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# ***The Profile Analyzer™***

*Market Analysis for Trading*



## Quick Reference Guide

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## Introduction

The basis for market analysis, either technical or fundamental, lies in identifying relevant historic market behavior and projecting the known results of that behavior to the present.

The *technician* makes use of violated trendlines, wave counts, and measured moves (to name just a few) since these factors have been found to correlate historically with specific market behavior. The *fundamental analyst*, on the other hand, seeks to make predictions based, for example, on whether the market discounts news events or supply-and-demand situations in a similar manner under similar circumstances.

Success employing either type of analysis requires sifting through all the variables—filtering out some, adding others—figuring out a time frame, employing sound risk management, and constantly factoring new observations into the trade equation. The Profile Analyzer™ is the tool that will help you to perform these tasks.

The Profile Analyzer™ (we'll be referring to it informally throughout this Guide as "TPA") allows you to observe historic market performance for almost any set of circumstances, fundamental or technical, in whatever way you define. The Market Profile® format was chosen as the reference for market behavior in TPA because of the wealth of information embedded in profiles. However, even if you don't use Market Profile® analysis to support your trading decisions, you still have access to the full power of TPA. TPA's unique user-friendly interface and its powerful database editing and searching functions give you the capability to carry out sophisticated custom analyses. With some practice, you will probably find that the TPA fits in easily with *your* own personal style of trading and analysis.

Most people have little time for manuals. With that in mind, we bring you this "non-manual," the TPA Quick Reference Guide. The first time you launch TPA, use the Guide to step you through all the TPA windows, menus, controls, and buttons. This will show you the structure and capabilities of TPA. The Guide also explains how to get the program up and running, how to use TPA logic to formulate questions for TPA searches, how to plot profiles and charts with TPA, the mechanics and uses of the TPA DATABASE EDITOR, the TPA TRADING DIARY and the TPA CUSTOM QUESTION EDITOR, and how to use TPA's extensive HELP system. It also introduces you to TPABasic™, TPA's built-in programming language.

Once you are familiar with the structure of TPA, you can read individual topics in the TPA HELP system as needed for complete explanations and examples of TPA's capabilities, as well as numerous examples of trades and uses of individual TPA questions. You will find you have become a proficient user of TPA in no time!

# Chapter 1. Getting Started

## *What you'll need to get started*

- A standard Windows PC
- At least 32MB of memory
- VGA or, preferably, a higher resolution color monitor
- Microsoft Windows 3.1, Windows for Workgroups 3.11, Windows 95/98, Windows NT, Windows 2000 or Windows XP
- Hard drive with 10 Mb free space
- 3½ inch high density disk drive (not required for electronic delivery)
- Mouse or other pointing device
  
- **The Profile Analyzer**<sup>™</sup> program diskettes
- Parallel port security key<sup>†</sup> (provided by PTT, Inc.)

## *Installing The Profile Analyzer*<sup>™</sup>

- 1<sup>†</sup>. Make sure your computer and monitor are turned on and the *security key is connected to a parallel port on your computer*. If a printer or other device is currently connected to the port, remove the cable from the computer, attach the security key to the computer, and then attach the cable to the security key. The security key will have no effect on any device connected through it to your computer.
2. Insert Disk 1 in drive A (or drive B). Next...  
*For Windows 3.1 and Windows NT 3.51:* In Program Manager, select **File|Run...**, and type A:SETUP (or B:SETUP) in the **Command line** box. Then press <ENTER> or click on **OK**.  
*For Windows 9x, NT 4.0, 2000, XP:* Click **Start, Run...**, and type A:SETUP (or B:SETUP). Then press <ENTER> or click on **OK**.
3. Follow the instructions on the setup screens.
4. Launch the program by double clicking on the TPA icon within your new The Profile Analyzer program group.
5. When TPA appears, click on **Help|Contents** to begin exploring the TPA HELP system, if you'd like to jump right in, or else leaf through the following chapters first to step you through all of TPA's functions one by one.
6. *If we shipped you any TPA Data Update disks, they were accompanied by a set of instructions titled **Updating your data with a TPA Data Update disk**. Follow these instructions to bring the commodity database(s) installed on your hard disk up to date.*

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<sup>†</sup> The free trial version of TPA does not require, and therefore does not include, a security key. If you have this version, ignore Step 1, which explains how to attach a key, and proceed directly to Step 2.

## Chapter 2. Making money with TPA

Before the development of The Profile Analyzer™, there were features of daily trading activity which, while desirable to know, were impossible to discern. Consequently, using TPA will change the way you approach trading and research. Since TPA will not generate decisions or ideas for you (remember, TPA is a tool, not a “black box”), the power of the program and your success using it will depend upon the boundaries of your curiosity and the limits of your imagination (Rod Serling would be proud!).

Let's take a hypothetical situation where the market trended higher throughout the day yesterday (a Trend Day Up).

*Before the start of the next trading session, some thoughts come to mind...*

1. Are these types of days good follow-through days?
2. How often does the market open at a new high following this type of day? (should I buy the close?)
3. If we open at a new high, will the gap most probably be filled today? (should I sell a new high?)
4. If we don't open gap higher, what is the probability of a new high? (should I buy the first pullback?)
5. If we make a new high, what is the likelihood of continued follow-through? (if I'm long, when should I take my profits?)
6. If we make a new high, what has been the probability of closing at a new high or low, given this situation in the past?
7. Generally, after a trend day, where is the market most likely to close in relation to yesterday's support and resistance levels, opening range, high TPO level, etc.?
8. Are the stochastics and RSI's consistent with the observed profile development?
9. Is there a correlation between profile development and volume or open interest?
10. What are the mean and standard deviation of the daily ranges following a trend day up? (how long should I plan on staying with a trade that's working in my direction?)

*As the day progresses, you might want to know...*

1. After what period are my initial assumptions incorrect? (where do I cut my losses or lower my expectations? Where in the day should I be looking for other types of opportunities?)
2. Should I refine my analysis to filter out days where special news events, cycles, or high or low volume might have skewed my initial results?
3. Are there trading opportunities that now exist which have nothing to do with yesterday's trend day, such as multiple tops or bottoms, day or period RSI's or stochastics or extensions from one period to the next?
4. Where is the market now trading relative to today's initial balance area, value area, first or second support or resistance, or opening range?
5. How often is a market's range contained within a certain number of ticks or a certain range of periods?
6. Can I recognize a new type of day, e.g. neutral, where certain criteria will apply?
7. What can I find out about follow-through from period to period?

*At the close of the day's trading...*

1. Are there any comments I should note down for the day so that I can use them as search criteria at a later date?
2. Did I perform any complicated searches which I may want to repeat at a later date? (These can be saved as Custom Questions.)
3. If there's an important economic release coming up, is there a pattern of trade into that release that I can capitalize on?
4. Knowing what I know about today, what about tomorrow?

This is by no means an exhaustive list of questions or idea prompts! It only hints at the depth and breadth of analysis you can perform using TPA. All you need to do is learn to frame the questions, and TPA will adapt to your style of trading in an infinite number of ways and in an infinite number of situations.

This Guide, and the TPA HELP system, will get you started. But you will only appreciate the full potential of TPA by experimenting yourself with all the TPA Functions.

## Chapter 3. The TPA FUNCTIONS

### 1. Market analysis—The TPA SEARCH ENGINE

The TPA SEARCH ENGINE allows you to perform market analysis based on any criteria, or *questions*, you specify. It works like this—you tell TPA the criteria you are interested in, and TPA will identify all the days which match those criteria in the time period you specify. For example, you can search market data for all days characterized by specific Market Profile® parameters such as trend day up, P-type up, etc. You can also analyze for other factors influencing the market, such as economic news releases, day of the week, various price relationships, etc. And you can combine these questions in a single search to permit a multidimensional analysis of historical market data. The matching days will be listed in the Search Results window, along with some important statistics.

*See Chapter 5 to learn about the TPA SEARCH ENGINE.*

### 2. Charting market data with TPA

TPA can display market data for any day or group of days you specify, allowing you to search visually for trends in the market. TPA can generate the following standard types of charts:

- Market Profiles, in either compressed (standard) or expanded (barchart) form
- Stochastics charts
- High-Low-Close (HLC) charts, including candlestick charts
- Relative Strength Index (RSI) charts

In addition, you can generate custom charts using the TPABasic™ programming language

*See Chapter 6 to learn about charting market data with TPA.*

*See Appendix to learn about the TPABasic™ programming language.*

### 3. Database management—The TPA DATABASE EDITOR

The TPA DATABASE EDITOR allows you to tag days with descriptive labels, in the form of text, to be used later as search criteria. For example, you can tag any day you choose as “large curve unwind,” or “Dollar jumps against the Yen” and you now have new criteria for future TPA searches. You can also use the TPA DATABASE EDITOR to add up-to-the-minute data not yet received from PTT, Inc. in its regular updates for subscribers. The TPA DATABASE EDITOR also contains the TPA SPREADSHEET, which you can use to store numerical data for each day in the database; these data may be searched using the spreadsheet questions listed in the Appendix.

