Final Approach Help Index

Help on the following topics is available:

About Final Approach

Most modern flight simulators have reached a level of realism that makes the use of real-world instrument approach plates (IAPs) almost a necessity. Unfortunately, only few charts are generally included with these programs and the same is true for most of the Scenery Disks.

On the other hand, countless ASD-Sceneries AAF-Adventures to be downloaded from Bulletin Board Systems all around the world. Again, these sometimes excellent productions would strongly gain in interest and usability if their designer had found a way to include digitized Instrument Approach Plates with his files.

This is where Final Approach comes into play.

With Final Approach you will display and, if you wish, even design your own Instrument Approach Plates right on screen. You may also generate vectorized hardcopies in the highest resolution available on your printer.

For obvious reasons, the charts you generate are not to be used for real world navigation.

Users of Final Approach are encouraged to distribute the Instrument Approach Plates they create, with the single restriction that they may not charge for this service. Above all, don't hesitate to upload your IAPs to the CompuServe FSFORUM

Final Approach Registration

Please select a topic:

Final Approach Basics

Final Approach is aimed at two kinds of users: Some will use it to display and print IAPs, provided by third-party developers, others will get behind the drawing board and design their own charts, which they can then share with other users of PC-based flight simulators.

Because the resolution of our current generation of monitors would hardly allow for a complete IAP to remain easlily readable on-screen, Final Approach displays the plan view and the profile view in two different windows.

Each window contains two vertical rows of buttons:

The buttons in the **left row** are used for drawing the elements of your IAP. They are specific to the plan or profile view window.

The buttons in the **right row** perform more general functions like loading, saving, undoing and more. They are identical in both windows.

To switch beween plan and profile view, select the coloured button labeled "Switch to Profile View" or "Switch to Plan View". Please remember that the unregistered version will show and print a default profile only, that is in no way related to the currently loaded IAP.

Design Buttons - Plan View

Please select a button from the list:

Basic
Runway
Approach
Outer Marker
Intersection
Holding
VOR
NDB
Line
Free Text
Navaid Box
ILS Box

Design Buttons - Profile View

Please select a button from the list:

Basic
Glideslope
Glidepath
Intersection
Marker
VOR
NDB
FAF
Fix label
Altitude
Free Text

Right-hand Buttons

Please select a button from the list:

New
Load
Save
Save as
Print
Clipboard
Undo
Erase

Checkboxes

Please select a checkbox from the list:

Display Grid
Snap to Grid
Show Numbers

Unregistered version limitations

The unregistered version of Final Approach 2.1 provides the full set of design tools also featured by the licensed version. It lets you design complete Instrument Approach Plates, save them to disk and distribute them as such or together with your ASD-sceneries AAF-adventures.

One single limitation applies: While you can design and subsequently save and print **both the map view and the profile view** of your newly created approach plate, the unregistered version will **not allow reloading the profile view** of any IAP from disk. Regardless of the IAP you load, you will always find the same standard default profile in the profile window. This profile is not related to the loaded IAP and will be marked "demo only".

So be careful when designing IAPs with an unregistered version of Final Approach. Once you have finished work on a new IAP, remember to print it immediately! You will not be able to reload (and possibly rework) the approach profile later, unless you register your copy.

How to register

The license fee for Final Approach is 30$. A rebate of 1$ is offered for every IAP you submit up to a 15$ rebate maximum. See Registration Discount

Send your exact name and address together with your payment or credit card information via one of the channels indicated below. You may consider using the included registration form ("register.frm") for this purpose.

Upon reception of payment you will be sent a personal license number. From the Final Approach startup screen, select "Enter license" and fill in the requested data exactly as it appears on your registration sheet (including spaces and upper-/lowercase).

Your name and license number will be saved to the file "register.key" created in the current directory. The program will immediately become fully functional. Your name and license number will be displayed upon each program startup and in the About window.

