Missed Approach Waypoint, HLD annunciator comes on.

To execute Missed Approach:

Press -D- once to enable.

Press -D- second time to activate.

NAV

Primary NAV Page 1

```
LAXA 120° 143N 0:34
[····10····]124°250
```

Available top line displays:

- TO Waypoint name
- TO Waypoint ETE and ETA
- HDG, TAS, Wind
- HDG, TK, Drift Angle
- DTK, Fly left or right to correct XTK error, XTK error
- MSA and MESA
- TKE graphic, DTK and Dist. to the TO Waypoint

Available bottom line displays:

- CDI, TK, GS
- HDG, TAS, Wind
- HDG, TK, Drift Angle
- MSA and MESA
- TO Waypoint ETE and ETA
- DTK, Fly left or right to correct XTK error, XTK error
- Advisory Waypoint range and BRG

Press NAV and hold for >2 seconds. The Primary NAV Page is displayed.

To access waypoint information from the NAV mode, press NAV.

- Displays Flight Plan Waypoints
- Displays Waypoint information

To access Waypoint functions:

Press WPT to select appropriate category.

WPT

*** AIRPORT ***

```
SFOA 313° 243NM ClsB
SAN FRANCISCO     CA
```

- Scan Airports
- City
- Name
- Frequencies
- Elevation
- Lighting
- Runway Information
- Position

WPT

*** APPROACH ***

```
SFOA<VOR B        >APR
IAF/TRAN:SAUY
```

- Scan APRs for displayed airport
- Approach CRS to FAF
- Direct To FAF
- IAF/TRANS
- Approach legs

WPT

*** SID ***

```
SFOA<CUIT1        >SID
RWY:01 TRAN:CICV
```

- Scan SIDs for displayed airport
- SID TRANS
- SID legs

WPT

*** STAR ***

```
SFOA <BSR1        >STR
TRAN:BSRV
```

- Scan STARs for displayed airport
- STAR TRANS
- STAR legs

WPT

*** VOR ***

```
SGDV  219° 893NM
NAPA              CA
```

- Scan VORs
- City
- Name
- VOR Frequency
- Code
- Position

WPT

*** NDB ***

```
FN    277° 495NM
FARALLON ISLAND   CA
```

- Scan NDBs
- City
- Name
- Frequency
- Code
- Position

WPT

*** INTERSECTION ***

```
TWAIN:063°1358NM
REGION:NORTH CENTRAL
```

- Scan INTs
- Region
- Position

WPT

*** USER ***

```
TRMBLU196° 116NM
37°23510N122°06490W
```

- Scan USER
- Position
- Edit
- Erase
- Add new Waypoint

Navigator will store 40 FPLs with 40 WPTs per FPL. Limit 400 WPTs.

ACTIVE FLIGHT PLAN MODE

FPL

```
LAXA  -→PHXA      325NM
LEG 2: PDZV  PSPA
```

Flight Plans are arranged in alphabetical order by destination.

- or Sequences thru Active Flight Plan legs
- Cancel active flight plan

Hold FPL >2 sec returns to active Flight Plan.

STORED FLIGHT PLAN MODE

FPL FPL

- or Sequences through Stored Flight Plans
- Sequences through Stored Flight Plan legs
- Reverse FPL
- Erase FPL

(FLIGHT PLANNING continued:)

ACTIVATING A FLIGHT PLAN

FPL to Stored FPL

Select desired Flight Plan

Select desired leg in bottom line

Join Leg Page

Press to complete selection.

— OR —

Join Leg Page

Direct to *From* Waypoint

Select course to *From* Waypoint

Press to complete selection.

— OR —

Join Leg Page

Direct to *To* Waypoint

Select course to *To* Waypoint

Press to complete selection.

TO CANCEL ACTIVE FLIGHT PLAN

FPL

or To cancel

Press ENT to complete cancelation.

— OR —

Also, current active Flight Plan can be canceled by selecting another Flight Plan.

— OR —

Select a Direct To to a new destination from WPT or APT/VOR

EDIT/ADD NEW FLIGHT PLAN

FPL to Stored FPL

Add new Flight Plan

ENTERING WAYPOINTS TO FPL

ENT

```
ADD NEW FLIGHT PLAN
start +aSJC  -end
```

Waypoint category A - Airport

APRCH - Approach

SID

STAR

V - VOR

N - NDB

I - Intersection

U - User

Changes EDIT cursor

Changes data

Press ENT to add Waypoint.