*See Chapter 7 to learn about the TPA DATABASE EDITOR.*

### 4. Personal recordkeeping—The TPA TRADING DIARY

The TPA TRADING DIARY lets you save information about your own trades. You can use this feature to keep track of your trades, profits, losses, etc.

*See Chapter 8 to learn about the TPA TRADING DIARY.*

### 5. On-line help—The TPA HELP system

The TPA HELP system is the best way to learn your way around all the TPA windows and functions. Every window, icon, and control in TPA has a topic in the TPA HELP system which explains its function and use.

The contents of the TPA HELP system can be displayed using the **Help|Contents** menu item (see Chapter 4).

## Chapter 4. Getting around TPA

In common with all Windows programs, TPA has a set of menus and icons that allow the user to move rapidly from window to window and function to function. In this chapter we present a description of all the main TPA MENU items and TPA TOOLBAR icons. Click through the items yourself as you read through this and the remaining chapters to become familiar with the structure and capabilities of TPA. You should also peek into TPA HELP as you go along.

### ***The TPA HELP system***

TPA HELP should be your primary resource for learning to use TPA. Every menu item, toolbar button and window in TPA is documented in TPA HELP. There is a **Help** button in every TPA dialog window. Click on a window's **Help** button to display a help topic containing a facsimile of that window. Then click on any control in the facsimile to show a pop-up help item describing the features and functions of that control.

### ***The TPA MENU***

The TPA MENU contains the following options:

#### File

In **F**ile, you can **O**pen, **C**lose, **S**ave, and **M**erge different databases, and **P**rint the contents of various windows (e.g., profiles, charts, search results). The **U**tilities menu item provides access to the password window for extending your subscription and to the commodity database updating function, as well as a home for various add-on products from PTT, Inc.

#### Edit

Use the **C**opy option to place a copy of the information in the current window (e.g., a profile, chart or search result) in the Windows clipboard. From there, it can be pasted into another application.

You can also customize TPA through the functions in this menu. Through **E**dit, you can access the TPA DATABASE EDITOR, save, name, modify and annotate Custom Questions, access your personal TPA TRADING DIARY, and also choose color schemes and TPA Preferences such as time zone, inclusion of novice prompting, etc. (see *Chapter 10*).

#### Analyze

This menu item activates the TPA SEARCH ENGINE. It is equivalent to clicking on the lightbulb icon on the TPA TOOLBAR.

#### Window

The **W**indow menu is a standard element of Windows multiple document interface (MDI) applications. Use it to manage the appearance of the component windows of TPA. These are the Search Results window, Profile windows, and Chart (RSI, Stochastics, HLC) windows.

#### Profile

The **P**rofile menu only appears when the active window is a Profile window. Use it to change the font, size, and format of the profiles displayed in that window, as well as to change the grouping of the profiles, and to display only sampled intervals from the price scale. Several of the functions in this menu are accessible directly *via* buttons on the TPA TOOLBAR.

## Chart

The **Chart** menu only appears when the active window is a Chart window. Use it to change the size, axes, and grids of the charts displayed in that window.

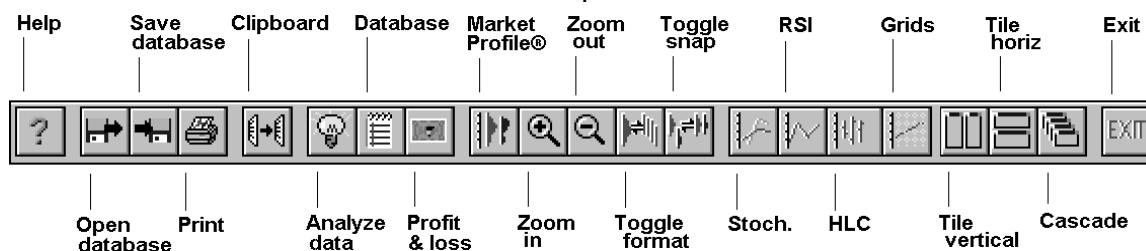
Most of the functions in this menu are accessible directly *via* buttons either on the TPA TOOLBAR or in the bottom right corner of the chart window itself.

## Help

Use the **Help** menu to access the TPA HELP system. Choose **Contents** to display the contents page of TPA HELP. From here click on any underlined text to jump to additional information on that item. Choose **Search for Help on...** to do a keyword search on any topic in TPA. If you are not familiar with Windows™ Help, select **How to Use Help** for an introduction to the subject written by Microsoft. Finally, choose **About The Profile Analyzer** to display your TPA serial number and expiration date and the list of commodities to which you have subscribed, as well as important information about your computer's memory.

## The TPA TOOLBAR

The TPA TOOLBAR contains a set of small picture buttons, each providing a shortcut to a TPA MENU function. Hold the cursor over each button in turn to display its title in a yellow pop-up hint window. The function corresponding to each button is given below, along with the equivalent TPA MENU command (in parentheses). The buttons are described in the left-to-right order and groupings in which they appear on the TPA TOOLBAR.



Button	Equivalent menu command	Description
Help(!)	( <b>H</b> elp  <b>C</b> ontents)	displays the Contents page of the TPA HELP system
Open database	( <b>F</b> ile  <b>O</b> pen commodity database)	opens a new database. You may choose from any TPA database purchased from PTT, Inc.
Save database	( <b>F</b> ile  <b>S</b> ave commodity database)	saves the current commodity database if it has been changed
Print	( <b>F</b> ile  <b>P</b> rint)	prints the contents of the currently active window (which could be a Search Result, a Profile, or a Chart)
Clipboard	( <b>E</b> dit  <b>C</b> opy)	copies the contents of the currently active window to the clipboard
Analyze data	( <b>A</b> nalyze)	activates the TPA SEARCH ENGINE
Database	( <b>E</b> dit  <b>D</b> atabase...)	activates the TPA DATABASE EDITOR

Profit & Loss	( <u>E</u> dit  <u>T</u> rading diary...)	activates the TPA TRADING DIARY
Market Profile®	( <u>W</u> indow  <u>N</u> ew <u>P</u> rofile...)	makes a new Profile window
Zoom in	( <u>P</u> rofile  <u>B</u> igger or <u>C</u> hart  <u>B</u> igger)	zooms in on the display
Zoom out	( <u>P</u> rofile  <u>S</u> mall <u>e</u> r or <u>C</u> hart  <u>S</u> mall <u>e</u> r)	zooms out on the display
Toggle format	( <u>P</u> rofile  <u>T</u> oggle format)	changes profiles from compressed to barchart format, and <i>vice versa</i>
Toggle snap	( <u>P</u> rofile  <u>T</u> oggle snap-to-scale)	makes all profiles line up at the top of the window, and <i>vice versa</i> .
Stochastics chart	( <u>W</u> indow  <u>N</u> ew <u>S</u> tochastic...)	makes a new Stochastic Chart window
RSI chart	( <u>W</u> indow  <u>N</u> ew <u>R</u> SI...)	makes a new Relative Strength Index (RSI) Chart window
HLC chart	( <u>W</u> indow  <u>N</u> ew <u>H</u> igh low close...)	makes a new high-low-close (HLC) or candlestick Chart window
Grids	( <u>C</u> hart  <u>T</u> oggle grids...)	turns grid markings on and off
Tile vertical	( <u>W</u> indow  <u>T</u> ile vertical)	arranges all windows so that they fill the main window (taller rather than wider)
Tile horizontal	( <u>W</u> indow  <u>T</u> ile hori <u>z</u> ontal)	arranges all windows so that they fill the main window (wider rather than taller)
Cascade	( <u>W</u> indow  <u>C</u> ascade)	arranges all windows so that the title bar (caption) of each is visible
EXIT(!)	( <u>F</u> ile  <u>E</u> xit)	ends TPA session

### ***The TPA STATUS Bar***

The TPA STATUS bar is a beveled section at the bottom of the TPA main window, which displays general information about the current status of TPA. In its four side-by-side panels it displays: the title of the commodity in the current database (with "(O)" appended if the prices have been offset to remove contract rollover gaps—see the TPA HELP system for details); the name of the file in which the current database is stored; the free memory (RAM) and system resources in Windows; and the current time and Market Profile™ period letter for your chosen time zone and current commodity database.