The author can be reached by mail, email, fax or through CompuServe.

Georges Lorsche
5, rue des Violettes
L-3447 Dudelange
Luxembourg/Europe

CompuServe ID: Georges Lorsche 100041,211 (scanned daily)
InterNet: 100041.211@compuserve.com
Fax: +352 459210

Accepted methods of payment:

VISA Credit Card:
This is by far the fastest, safest and most convenient way of transferring your payment. Please communicate your 16-digit VISA card number, the expiration date and your exact name as it appears on the card. After your data has been verified, the license number will be sent immediately (generally within 24 hours).

International money order:
Not as fast as credit card payment, but just as reliable.

Transfer to bank account:
Transfer the registration fee in USD to our bank account 7-117/2779/550 at the Banque Internationale a Luxembourg (BIL). European users who want to register in their local currency should use account number 7-117/2779.

Bank check:
Collecting US-checks in Europe is very expensive. If you have no other way to transfer your payment, you may of course still send a check. Unfortunately no discount can be given for eventual IAPs you may want to submit.

Eurocheque:
Collecting Eurochecks in other European currencies is no less expensive. If you have no other way to tranfer your payment, you may of course still send an Eurocheque. Again, no discount can be given for eventual IAPs you may want to submit.

Cash in envelope:
Sending cash by postal services is an easy but a bit unsafe way to transfer your payment. Please make sure at least that the money is not visible through the envelope.

Registration discount

A substantial registration discount of up to 50 % is offered to every user who is willing to design and submit at least a couple of IAPs from his local or preferred airports before registering. This works towards rapidly making a lot of electronic approach plates available for everyone to use. And that, after all, is what this program is all about!

The author is willing to coordinate the design process, collect the IAPs, bundle them into coherent sets and make them publicly available. This distribution will be absolutely free. You will find the IAP sets on the CompuServe FSFORUM users will be mailed complete IAP collections for a nominal shipping fee.

Applying for a registration discount is straightforward:

First communicate which IAPs you are willing to design. See the section on How to register check that no other user has applied for the same IAPs and reply accordingly.

After you have terminated your IAPs, submit them via email or postal service. For every at least standard quality IAP you will be given a 1$ rebate (up to a maximum of 15$). Delivering 15 acceptable IAPs will thus cut the 30$ registration fee in half.

Note: The author reserves the right to refuse IAPs designed the quick and dirty way and clearly below standard quality.

News and updates

The primary source for information about Final Approach will be the CompuServe FSFORUM. This is the hot spot where you will find news, fixes and updated versions first. The author will daily scan the FSFORUM for discussion of bug reports, whishes and additional information.

Once you have registered,
2.x versions of Final Approach. When an updated version becomes available, you may download and license it without additional payment.

To license a newly downloaded version, you needn't even go through the registration process again. Simply keep the old "register.key" file in the Final Approach directory. Final Approach will recognize you as a legitimate user and run up to full functionality.

Basic

This is where you define the header of your IAP.

Selecting **<Give model>** will enter default values in all fields, thus providing an idea of what is expected.

Map Name: Location of the airport (ex: SEATTLE, WASH)

Airport: Name of the airport (ex: TACOMA INTL)

Approach: Type of approach and runway (ex: VOR Rwy 34L)

Main Nav: Type, frequency and identifier of the Nav station the approach is based on (ex: VOR 116.8 SEA)

Apt. Elev.: Elevation in feet above MSL, number only (ex: 429)

Cant Angle: Number with optional negative sign (ex: 5 or -5).

Because of the geographic difference between Magnetic North and True North the headings on an IAP are generally canted one way or another. If you enter a positive Cant Angle, your lines (runway, approach, VORs) will be canted forward by as many degrees, a negative number will cant them backward. Values between -40 and 40 are allowed.

Frequencies: If a frequency is not available, leave the corresponding field blank.