— OR —

If Identifier not known;

WPT To desired category

ENT Edit IDENT/CITY name

Move EDIT cursor

Change data

ENT To stop EDIT

FPL To place Waypoint in Flight Plan

CALC

*** FLIGHT PLAN/FUEL ***

```
FPL GS 160% ETE 1:11
 DIST  191% ETA 9:25
```

Time, Distance & Speed

Fuel Management

Fuel Remaining

Fuel At Arrival

Total Fuel Used

Engine Fuel Flow

CALC

*** AIR DATA ***

```
PRESSURE ALT     112%
BR 30.32 IND ALT 116%
```

Pressure Altitude

Density Altitude

True Airspeed

Winds Aloft

Crosswind & Headwind

AUX

* CHECKLIST *

(See Section 8.1 of the Pilot Guide for data on the Checklist Function)

AUX

* SYSTEM STATUS *

```
FRIDAY   28-FEB-94
14:28:53z   PST 06:29
```

- Date/Time
- Present Position
  - Altitude Source
  - Current Altitude
- Voltage/Temperature
  - Crystal/Memory Battery
  - Antenna Voltage/Current
- Database Expiration
- Software Revision
- System Code

AUX

* SENSOR STATUS *

```
GPS: 3D/BARO     RAIM
MODE: APR    PDOP: 16
```

- GPS Mode
  - Estimated Accuracy
  - Satellites Tracked
  - Satellite Data
  - Reset GPS Sensor
- Satellite Availability
- Approach RAIM Availability

AUX

* CONFIGURE *

```
PARALLEL OFFSET:
 200m RIGHT
```

- Parallel Offset
- I/O Interface Check
- Dead Reckoning/Demo
- Install and Test Setup
  - Display Diagnostic

AUX

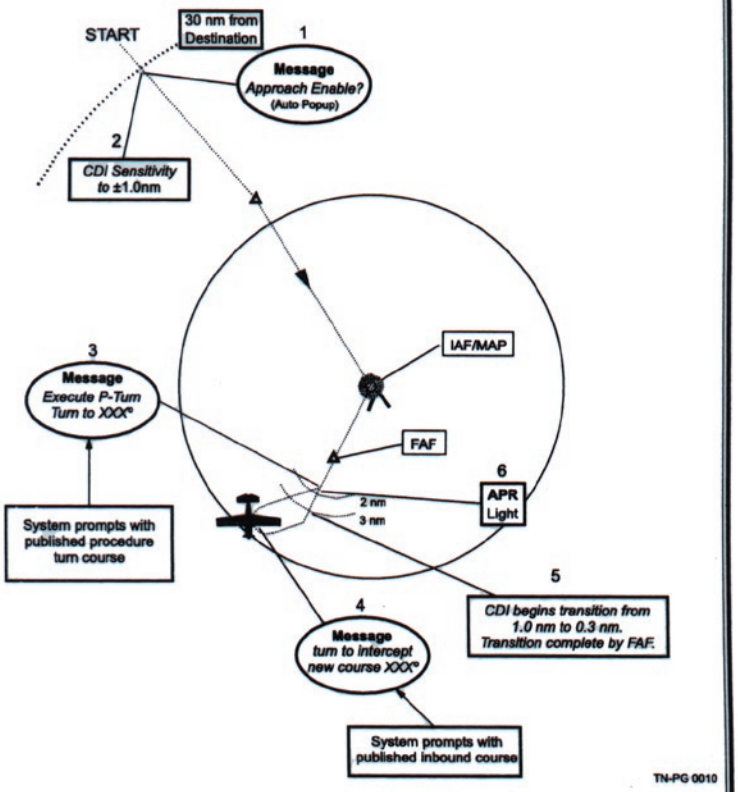
* USER SETUP *

(if enabled)

```
SEARCH REGIONS: SW
CA  NV  AZ  UT  CO
```

- Database Search Regions
- Airwatch™
- Safeguard™/Personal Message
  - Safeguard™
  - Personal Access Code
  - Create Personal Message
- Save/Load Configuration
  - Save via RAM Card
  - Load via RAM Card
  - Save via Serial Port
  - Load via Serial Port

Approach Messages and Annunciators



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