In addition, the TPA STATUS bar shows help on the function of each TPA MENU item, as you drag the mouse through the menu system. When you release the mouse button, the regular status display returns.

## Chapter 5. Market analysis with TPA—The TPA SEARCH ENGINE

### What is it?

The most important analysis tool in TPA is the TPA SEARCH ENGINE. The TPA SEARCH ENGINE analyzes historical market data based on any criteria, or *questions*, you specify. TPA questions take the form “**Show me the days when <something> happened.**” The <something> can be any of a range of supplied fill-in-the-blanks questions, such as <Day of week is *Monday*>, or <Type of day is *P-type up*>. The result lists all those days, gives detailed information about each of the days in the list, and also gives the percentage of all days searched that match the search criteria. But the real power of the TPA SEARCH ENGINE lies in its ability to combine questions specified by the user, permitting a finely tuned multidimensional analysis of market data.

The TPA SEARCH ENGINE consists of two windows: the Analysis window (where you ask the questions) and the Search Results window (where you view the results).

### The TPA Analysis window

The TPA Analysis window is where TPA questions are generated.

To start a search, click on Analyze on the TPA MENU or the Analyze (lightbulb) icon on the TPA TOOLBAR. The Analysis window, titled Starting Search #1, appears.

### Setting the dates for your search

At the top of the window you can specify the first and last days bracketing the time period you wish to search (the default is all the days in your database).

## Understanding TPA Logic

In the middle of the window are six blank (...) boxes, arranged in three rows of two boxes each. Each box can contain a question. Each row constitutes a clause. The clauses are evaluated in top-to-bottom order. For example, “row1 and row2 or row3” is interpreted as “(row1 and row2) or row3.”

It is important to understand the logical grouping of TPA questions into TPA clauses. These groupings define the order in which operations are carried out. Here is an example:

Suppose you wanted to ask TPA to find all the days in your database, except Mondays, which were P-type up. The best way to formulate this question is probably

(<Type of day is P-type up> *and not* <Day of week is Monday>)

which is equivalent to

(**not** <Day of week is Monday> *and* <Type of day is P-type up>)

A third way, which is clumsier but also works, is

(<Day of week is Tuesday> *or* <Day of week is Wednesday>)

**or** (<Day of week is Thursday> *or* <Day of week is Friday>)

**and** (<Type of day is P-type up>)

Note that you cannot formulate the question by

(<Type of day is P-type up> *and* <Day of week is Tuesday>)

**or** (<Day of week is Wednesday> *or* <Day of week is Thursday>)

**or** (<Day of week is Friday>)

This would give you all P-type up Tuesdays as well as all Wednesdays, all Thursdays, and all Fridays!

With a little practice you will become adept at using TPA's simple logic.

## Formulating TPA questions—the Question Dialogs

Click on any blank (...) question box in the Analysis window to display a drop-down list of available questions. This list is also given in the Appendix of this Guide. The questions are divided into 7 categories: PROFILE-RELATED (Type of day, Value area, *etc.*), EARLY TRADING (Opening range, Initial balance), PRICES (Opening price, High price, *etc.*), VOLUME AND OPEN INTEREST (Tick volume, Tick volume relationships, *etc.*), PERIOD RANGES (Period extensions, Period range multiples, *etc.*), TECHNICAL ANALYSIS (rotation factors, period stochastics, *etc.*), and MISCELLANEOUS (including economic statistics, day of the week, and textual notes added by the user). In addition, you may ask your own custom questions, which you construct using the supplied questions as basic building blocks.

To formulate a TPA question, click on one of the questions in the drop-down list to display a Question Dialog. The Question Dialog is where you fill in the appropriate blanks for the selected question. Every Question Dialog also has 3 buttons, marked **yesterday**, **today**, and **tomorrow**, which you select as needed. **Today** gives all the days actually matching the search criterion, and is the default choice. Select **yesterday** and TPA will identify all days when the answer to the question was true *yesterday (the previous day)*, *i.e.*, it identifies the day *after* the day when the answer to the question was true. Select **tomorrow** to find the days *before* the days matching the search criterion. Note that yesterday, today, and tomorrow are used in the sense of sequential days *in the database*, so, for example, if today is Monday then yesterday is the previous Friday (or Thursday, if the market was closed on Friday!).

Every Question Dialog also has buttons marked **OK**, **Cancel**, and **Help**. Click on **OK** and you are back in the Analysis window with your filled-in question displayed in the appropriate question box. At this point you may also select the **not** button for the box in order to ask the

converse question (**not** <Type of day is *P-type up*> **today**). String together a series of questions and clauses using **and** or **or** to construct a more detailed search.

## Saving and managing Custom Questions

You may find that there are lengthy questions you use frequently. Save as many of these as you like as Custom Questions using the **Custom** button of either the Analysis window (before you ask it) or the Search Results window (after you have asked it). See Chapter 9 for more on Custom Questions.

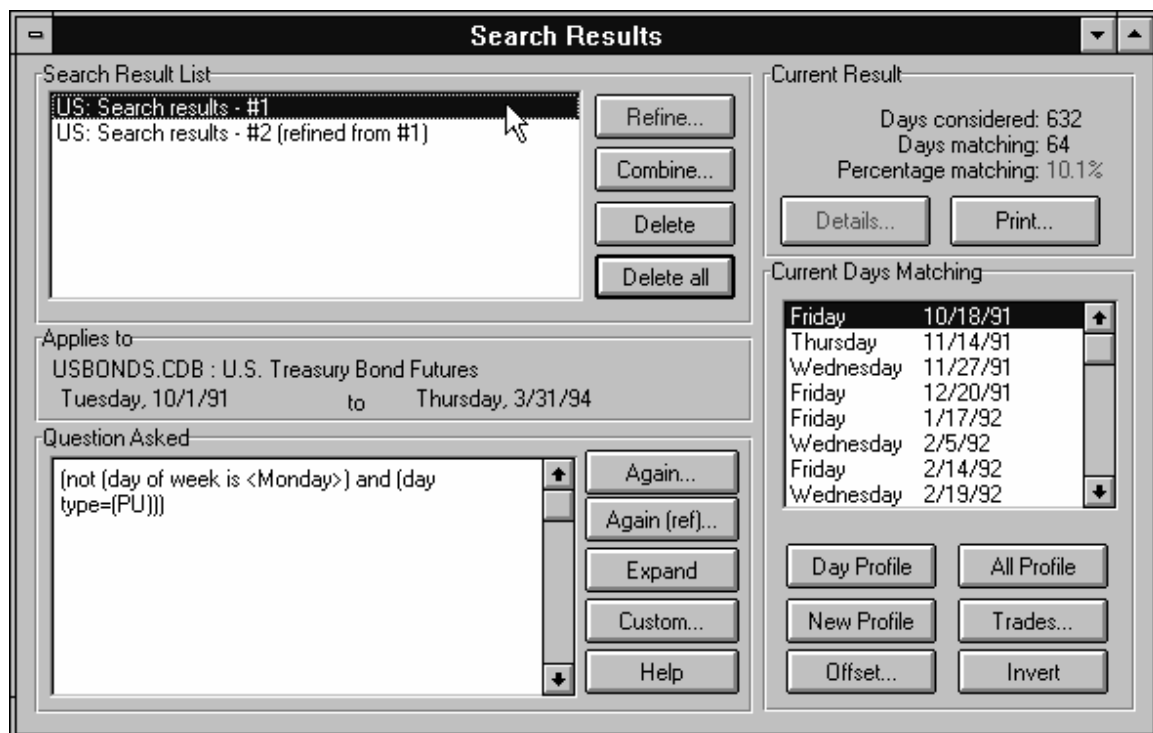
You may ask any Custom Question you have already saved by selecting Custom Questions, the first item in the drop-down list of each question box in the TPA Analysis window. This will display a list of all the Custom Questions you have saved. The Custom Question you select from this list may then be combined with additional questions (which could themselves be Custom Questions!) using TPA logic to construct increasingly complex searches.

## Searching the data with TPA

Once you have formulated your question, click the **OK** button at the bottom of the Analysis window and let TPA go to work. When the search is finished, the results appear in the TPA Search Results window.

## The TPA Search Results window

The TPA Search Results window is where the results of your searches are displayed. While there may be many Chart and Profile windows, there will be only one Search Results window for each TPA session, listing the results of all your searches.



The TPA Search Results window is divided into 5 panels: the Search Result List, Applies to, Question Asked, Current Result, and Current Days Matching.