FS East and North: Airport coordinates as used by Microsoft Flight Simulator coordinates included will certainly be welcomed by the users of your IAPs. The coordinates will show up in fine print below the IAP hardcopy.

Scenery Info: Enter a short description of the scenery required (or that you would recommend) for actually flying the approach in the simulator. If included, this memo will show up in fine print below the IAP hardcopy.

Runway

First define the heading of your runway by moving the horizontal scroll bar with the mouse, the cursor keys (1 degree increments) or PgUp/PgDn (10 degree increments).

Click <OK>. The windows closes. Now place the runway threshold by clicking at the appropriate location on the drawing canvas.

Note: The runway will be canted automatically to match the Cant Angle set in the plan view Basic dialogue.

The button is available any time. If you decide to change the runway heading or location, simply reselect <RUNWAY>.

Beware though: Redoing the runway will erase the approach line, the Outer Marker and eventual intersections you may already have drawn!

Approach

First define the approach heading by moving the horizontal scroll bar with the mouse, the cursor keys or PgUp/PgDn.

You have several more options:

* Select **Procedure Turn left** or **Procedure Turn right** to include the Procedure Turn symbol at the beginning of the approach line.

* Check **Localizer** for an appropriate representation of the localizer symbol on an ILS-approach.

* Check **Middle Marker** to have the corresponding symbol drawn slightly ahead of the runway threshold.

Click <OK>. The windows closes. Now click on the drawing canvas to define the length of the approach line (the distance between the start of the approach line and the runway threshold).

Example: Let's suppose that you have defined an approach heading of 090 degrees. Now you can click at one inch from the runway threshold (anywhere in an 360 degree circle around it). The approach line will start at the distance from the runway threshold you clicked at, but aligned automatically to the 090 degree heading that you defined in the dialogue window.

Note: The approach line will be canted automatically to match the Cant Angle set in the plan view Basic dialogue.

The button is available any time, once a runway is present. If you decide to change the approach settings or length, simply reselect <APPROACH>.

Beware though: Redoing the approach will erase the Outer Marker and all eventual intersections you may already have drawn!

Outer Marker

Click on the drawing canvas to define the distance between the runway threshold and the Outer Marker beacon.

The elliptical Outer Marker symbol is automatically centered onto the approach line, even if you click outside. If the distance you indicate with your mouseclick is longer than the approach line, the Outer Marker is placed at the very end of the approach line.

The button is available any time, once an approach line is present. If you decide to change the location of the Outer Marker, simply reselect <OUTER MARKER>. The old Outer Marker will be erased and you can define a new one.

Intersection

Click on the drawing canvas to define the distance between the runway threshold and the desired intersection. A maximum of three intersections is allowed. If you accidentally misplaced one, select <UNDO> before placing any other element.

The intersection symbol (a small triangle) is automatically centered onto the approach line, even if you click outside. If the distance you indicate with your mouseclick is longer than the approach line, the intersection symbol is placed at the very end of the approach line.

The button is available only if an approach line is present and until the three intersections have been drawn.

Holding

The beginning of a holding pattern is referred to as "holding fix". It might be located straight above a VOR or NDB, or be defined by the intersection of two VOR radials.

The holding direction is the course towards to holding fix. Immediately after passing the fix, a standard-rate right or left turn is engaged.

First define the **holding direction** by moving the horizontal scroll bar with the mouse, the cursor keys or PgUp/PgDn.

Select **Draw intersection symbol at holding fix** if the fix is defined by VOR radials. The intersection symbol (a small triangle) is then placed at the fix position.

Decide whether the holding requires **right or left turns**. The standard holding procedure is to turn right.

The <HOLDING> button is available anytime. To erase the holding and draw a new one, simply reselect <HOLDING>.

VOR

Select <VOR> to place the symbol for that navigation facility on your plate. This symbol is canted automatically to match the Cant Angle set in the plan view Basic dialogue. A maximum of three VORs is allowed.