## The Search Result List

At the upper left corner is the Search Result List, identifying all searches performed during the current TPA session according to a 2-letter commodity code and a number (e.g., US: Search Results #1). Select a search result from this list using the mouse cursor. The contents of the other 4 panels in the window will change to correspond to the current (highlighted) search. The four buttons in this panel allow you to manipulate search results and refine your search criteria:

Use the **Refine** button to ask additional questions *just for the days in the current (highlighted) Search Result*. It activates the Analysis window, which will now display the heading Refining Search #1 (or #2, etc.). This is also incorporated into the title of the new search result after the refined search has been completed, e.g., US: Search results - #2 (refined from #1).

Use the **Combine** button to combine days from two search results, using combinations such as both, either, one but not the other, etc.

Use the **Delete** button to delete an individual search. You should periodically delete searches you don't need any more, to avoid filling up too much of your computer's memory. (See Chapter 10)

Use the **Delete all** button to delete all your searches at the same time.

## The Applies to panel

This panel, which lies immediately below the Search Result List, gives the file name and the title of the commodity in the current search and the range of dates considered.

## The Question Asked panel

This panel, at the lower left, displays the question as it was input in the Analysis window. If the question was from a Refined search, the Question Asked panel will initially display only the most recent refinement, *i.e.* the question input in the Analysis window titled Refined from Search #1 (or #2, etc.). The five buttons on this panel allow you to manipulate the current question, ask it again, or save it for later re-use:

Use the **Again** button to ask this question again, applied to the whole database. This displays the Analysis window with the question already filled in. It is useful for asking small variations on a previously-asked question without re-entering everything.

Use the **Again (ref)** button to ask this question again, but as a refinement of the current search result. Otherwise, it works just like the **Again** button.

Use the **Expand** button to display the complete chain of questions. When the display is expanded, this button becomes **Contract**.

Use the **Custom** button to save the displayed question as a Custom Question. Only the displayed question or the most recent refinement can be saved directly as a Custom Question. See Chapter 10 for details of how to save a complete refinement chain.

Use the **Help** button if you need it!

All of the symbols used in the Question Asked panel are defined in the Appendix of this Guide.

## The Current Result panel

This may be the most important part of the TPA Search Results window. It contains the statistics relating to the current search. Displayed in this panel are the number of days considered in this search, the number of days matching your search criteria, and the percentage

of days considered which matched. The percentage of days matching may be interpreted as the probability of your search criteria occurring in the days considered. The two buttons on this panel allow you to generate detailed reports of the current search result:

Use the **Details** button to display a table of details about each of the days in your Search Result individually, as well as the mean and standard deviations of the day's range, initial balance, open interest, daily volume, and daily tick volume for all the days combined.

Use the **Print** button to print a report of these details. Some columns in the table may be grayed out; those items are selected not to print. You can change these by selecting (**E**dit|**P**references menu, **R**eports tab) and checking the boxes as you wish.

### The Current Days Matching panel

Below the Current Result panel is the Current Days Matching panel, which lists the dates of all the matching days in the current search in a scrolling list. The six buttons on this panel allow you to make Market Profile® charts, manipulate the list of days or cross-check your trading history on those days:

Use the **Day Profile** button to make a new Profile window for a given day. You can also do this by double-clicking on the day itself in the list.

Use the **All Profile** button to make a Profile window containing profiles of all the days in the list. If the *shape* of the profile, rather than the *relative price scale* is what's important to you, click on the **Toggle snap** icon on the TPA TOOLBAR to display all the profiles side by side. Additionally, you can *zoom* in or out using the zoom (magnifying glass) icons on the TPA TOOLBAR.

Use the **New Profile** button to makes a Profile window containing profiles of days *surrounding* the highlighted day in the list. For example, if you specify 5 days surrounding a particular day, TPA will display profiles for the 2 days prior, the day itself, and the 2 days following.

Use the **Trades** button to report *your personal trading activity* on the days in the list.

Use the **Offset** button to make a new search result, whose days are offset from those of the current search by a specified number of days

Use the **Invert** button to make a new search result containing all days in the current database that are the complement of the current search result, *i.e.* all the days *not* fitting your search criteria.

The **Combine**, **Offset**, and **Invert** buttons are discussed in more detail in Chapter 10.

## Chapter 6. Charting market data with TPA

Using TPA, you can make various types of charts including Market Profile® and other technical indicators. You can also easily make comparisons among these using the *right mouse button menus*.

### **Market Profile® charts**

The primary charting feature of TPA is the Market Profile® chart. Market Profile® charts can be made in a variety of formats, using either the **Window|New Profile...** menu item or the Market Profile® icon on the TPA TOOLBAR. Each of these actions displays the profile construction (Make a New Market Profile® Chart) dialog, whose two drop-down lists hold choices for a) the range of days to make the profile chart for and b) the grouping of those days. The range of days is chosen using a combination of the starting and ending date scrollbars, and the first drop-down list. Choices range from a profile of the starting date alone, the week beginning on the starting date, *etc.*, all the way to a profile of all of the days from the starting date to the ending date, with the option to include only part of the first and last days. The grouping choices range from days split into two portions and single days, through weeks (all days in a week combined on the same profile graphic), months, quarters, years and, finally, a single cumulative profile for all of the days.

Market Profile® charts can also be made directly of days contained in search results in the Search Results window (See Chapter 5). You can change the grouping of Market Profile® charts using either the **Profile|Change grouping...** menu item (*e.g.*, to change a collection of single day profiles into a collection of weekly profiles) or the **Profile|Collapse all** menu item (which collapses every profile in the current window into a single cumulative or *combined* profile).

An individual profile from a Market Profile® chart may be copied to the Windows clipboard, using **Copy to clipboard** from the right mouse button menu (see Navigating... below). It is then available for pasting into other applications in text format. In addition, an individual profile can be printed using **Print** from the right mouse button menu, or split into sub-profiles using **Split...** from the right mouse button menu. Profile windows containing a set of profiles can also be printed using **File|Print** (See Chapter 10)

### Profiles and the right mouse button

Click the right mouse button to show the right mouse button menu. Each item on the right mouse button menu applies to the profile *panel* immediately under the mouse cursor.

Choose **Toggle format** to change the format of the profile in the panel between compressed and bar-chart formats.

Choose **TPO information, etc....** to see information about the Market Profile® graphic in the panel. The TPO and Other Information dialog that appears has three tabs. Choose **TPO Info** to see a report of buying and selling TPO counts, value area, *etc.*, **Question** to refresh your memory about what search question, if any, generated this day and **News & Notes** to see all economic releases and personal notes that are attached to that day (if the profile is for more than a day, *e.g.*, a combined week's profile, information about news and notes will not be available).

Choose **Split...** to split the profile in the panel into sub-profiles

The remaining items in the right mouse button menu are common to all type of charts (See Navigating... below.)

## Other charts

TPA also provides high low close (HLC) charts, as well as two commonly-used technical analysis methods: stochastics and Relative strength index (RSI) charts. There is an entry in the **Window** menu and a corresponding entry in the TPA TOOLBAR for making each of these types of charts; it displays a dialog specific to the type of chart. Each type of chart may be made for either daily or period-by-period data. HLC charts may optionally be displayed as either standard bars with open and close ticks, or as candlesticks. Finally, custom charts can be made using the TPABasic™ programming language (See Appendix).

The scale of an entire chart may be changed either using the Zoom in/out (magnifying glass) TOOLBAR buttons or the **Chart** menu items. If you want to zoom only in one direction (e.g., zoom horizontally to see the entire chart vertical range, but only a portion of the horizontal range), use the scaling buttons at the bottom right corner of the Chart window. The arrows on those buttons should be thought of as the way you want to move the axis limits. For example, **><** moves the limits of the horizontal (x-) axis inward, i.e., zooms in horizontally; on the other hand, **<>** zooms out horizontally. Hold down **Shift** or **Ctrl** while pressing the scaling buttons to move only the upper or lower axis limit, respectively.

RSI, Stochastics, HLC and custom charts may be copied to the Windows clipboard. They are then available for pasting into other applications either in bitmap (BMP) or Windows metafile (WMF) format.

Charts of the quantities reported using the **Details** button in the Search Results window (See Chapter 5) can also be made, using a charting or spreadsheet program such as Microsoft Excel. Copy the current search result to the clipboard (menu **Edit|Copy**), and paste it into Excel. If you have checked the box (**Edit|Preferences** menu, **Reports** tab, **separate result components with tabs**), the information will automatically be arranged into individual cells within the spreadsheet.

## Navigating among charts—The Right Mouse Button

In all these charts, TPA supports a “drill down” feature using the right mouse button. For example, while the mouse cursor is over a given day’s profile in a Profile window, click on the right mouse button to show a menu that allows you to make another type of chart *for that day and surrounding days*. Use this feature to explore the relationships between the profile and any other indicator you can chart in TPA. For example, you could take a look at what period stochastics were doing during the course of a particularly interesting profile. You may “drill down” from any type of chart to any other, and in any order you like.

## Chapter 7. Database management—The TPA DATABASE EDITOR

### *What is it?*

Everything in TPA operates in one way or another with a commodity database (CDB) file. These files are updated by PTT, Inc. on a subscription basis. In between data updates from us, however, you may want to keep your market data up to date yourself. You may also want to add your own economic news and personal notes to days already in the database. You do this using the TPA DATABASE EDITOR. Access it either using the **Edit|Database...** menu item or the Database (notebook) icon on the TPA TOOLBAR.

The TPA DATABASE EDITOR has 5 pages, each of which can be activated by clicking on the corresponding tab at the top of the EDITOR. Each page contains the commodity name and current contract, as well as a scroll bar to select the date, **Add** and **Delete** buttons for adding and deleting days and the usual **OK** (to quit saving changes), **Cancel** (to quit abandoning changes) and **Help** buttons. Regardless of which page is active, the scroll bar can be used to change your position in the database. Use the **Add** button to add a new, empty day to the database. You are prompted for the date to add (by default, the next weekday after the last day in the database), and the expiration month for the active contract. Delete an existing day using the **Delete** button. The day to be deleted is the one currently selected using the date scroll bar.

## ***Keeping market data up to date***

The first page (**Market Data**) is the most important one for keeping data up to date on your own. The **Day** panel contains all data relating to a given day as a whole, including the **Period** panel, which holds information relating to half-hour periods during the trading day. After adding a new day (or to modify an existing one), enter the open interest in the **Open Interest** edit, the volume in the **Volume** edit and the high and low prices in the opening range (usually taken in TPA to be the first minute of trading) in the **Opening range High** and **Low** edits.

Add the data for each half-hour period in the day using the **Period** panel, at the bottom of the EDITOR. The trading periods for the commodity are listed in the drop-down list by Market Profile® letter; as you choose each one, the time period to which it corresponds appears alongside. Choose each in turn, and fill in the opening, high, low and closing prices as well as the tick volume in the edits provided. The TPA DATABASE EDITOR is data-sensitive—it will not accept prices that are not in the correct format for the commodity in the database. Further, the data shown in the EDITOR are always the original exchange prices. The contract rollover adjustments are used only as a convenience for analysis and charting and are *never* applied to data in the TPA DATABASE EDITOR.

## ***Adding personal annotations to databases***

### Notes

Even if you wait for data updates from PTT, Inc., you will probably need to use the TPA DATABASE EDITOR for one important purpose—to add free-form notes to any day of your database. Any text you type into the **User Note** edit on the **Note** page of the EDITOR will be saved in the database with that day. Use this feature as a way of storing news or information you don't want to use the **News** features for, or perhaps your own notes or observations about that day's trading. The **Note** edit is reserved for editorial content and economic release information provided by PTT, Inc. You may search either or both of these notes later, using the Note contains <text> question from the TPA Analysis window.

### News

Use the **News** page to tag either new days you enter, or days already in the database, with economic news items. We have provided you with a built-in list of some of the more important economic releases in the USA from which to choose. There is also a list of 30 user-definable news items and 8 user-definable news results, whose titles you may choose using the **Edit|User-defined...** menu. You may search for these tags later using the Economic statistics question from the TPA Analysis window.

### Day types

Use the **Day types** page to view the Market Profile® graphic for the current day, and to choose the type of day. TPA will suggest a day type, but you don't have to accept the suggestion.

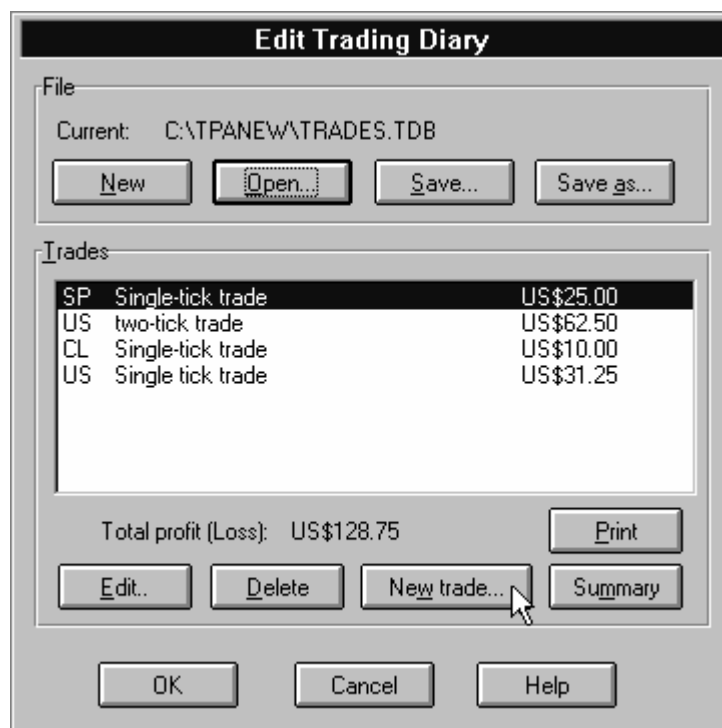
### Sheet

Use the **Sheet** page to enter numerical data into the TPA SPREADSHEET portion of the database. You can carry out searches on these data using the spreadsheet questions. For efficiency reasons, you should enter any formulae that you want to have in every day's spreadsheet into the spreadsheet template (See Customizing TPA in Chapter 10).

## Chapter 8. Personal recordkeeping—The TPA TRADING DIARY

### *What is it?*

The TPA TRADING DIARY is a place to keep track of your trading profit and loss. You access it either using the **E**dit|**T**rading diary... menu item or the Profit & Loss (dollar bill) icon on the TPA TOOLBAR.



The TPA TRADING DIARY is divided into two main panels: the File panel, which gives the title of the current trading diary database, and the Trades panel, which lists information about each trade you have entered by 2-letter commodity code, the title you gave to the trade and the profit or (loss). The total profit or (loss) is displayed below the list for all trades in the current trading diary database.

### *Entering trades*

Enter a new trade using the **New trade** button. This opens the trade (Describe a Trade) dialog. Here you enter a date and title for the trade, the commodity and contract traded, buying and selling prices and numbers of contracts, and whether you entered the trade by buying or selling. The profit or (loss) is automatically computed when all of the necessary fields have been filled in. There is also an edit where you can enter notes and comments on the trade for future reference. Choosing **OK** enters the trade into the database.

Edit an existing trade using the **Edit** button. This opens the trade dialog for the chosen trade, where you may make changes. Use the **Delete** button to remove an existing trade from the database. **Print** prints the information contained in the trades list.

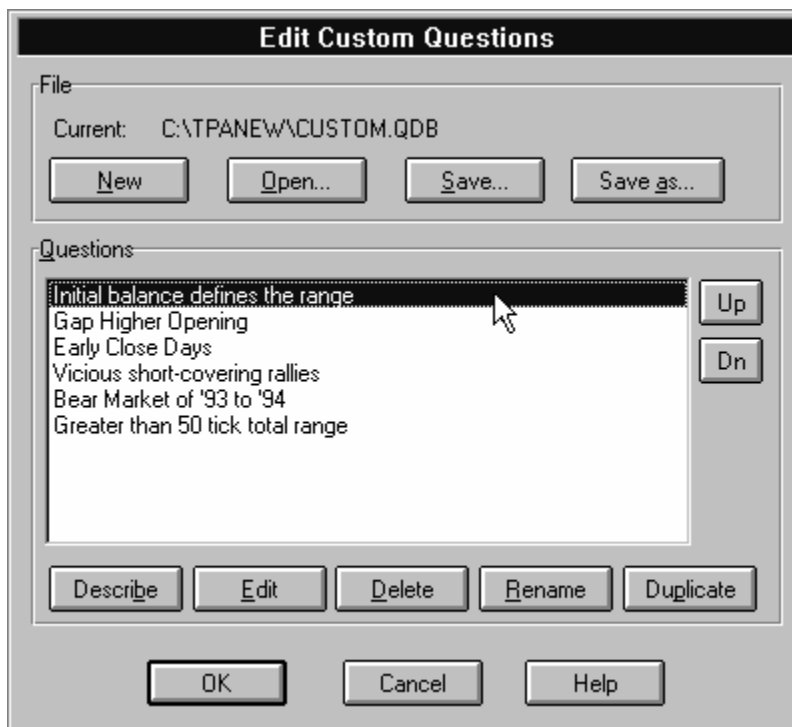
### ***Making summary trading reports***

Choose the **Summary** button to make a summary, broken down by commodity, of your profit or (loss) for the trading diary database. While the TPA TRADING DIARY itself lists every trade individually, the summary is a table where all trades for the same commodity are reported together. **Print** the summary if you want to keep a paper copy.