Place the center of the symbol by clicking at the desired location on the drawing canvas. If you accidentally misplaced it, select <UNDO> before placing any other element.

The button is available until the three VORs have been drawn.

NDB

Select <NDB> to place the symbol for that navigation facility on your plate. A maximum of three NDBs is allowed.

Place the center of the symbol by clicking at the desired location on the drawing canvas. If you accidentally misplaced it, select <UNDO> before placing any other element.

The button is available until the three NDBs have been drawn.

Line

On an IAP, lines symbolize VOR radials and define intersections. Therefore Final Approach expects each line to be attached to an intersection, holding fix or VOR. A total of six lines is allowed.

First you will decide which element to attach the line to. The line will start at the element you selected. Now click on the drawing canvas to define the other end of the line. If you accidentally misplaced a line, select <UNDO> before placing any other element.

The button is available until the six lines have been drawn.

Note: If you are unsure which one of your VORs/intersections is nr. 1, 2 or 3, you may select the checkbox labeled "Show Numbers" to the lower right of your screen. All multiple elements on the canvas (including VORs and intersections) will then display their running number.

Free Text

Select <FREE TEXT> to place up to twelve formatted text strings on the chart. In a dialogue window, you may type the text to display, define the desired point size and whether you want the text bold or regular.

Three separate lines are available, which is particularly handy to place radial labels with station ID, frequency and radial number above one another. Note that only consecutive lines will be displayed, so if you should want text in lines 1 and 3 only, add a space to the second line.

Click <OK> and place the text by clicking at the appropriate location on the drawing canvas. The first text line will start to the immediate right of your mouseclick.

If the text doesn't fit (wrong point size or length) or you misplaced it, select <UNDO> before placing any other element. Then reselect <FREE TEXT>. Your old text string will still be there, so you can easily change point size, attribute and location.

The button is available until the 12 text strings have been placed.

Navaid Box

VORs and NDBs are generally identified by shadowed boxes, containing the frequency and the two- or three-letter-code of the facility. Examples of this would be 113.6 LAX for a VOR or 327 AY for an NDB.

Select <NAVAID BOX> to place up to six such shadowed boxes on the plate. In a dialogue window, you may type the text to display, define the desired point size and whether you want the text bold or regular. The recommended text size and attributes (10 point bold) are preset by default.

If you respect two simple rules, Final Approach will automatically include the appropriate morse ID in the box. Just put the station ID last and write it in all uppercase letters. So "113.6 LAX" will trigger the morse code generator, while "113.6 Lax" or "LAX 113.6" will not.

Click <OK> and place the box by clicking at the appropriate location on the drawing canvas. Your mouseclick will correspond to the upper left corner of the box.

The box size will automatically adapt to the displayed text heigth and width. If it doesn't fit or you misplaced it, select <UNDO> before placing any other element. Then reselect <NAVAID BOX>. Your old text string will still be there, so you can easily change point size, attribute or location.

The button is available until the 6 Navaid boxes have been drawn.

ILS Box

ILS approaches are generally identified by unshadowed, rounded boxes displaying the approach heading, the frequency and the four-letter-code of the ILS.

Select <ILS BOX> to place such a box on the map. In a dialogue window, you may type the text to display, define the desired point size and whether you want the text bold or regular. 12 point bold is recommended and preset by default.

If you respect two simple rules, Final Approach will automatically include the appropriate morse ID in the box. Just put the station ID last and write it in four uppercase letters. So "109.1 IPIE" will trigger the morse code generator, while "109.1 I-PIE" (5 letter ID) will not.

Click <OK> and place the box by clicking at the appropriate location on the drawing canvas. Your mouseclick will correspond to the upper left, rounded corner of the box.

The box size will automatically adapt to the displayed text heigth and width. If it doesn't fit or you misplaced it, select <UNDO> before placing any other element. Then reselect <ILS BOX>. Your old text string will still be there, so you can easily change point size, attribute or location.