## Chapter 9. Working with questions—The TPA CUSTOM QUESTION EDITOR

### *What is it?*

The TPA CUSTOM QUESTION EDITOR is a place to keep track of the questions you have saved as custom questions. Use it both to store and to modify your custom questions. You access it using the **Edit|Custom questions...** menu item, or from the **Custom...** buttons of either the Search Results window or the Analysis window.



The TPA CUSTOM QUESTION EDITOR is divided into two main panels: the File panel, which gives the title of the current custom question database and buttons for managing which custom question database you work with, and the Questions panel, which contains the title of each question and buttons for working with an individual custom question.

### *Managing custom questions*

Choose **Describe** to show a window containing a description of the actual question (in the same format as the Question Asked panel in the Search Results window), as well as any notes you may wish to save with the custom question for your own reference later. Press **Delete** to delete the highlighted question from the custom question database. Change the title of the highlighted question (as displayed in the **Questions** list) by pressing **Rename**. Make a duplicate copy of the highlighted question (e.g., if you want to experiment but don't want to risk changing a favorite question) by pressing **Duplicate**. TPA will automatically name a duplicate of the question "value area" as "> value area" to avoid name conflicts. Use **Up** and **Dn** to move the highlighted question further up or down in the list.

### Modifying custom questions

Choose **Edit** to *modify* the contents or parameters of the highlighted custom question by means of the Modifying Custom Question... dialog. This dialog is similar in appearance to the

TPA Analysis window, except that it has a push-button for each sub-question instead of a drop-down list.

Modify the relationships among the sub-questions by changing the settings of the **and**, **or**, and **not** buttons and checkboxes. Modify the *parameters* of a sub-question by clicking on its push-button. This displays the usual question dialog for that question, exactly as though you had selected it in a drop-down question list in the Analysis window.

Make any changes you like, and press **OK** to accept them.

### Nested Custom Questions

A sub-question within a custom question may itself be a custom question, in which case the text on the push-button will be red for emphasis. If you click on such a push-button, a new Modifying Custom Question:... dialog will appear, for the new question. Custom questions may be nested up to 2 deep, *i.e.*, a custom question may contain a custom question which contains, in turn, a custom question. Consult TPA HELP for more details on this and other cautions about and advanced aspects of the CUSTOM QUESTION EDITOR.

## Chapter 10. Common procedures and helpful hints

### *What's covered here?*

This Chapter is a sort of grab-bag of different subjects that don't quite fit anywhere else, but are still important or convenient things to know about TPA. While the rest of the Guide describes various controls and functions, this chapter tries to explain the steps needed to carry out the kinds of procedures you will want to do with TPA.

### **Common procedures**

Many of the things you can do with TPA have been described earlier (*e.g.*, how to carry out a search of market data, how to refine a search, *etc.*). You'll probably do the following procedures often, also.

#### Managing databases

*To change to another database:* use the **File|Open** menu (this closes the original database, since TPA only works with one commodity database at a time).

You may combine and excerpt databases using the **File|Merge commodity database with...** menu. Use this facility, *e.g.*, to take a six-month span of your current database and store it alone for quicker searches of just that portion; to combine new data shipped to you by PTT, Inc. with your existing databases; to transfer economic news and personal notes from one database to another, *etc.*

*To use database merging:* Open the database into which you want to merge. If you're going to make an excerpt of an existing database, use **File|New** to make an empty shell into which to merge. Use the **File|Merge commodity database with...** menu item to choose a database candidate for merging, at which point the Merge Options dialog appears. Choose the range of days you want to merge from the candidate database, and how you want conflicts resolved (see the TPA HELP system for more details). On pressing **OK**, the merge is completed. You will need to save this database before leaving TPA. TPA will remind you to do this before quitting, even if you have turned off novice prompting (see Novice prompting below).

#### Doing cross-database searches

Whenever you do a TPA search, you are using the database whose title appears in the TPA STATUS bar, and in the Applies to panel in the Search Results window. If you like, you may take the results of a search, and refine that search *for a different database, i.e.*, a cross-database search. For example, **"show me all of the days when crude oil is up \$5 and T-bonds are also up on the day."** This allows you to check out correlations between markets in planning your trading strategies.

*To do a cross-database search:* First do the initial search. Then, open the second commodity database using the **File|Open commodity database...** menu. Finally, **Refine** the existing search from the Search Results window. The new search result you obtain will be days from the *newly-opened* database which match the criteria.

What TPA does, on refining a search result from a database that is no longer loaded, is first to find those days in the search result that are actually present in the current (new) database. It then does the usual refinement on those days. If there are no days in common, TPA will tell you so. When the databases are not both for the same range of days, beware of drawing any conclusions based on the Percentage matching number.

## Using Combine, Offset and Invert (and Refine)

The ideal way to generate a search result in TPA is to figure out exactly the question you want to ask and ask it all at once. However, you will rarely if ever know *exactly* what you need to ask. Instead you will have a rough idea of several areas you want to check. For this reason, the Search Results window provides the **Refine**, **Combine**, **Offset** and **Invert** buttons so that you can do logical operations on search results that you've already obtained without having to ask those questions again. In this way, you can use the Search Results window as a kind of scratch-pad for manipulating search results.

## Managing refined question chains

You will occasionally carry out a series of searches and refinements that you will want saved for future use. However, TPA can only save the most recent refinement of any search in the form of a Custom question. *Here's how to get around this:* Once you have a refined question chain you want to save, reconstruct it in the form of a question in the Analysis window, using *and* wherever you did a **Refine** or a **Combine** from **both**, or wherever you did a **Combine** from **either**, and *not* wherever you did an **Invert**. (This version of TPA does not provide a way of doing an **Offset** using the Analysis window.) Then, save this question as a Custom Question. The one exception to this procedure is the Minima and maxima question, which gives different results when asked of the whole database (min/max of all the days) and a refinement (min/max only of the days in the search result being refined).

## Printing search result reports

You may wish to print a permanent record of a search you've done using TPA. *To print a search result report:* Use the **Print** button in the Current Result panel of the Search Results window. The report is essentially a transcript of the information you see when you press the **Details** button in the Search Results window. The default font has been chosen so that a typical report will fit on a sheet of paper, but still be readable. You may want to use the **File|Printer setup...** menu item to change the printer into landscape mode before printing very wide reports. The fields that actually get printed for each day in the search result are customizable. Use (**Edit|Preferences...** menu, **Reports** tab) and the checkboxes to select the set you want, or to change the default font and font size. This font is also used for printing profiles using the **Print** item in the right mouse button menu.

## Copying search result details to Microsoft Excel

The information displayed by the **Details** button in the Search Results window can be copied, using the clipboard, to Microsoft Excel or a similar spreadsheet or charting application. This is the simplest way of preparing charts of quantities such as volume, open interest and daily closes. Copy the current search result to the clipboard (menu **Edit|Copy**), and paste it into Excel. If you have checked the box (**Edit|Preferences** menu, **Reports** tab, **separate result components with tabs**), the information will automatically be arranged into individual cells within the spreadsheet.

## **Helpful hints**

As you work with TPA, you can make your work a little easier or faster using the following helpful hints and tips.

### Novice prompting

You will often find places where you ask TPA to do something that can't later be undone, e.g., exiting without saving a changed database. By default, TPA displays a reminder dialog with the title TPA Novice Prompt in these cases, so you can confirm your intentions. After you

become very proficient with TPA, you may begin to find these little reminders annoying, so they can be turned off (**Edit|Preferences...** menu, **Misc.** tab, **Novice prompting** checkbox).

## Making TPA go fast—1. Managing memory efficiently

A typical Windows™ computer has several Mb of main memory (RAM) and uses a portion of the hard disk to emulate memory so that it can run more programs than actually fit in RAM. This is often referred to as paging or swapping. Since the hard disk is a mechanical device, however, it is much much slower than the electronics in memory chips. If TPA starts out running smoothly, and then starts to get slower and slower as you work, it means that you are filling up memory and the computer is starting to use the emulated disk-based pseudo-RAM. There are two solutions: a) **Delete** some or **Delete all** of the search results from the Search Results window (you should get into the habit of doing this kind of housekeeping every so often) or b) buy some more RAM for your computer.