The button is available any time. If you decide to change the box text, settings or location, simply reselect <ILS BOX>. The ILS Box will be erased and you can then define and place a new box.

Basic

This is where you enter the data to be displayed below the approach profile.

Clicking the **<Give model>** button will feed default values to all text fields. Those default values are the program s best guess about the data you're likely to use for your Approach Plate. Take them as a model on which to base your own data input.

TDZE Elev.: Touch Down Zone Elevation in feet above Mean Sea Level (MSL).

Straight-In: Minimum Descent Altitude for a straight-in VOR or NDB approach, Decision Height in case of an ILS approach. If no straight-in landing is available, leave the field blank.

90, 120, 140, 165 kts: Minimum Descent Altitudes in feet MSL for a Circling Approach. Aircraft are categorized following their maximum circling speeds. If no circling approach is available, leave the field blank.

Timing Distance: Distance in nautical miles from the Final Approach Fix (FAF) to the Missed Approach Point (MAP).

Final Approach uses this number to calculate and display the exact timing in minutes and seconds from the FAF to the MAP. If you leave this field blank, no timing information will be displayed.

Timing Label: Text string that will be displayed in front of the timing distance indication (ex. "OSTOR to MAP" or "MAP at VOR")

Missed Approach: Detailed missed approach instructions to be displayed below the approach profile.

The text length is limited to 256 characters (spaces included). Exceeding characters will be cut off.

The button is available any time. If you decide to change a value later, simply reselect <BASIC>.

Glideslope

The glideslope symbol is used for ILS approaches only. It displays as a wide open arrow that starts at the point where the aircraft is supposed to intercept the glidepath and ends at the touch down zone of the runway.

Click to place the upper end of the glideslope, i.e. the point where the descent to the runway is supposed to begin.

If you will use the "Snap to Grid" function to draw the glidepath, it is recommended to already activate it as you place the glideslope. That way it will be much easier to let your descending glidepath segment coincide exactly with the glideslope symbol.

The button is available any time. If you want to redo the glideslope, simply reselect <GLIDESLOPE>. The old symbol will be erased and you may place a new one.

Glidepath

Before you begin drawing the different glidepath segments, it would be a good idea to activate the "Snap to Grid" function. This will facilitate the drawing of perfectly straight segments.

As you click the <GLIDEPATH> button, a big button labelled <GLIDEPATH FINISHED> will appear on top of the drawing canvas. You will use it when you have finished defining the coordinates for your glidepath segments.

The glidepath should be drawn in the same direction it will be flown later. The first mouseclick will set the starting point for the first segment, marked for your reference by a small, red circle, that will be erased automatically once you finish designing the glidepath. Every subsequent mouseclick will place a visible segment, the next always connecting to the previous one. A maximum of ten consecutive mouseclicks (i.e. 9 segments) is allowed.

While in the drawing process, the <UNDO> button will take you one step back by erasing the last segments drawn one by one.

Click the <GLIDEPATH FINISHED> button when you are done. Final Approach will then remove the reference circle mentioned above and complete the glidepath by adding a short segment with an arrow pointing upward in the direction of an eventual overshoot.

The button is available any time. If a glidepath is already present, reselecting <GLIDEPATH> will open a dialogue window, asking if you want to redo this glidepath. If you confirm, the glidepath will be erased and you will be placed into drawing mode.

Intersection

3 intersection symbols (dashed, vertical lines) are available.

Click to define the top end of such a symbol. Remember not to draw the intersection symbols too high up, as you will need some space above for the text label you will add later.

The button is available until all 3 intersections have been placed.

Marker

Final Approach offers 2 identical markers. One could be used to symbolize the Outer Marker, the other for the Middle Marker.

Click on the drawing canvas to define the top center of a marker symbol. Don't draw the symbols too high up, as you will probably want to put an appropriate label above later.