It's worth knowing how TPA handles search results so that you can manage its use of memory efficiently. If you do a search using the blank (...) question, you get a search result that contains all of the days in the database. This search result is effectively *a second copy of the entire commodity database*. A good rule of thumb is that each year (some 250 days of trading) of TPA data takes up about 100 kb in memory, so if you leave a lot of unneeded searches lying around in the Search Results window, you will run low on memory after a time and TPA (as well as everything else you're trying to run in Windows) will slow down dramatically. It's for this reason that TPA saves Custom Questions (the "recipe" for the search results) rather than the search results themselves (which would take up a lot of disk space if they were saved).

You can keep an eye on the amount of free memory (actual + emulated) using the TPA STATUS bar at the bottom of the main TPA window.

## Making TPA go fast—2. Ordering questions

Obviously you'll want TPA to answer your questions as rapidly as possible, so that you can act quickly on the information. Most of the TPA Questions can be evaluated very quickly. The slowest part of evaluating a TPA Question is when the question involves generating a Market Profile®. This happens, *e.g.*, in the TPO counts question, the Initiative/Responsive question, in any question when you compare a price to the longest TPO price, *etc.* TPA takes whatever shortcuts it can. For example, if you're looking for (<A> and <B> and <C>) and <A> turns out to be false, the overall answer must be false. To save time, then, TPA won't bother asking either <B> or <C>, since they don't matter. Therefore, if you're asking a multiple-clause question, ask the easy or fast questions first and the harder or slower ones toward the end. For example, (<Day of week is Wednesday> and <Selling TPO's > Buying TPO's>) should evaluate much faster than (<Selling TPO's > Buying TPO's> and <Day of week is Wednesday>), while giving exactly the same result.

## Adjusting contract Rollovers

In TPA commodity databases, only the front or active contract's price information is stored. Be aware, though, that on rollover to a new contract, there may be an artificial gap in the price data due to the switch in contracts. Since search results are based upon current prices, failing to adjust for rollovers may cause certain search results to be inaccurate. To make sure that this feature does not interfere with search results, select the default position of adjusting for rollovers except when you just would like to observe historical price information.

## Market data issues

While we make every effort to obtain reliable market price and volume information, and to cross-check among sources, there are inevitably minor glitches in market data. Select

**Sources of Data** in the contents page of TPA HELP, followed by **data scrubbing** (in the final paragraph) for a description of how we resolve these inconsistencies in TPA.

Note that, in TPA, volume and open interest are quoted as totals *for all contracts being traded*.

## Printing and the clipboard

If you hold down the control (**Ctrl**) key on the keyboard while choosing any printing operation (**File|Print** menu, Print TOOLBAR icon, **Print** button in any dialog), the information will be copied to the Windows clipboard instead of printing. This is the *only* way of copying TPA TRADING DIARY reports to the clipboard.

## Seeing more in a window

TPA Chart windows automatically redraw their contents to fit, whenever the window size changes. However, to use a Profile window effectively, you generally need to be able to distinguish the individual letters. When the size of a Profile window changes, then, the contents don't change size, but the window acquires scrollbars; use them to bring different parts of the window's contents into view. If you prefer, instead, to see more of the profile(s) in the window, but smaller, use the Zoom out TOOLBAR icon or the **Profile|Font...** menu to choose a smaller font size. The changed font only applies to the current window. If you want all profiles to appear for the first time in this font, then select it using (**Edit|Preferences...** menu, **Profile** tab, **Font...** button).

## Selecting ranges of dates

Sometimes you'll want to ask a question that should apply only to a certain range of dates, and the Analysis window provides scrollbars to do just that. If you need to save the dates as part of a custom question, instead use the Date range question in the Miscellaneous section of the drop-down lists of the Analysis window. For example, a Date range question selecting dates from 1/1/93 to 12/31/93 could be saved as a custom question called "All days in 1993." That same question combined with <Day of week is Monday>, for example, could be saved as a custom question called "All Mondays in 1993."

## Printing a Profile window

If you print a Profile window, TPA tries to make a faithfully scaled copy of *at least* whatever is currently visible in the window. Here's how it works. The printout is first scaled so that the *width* of the window fills the width of the page (which could be the long dimension, if you have chosen landscape mode using the **File|Print setup...** menu). In other words, the left-to-right content of both window and printout will always be identical. However, since the printer page is deeper (in portrait mode) than the window is high, you will see more of the profiles in the printout. You can use this scaling to your advantage, especially when printing combined profiles that cover long periods of time: if you make the window much *wider* than the visible portion of the profile, the printout will be scaled smaller and you will see more of the vertical extent of the profile. Note that, in landscape mode, this same behavior can cause you to see less than the vertical extent of the window.

## Customizing TPA

Many aspects of TPA can be customized to your preferences. Open the TPA Preferences dialog using **Edit|Preferences...** The TPA Preferences dialog has a series of tabs for choosing related quantities. The categories are:

*Time*            choose your time zone so TPA can report period times in your local time. All other time-related items are set in Windows Control Panel.

<i>Profile</i>	choose permanent options for Market Profiles® like font, scaling, <i>etc.</i>
<i>Indic</i>	choose default parameters for the technical indicators provided by TPA (stochastics, RSI, HLC).
<i>Reports</i>	choose which quantities to print in search result reports
<i>Misc</i>	choose miscellaneous settings for TPA such as novice prompting, whether to display the TPA TOOLBAR and the TPA STATUS bar, <i>etc.</i>
<i>Merge</i>	choose the default options for handling conflicts during commodity database merging and for commodity database updates.
<i>Sheet</i>	edit the template for the TPA SPREADSHEET which is automatically used as the basis for each new day's spreadsheet. You may instead edit the template in Microsoft Excel or a compatible application (the template is saved in Excel 4.0 format).

You can also choose your favorite color scheme for each kind of window in TPA, using the TPA Color Editor (**EditColors...**). It provides tabs for choosing miscellaneous Profile and Chart window element colors, colors for daily profiles and colors for monthly profiles. In each page of this dialog, click on the color swatch for the element whose color you want to change, and TPA will present you with a standard Windows color selection dialog.

### Help keyword searches

If you're having trouble finding your way around the TPA HELP system, you may wish to try a keyword search of HELP instead. Use **Help|Search for Help On...** to display the help Search dialog. Enter a keyword you think might apply, *e.g.*, "profile," then follow the instructions. You will then jump right to the appropriate section of the TPA HELP system.

### Contacting PTT, Inc.

Congratulations! You've read through the whole manual (or you're one of those people who skips to the last page of murder mysteries, too!) You should now know enough to be able to experiment fruitfully with TPA. If you need help, just open the TPA HELP system and look around; you should be able to find anything you need.

Various TPA-related resources will be made available from time to time through our home page on the World Wide Web at <http://www.ptti.com>. Stop by every so often to find out what's new at PTT, Inc.

If you still need assistance, you can contact us either by e-mail at [TechSupport@ptti.com](mailto:TechSupport@ptti.com) or by telephone at +1 (203) 254-7800, and we'll get back to you as soon as we can. Remember, though, we don't have the resources to provide free consulting services about what questions you should be asking, or how to interpret TPA-generated information in terms of trading strategies. Hey—that's why they pay *you* the big bucks!

## Appendix

### Questions supplied with TPA

The individual “building block” questions supplied with TPA are the following (listed in the same way they appear in the drop-down lists in the Analysis window and grouped according to similar function):

...	a blank question, to which the answer is always <true>
Custom Questions	search for days matching a previously filled-in and stored question or group of questions.
<hr/>	
PROFILE-RELATED	
<?> <?> <?> tops/bottoms	search for top or bottom combinations of period letters
Type of day	search for days of a particular type, such as normal, P-type, trend, <i>etc.</i>
Initiative/Responsive	assess selling or buying as initiative or responsive activity
Value area	compare value area to other prices and ranges
TPO counts	compare various aspects of the profile in terms of TPO counts, such as selling TPO's, buying TPO's, longest TPO line, <i>etc.</i>
TPO relationships	compare TPO counts to those of previous days
<hr/>	
EARLY TRADING	
Opening range	compare opening range to other prices and ranges
Initial balance	compare initial balance to other prices and ranges
<hr/>	
PRICES	
Opening prices	compare opening price of any period to other prices and ranges
High prices	compare high price of any period to other prices and ranges
Low prices	compare low price of any period to other prices and ranges
Closing prices	compare closing price of any period to other prices and ranges
Arbitrary prices	compare price in any of several periods to other prices and ranges
<hr/>	
VOLUME AND OPEN INTEREST	
Open interest	compare open interest (OI) for the day to an absolute number
Open interest multiples	compare open interest (OI) to that for the previous day (within a factor)
Volume	compare trading volume for the day to an absolute number

Volume multiples	compare trading volume for the day to that for the previous day (within a factor)
Tick volume	compare tick volume for arbitrary periods to an absolute number
Tick volume relationships	compare tick volume for arbitrary periods to that for other periods in the same or previous day (within a factor)

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#### PERIOD RANGES

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Quantitative price rel'ships, inter-day	quantitatively compare prices to other prices and ranges on any other day
OHLC relationships, intra-day	compare open, high, low, close in any period with open, high, low close in any other period
OHLC quant. rel'ships, intra-day	a quantitative version of OHLC rel'ships, intra-day, which allows the extent of the mismatch to be probed
Period extensions	probe extensions of trading range between any pair of trading periods
Period ranges	search for days having specified ranges between arbitrary periods
Period range multiples	compare size of price ranges to other price ranges either today or on the preceding day
Period range relationships	compare price range for arbitrary periods to other prices and ranges
Period range relationships, intra-day	compare price ranges for arbitrary periods to those for other periods either today or the preceding day

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#### TECHNICAL ANALYSIS

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Rotation factors	compare up, down and combined rotation factors for arbitrary periods to an absolute number
TFI	compare the TFI (Trade Facilitation Index) for arbitrary periods to an absolute number
TFI multiples	compare the TFI (Trade Facilitation Index) for arbitrary periods to that for other arbitrary periods (within a factor)
Period RSI	compare the half-hour RSI (Relative Strength Index) to an absolute number
Day RSI	compare the day RSI (Relative Strength Index) to an absolute number
Period stochastics	check for crossing period stochastics above/below particular levels
Day stochastics	check for crossing day stochastics above/below particular levels

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#### SPREADSHEET

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Spreadsheet quantities	compare the value of any cell in the TPA Spreadsheet to an absolute number
Spreadsheet relationships	compare the value of any cell in the TPA Spreadsheet to the value of any other

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**MISCELLANEOUS**


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Minima and maxima	find the day in the current set of days with the biggest or smallest value of any of a variety of quantities
Economic statistics	search for days when various economic indicators were released. The indicators may be examined in terms of both performance and how performance related to expectations.
Note contains <text>	search for days where the free-form text note in the database contains "text"
Day of week is <?>	lets you ask for a particular day of the week
Month is <?>	lets you ask for a particular month
Contract is <?>	lets you ask for a particular contract month
Date range	lets you select a particular range of dates
User-programmed - TPAScript™	(included, but no longer supported)
User-programmed - TPABasic™	lets you ask a question in the form of a program in the TPABasic™ language, a compiled VBA-compatible language with TPA extensions

### **Question abbreviations**

Filled-in questions in TPA (see *Chapter 5*) are presented in a kind of shorthand form to allow them to fit in the restricted space of a question box. The following is a dictionary for this question shorthand.

>	higher than (greater than)	I	initiative
<	lower than (less than)	t's	today's
>=	at least (greater than or equal to)	y's	yesterday's
<=	at most (less than or equal to)	o, opening	opening price
(+)	tomorrow	h, high	high price
(-)	yesterday	l, low	low price
[nv]	not violated later	c, closing	close price
[v]	violated later	a, any	any price
<*>	any period, e.g., <y>, <B>	?	don't care
R	responsive	P-Stoch	period stochastics
P-RSI	period RSI	D-Stoch	day stochastics
D-RSI	day RSI	T rot f	total rotation factor
U rot f	up rotation factor	D rot f	down rotation factor
tk	ticks	rg	range
ext	extension	N	normal
O	other	PU	P-type up
PD	P-type down	TU	trend up
TD	trend down	XU	trend extended up
XD	trend extended down	LU	late-break up
LD	late-break down	NT	non-trend
NE	neutral	U?	user-defined 1-8
extn	extension	i bal	initial balance
tk vol	tick volume	vol	volume
in	is contained in	conts	contains
intscts +	intersects above	intscts -	intersects below
[iz]	ignore zeros	[u]	search user note
[d]	search PTT-provided note	[ud]	search both notes
min	smallest, minimum	max	largest, maximum

[x]	exclusive		
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## The TPABasic™ Programming Language

### What is it for?

Built into TPA is a programming language called TPABasic™, that you can use to:

- ask questions that are awkward or impossible to formulate using the normal dialog-based building blocks, e.g., find the first trading day of each month.
- ask questions that generate a numerical rather than a true/false answer, e.g., “how much...?” or “what is the average...?” rather than “how often..?”
- generate reports or summaries of the data in the current commodity database, e.g., a printout of the open, high, low and close prices for each half-hour period of a given day.
- prepare custom charts of the data in the current commodity database, or indicators based on the data, e.g., a moving-average chart of the closing price for each day.
- insert market data from the commodity database into the TPA SPREADSHEET, e.g., put the day’s high price into cell B17 of each day’s spreadsheet for further analysis, or load tables of useful numbers from your own files.
- manipulate and document the current list of search results.

This is by no means an exhaustive list, but it illustrates the wide variety of things you can do with TPABasic.

### Is it like anything I’ve seen before?

TPABasic is a compiled language that is compatible with VBA (Visual Basic for Applications). If you know Visual Basic, you can program in TPABasic. If you have some experience in a different procedural language (e.g., C, FORTRAN, Pascal) you’ll have no trouble at all picking up fluency in TPABasic.

### How do I use it?

A TPABasic program is always run in the form of a **User-programmed - TPABasic** question, the last question in the drop-down list of the Analysis window. Even if you’re writing a program that’s not intended to be a question in the strict sense, it is run by the Analysis window (or, alternatively, from the CUSTOM QUESTION EDITOR, which is more useful when you’re developing programs in TPABasic). The dialog that is displayed when you do either of these things is the development environment for TPABasic. This dialog has a button that activates a drop-down cascading menu of *templates*; these will help you avoid a great deal of typing when writing TPABasic programs. The manual for the TPABasic language was installed with TPA as TPABASIC.DOC, a Microsoft Word document.

TPA runs TPABasic programs by attempting to call several functions that you, the user, write. If you provide functions with the appropriate names, TPA will run them. The one function that *must* be present is a function named `eval` having the form:

```
function eval as boolean
    'your code goes here
    eval = true
end function
```

You should think of `eval` as the main program of your TPABasic script. TPA calls this function once for each day during a database search; each time it is called, the variables `yesterday`, `today` and `tomorrow` are set to the appropriate dates. If `eval` returns `true`, as in the example above, then that day is included in the search results; if it returns `false`, that day is not included.

If you want to evaluate only until some condition is met, then include the function `abortEval`:

```
function abortEval as boolean
    'your code goes here
    abortEval = true
end function
```

If `abortEval` is present, and returns `true`, then no further calls to `eval` are made during the current database search.

For situations where you don't really want to evaluate things for every day (e.g., you want to make a chart), use a function called `beforeEval`, having the form:

```
function beforeEval as boolean
    'your code goes here
    beforeEval = false
end function
```

This function is called only once, before any call to `eval` is made; if `beforeEval` returns `false`, then `eval` is *never* called.

After `eval` has been called for all of the days, TPA will call a procedure named `afterEval` if it exists:

```
sub afterEval
    doSomethingOrOtherHere
end sub
```

This can be very useful if you are calculating an average; in each of the `eval` calls, you add the quantity you're averaging to a sum, then in `afterEval` you divide by the correct number of days (the `numberOfDays()` function in TPABasic) to get the average. The question database `BASIC.QDB` contains examples of this kind of technique.

Finally, TPA will call a function named `displayString` if it exists:

```
function displayString as string
    displayString = "something or other"
end function
```

The string returned by `displayString` is shown as the title in the Question Asked panel of the Search Results window. Since it is the last of your functions that TPA will call during the course of a search, you can even use it to report numeric results and have them show up right in the Search Results window.

## What kind of performance will I get?

Using a TPABasic program, you can duplicate just about any question that you could ask using TPA's normal dialog-based interface (even including your own custom dialogs). While dialog-based and TPABasic-based questions run at about the same speed in many cases, you will often get a moderate speed increase by using a dialog-based question if an appropriate one is available.

## How can I learn more?

A comprehensive reference manual for TPABasic was installed in your TPA directory in the Microsoft Word format file `TPABASIC.DOC`. You may wish to print this file for future reference. Look there for detailed information.

In addition, a custom question database called `BASIC.QDB` was installed along with your copy of TPA; it contains a number of custom questions that were programmed in TPABasic. You can load it using the **Open** button of the CUSTOM QUESTION EDITOR, and examine each question in turn using the **Edit** button. These questions/programs can be used as a set of tutorial examples to help you get up to speed with the language; many of them are useful in their own right. If you'd like to keep a text copy of each example, copy it to the clipboard (drag to select all

the text, press **Ctrl+C** to copy), paste it into Notepad or some other text editor, and either save it to a file or print it out and file it away.