The button is available until both markers have been placed.

VOR

Click on the drawing canvas to define the top center of the symbol.

The button is available any time. If you want to redo the VOR symbol, simply reselect <VOR>. The old symbol will be erased and you may place a new one.

NDB

Click on the drawing canvas to define the top center of the symbol.

The button is available any time. If you want to redo the NDB symbol, simply reselect <NDB>. The old symbol will be erased and you may place a new one.

Final Approach Fix (FAF)

This button lets you add a Final Approach Fix symbol (a small "x") to your glidepath. It indicates the exact location where the final approach begins.

Click on the drawing canvas to place the symbol.

The button is available any time. If you want to redo the FAF symbol, simply reselect <FAF>. The old symbol will be erased and you may place a new one.

Fix Label

First, enter the text to be displayed above a marker or intersection symbol.

Three buttons in this dialogue window allow to select a standard model for a Middle Marker label, an Outer Marker label or an intersection label. Click one of these buttons and Final Approach will fill enter text strings that should give you an idea of what is expected in the different fields. Then you may overwrite these values with your own.

The first line (Textline1) will always be displayed in a larger, bold and italic font, the second and third lines will show as normal text in a rather small font size.

Use the first text line for the name of the intersection (ex: VEALS) or for the indication of a DME distance in case no name is available (ex: D7.5).

If you entered a name in the first field, then use the second field to enter the appropriate DME distance. Use the third field to enter the altitude (feet MSL) the aircraft should have reached at this fix. Enter the number only, Final Approach will add "GS" in front of it and the altitude above ground level (AGL) behind it, as the chart is displayed or printed.

You may fill in as many text fields as you like (1, 2 or all 3). If you leave any line blank, Final Approach will format the fix label accordingly. The lower line (or lines) will then move up, so that no blank line will ever be displayed.

Click <OK>. Your next mouseclick on the drawing canvas will indicate the location of the lower center of the fix label. To place a label above an intersection or marker symbol, click slightly above the top of that symbol. The "Snap to Grid" function should be turned off.

The button is available until all 6 fix labels have been placed.

Altitude

For you convenience, Final Approach lets you enter altitude labels via an own button, rather than as free text. After clicking the <ALTITUDE> button you will be asked for the altitude above MSL you wish to enter. Type the appropriate number and click <OK>.

Final Approach will automatically add the corresponding altitude AGL below the altitude MSL you entered. So if you place the altitude MSL slightly above one of the horizonal segments of your glidepath, the altitude AGL will be added below. Your mouseclick indicates the beginning of the baseline for the altitude MSL, which allows for a very precise placement. The "Snap to Grid" function should be turned off.

The button is available until all 4 altitude labels have been placed.

Free Text

Select <FREE TEXT> to place up to twelve formatted text strings on the profile. In a dialogue window, you may type the text to display, define the desired point size and whether you want the text bold or regular.

Three separate lines are available, which is particularly handy to place radial labels with station ID, frequency and radial number above one another. Note that only consecutive lines will be displayed, so if you should want text in lines 1 and 3 only, add a space to the second line.

Click <OK> and place the text by clicking at the appropriate location on the drawing canvas. The first text line will start to the immediate right of your mouseclick.

If the text doesn't fit or you misplaced it, select <UNDO> before placing any other element. Then reselect <FREE TEXT>. Your old text string will still be there, so you can easily change point size, attribute or location.

The button is available until all 12 text strings have been drawn.

New

If you are designing a plate and get the feeling to have seriously messed- up with your work, select the <NEW> button. It will open a dialogue box, asking whether you want to erase the whole IAP or the profile view only. As the profile view relies on data from the plan view, the plan view cannot be erased separately.

Load

In the file dialogue window, select the IAP to display from the file list. Following Windows conventions, the right window is used to switch to another directory. The drive-list box below lets you change to another drive.

If you highlight a file, its header information (city, state, airport, approach and runway) will be displayed in the small picture box below the file list. This feature should facilitate file selection.

Save

Use the <SAVE> button to save an IAP that has already been named. If you select <SAVE> to save an IAP not previously named, the <SAVE AS> dialogue window will open.

When designing, remember to save repeatedly. If you mess-up, you can always retrieve the previous version of your work without losing too much of your design.

Save As

This button opens a dialogue window in which you can name or rename your work before saving it to disk. Only DOS-valid characters are allowed. Final Approach prevents you from giving an extension as it will add *.IAP by default.

Print

One of the most important features of Final Approach is its ability to print the Approach Plates you designed or loaded. You may define a left border between 1 and 3 inches for your printout.

The printing routines will always print the IAP (plan and profile view) combined into a single plate.

Clipboard

This button allows you to copy the drawing in the current window to the Windows Clipboard, so that you can paste it into Paintbrush (or a similar program), edit it there and save it in the format you prefer.

Selecting <CLIPBOARD> from the plan view window will transfer the plan view of the approach, whereas selecting this button from the profile view window will transfer the profile view to the Clipboard.

To conserve space, only the actual chart is transferred to the Clipboard, whereas all outside text (heading section and, in case of the profile view, Missed Approach instructions and timing table) are cut off.

Undo

The <UNDO> button will erase the last element drawn. This is a one-step undo, so be sure to select <UNDO> before placing the next element on the drawing canvas.

Only when designing a glidepath will <UNDO> be multi-level and erase the last elements drawn in backward order.

If your last action was the deletion of an element through the ERASE

Erase

Elements that appear only once on each IAP (runway, approach line, holding, ILS box etc) can be removed simply by reselecting the same button used to create them in the first place.

With the <ERASE> button, you can remove all of the other, multiple elements. The Erase window lists all multiple elements present on your IAP. Select one of these by its number, then press the <ERASE> button to remove it from the plate.

If you are unsure about the running number of the element you want to erase, select <CANCEL> to go back to the chart and activate the Show numbers
running number.

Checkbox Display Grid

With this checkbox selected, a grid will be imposed over your canvas to facilitate the exact placement of objects.

In plan view two dashed lines will be visible in the upper left corner of the IAP. They show the space available to design a chart in the 320*200 format required for use as an AAF-PCX.

If you want to draw a chart for AAF, fit all elements into this reduced surface, then copy the IAP to the Clipboard. Start Paintbrush, select "Options", "Image Attributes" and set these to a width of 320 and a height of 200 pixels. Now paste the image from the Clipboard, edit it as you like and save it as a *.PCX file.

In profile view a guideline for a standard 3 degree instrument approach will rise diagonally from the runway touch down zone. It should ease the task of drawing a consistent glideslope.

Checkbox Snap to Grid

With this checkbox selected, every mouseclick you enter within the drawing canvas will snap to the nearest intersection of grid lines, no matter if the grid is currently visible or hidden. You may activate and deactivate the "SNAP TO GRID" function as you like, placing some elements with, others without having the function activated.

Checkbox Show Numbers

For each line you draw, Final Approach will ask for a connecting point (VOR or intersection). If the checkbox "SHOW NUMBERS" is selected, all multiple elements, including VORs and intersections, will display their running number, to take the guesswork out of the line placement.

"SHOW NUMBERS" also comes handy when you must select an element to erase

Sceneries designed with **Aircraft and Scenery Designer** , for use with Microsoft Flight Simulator (R).

Adventures created with **Aircraft and Adventure Factory** , for Microsoft Flight Simulator (R).

Aircraft and Adventure Factory , for Microsoft Flight Simulator (R).

CompuServe is the world's largest electronic information and communication service.

The FSFORUM is a special interest section, dedicated to flight simulation on the microcomputer. You can join it by typing GO FSFORUM from any CompuServe prompt.