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The *Opening Bell Monthly* is a publication of AIQ Incorporated
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TOOLS OF THE TRADE

ON BALANCE VOLUME

By David Vomund

The On Balance Volume (OBV) indicator was developed by Joseph Granville and is used to detect hidden accumulation or distribution. The theory behind this indicator assumes that there is "smart money" that is able to accumulate stocks at low prices and ride them higher. As "the general public" starts to accumulate a security, the smart money begins to sell. The general public does not realize this is happening because the distribution of smart money does not affect price.

Once the smart money has sold, the security's price tops out and the general public then finds itself on the

wrong side of price activity.

The OBV indicator works best for securities with a following of a mix of large professional players and smaller uninformed investors. OBV attempts to measure insiders' knowledge, which may deal with the fundamental side of the stock. The smart money may not be Wall Street professionals, but rather the company's management. The OBV indicator allows technicians to tap into

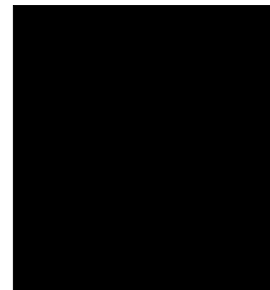
this "inside knowledge."

On Balance Volume is simply a running total of accumulation volume less distribution volume. If a stock closes higher than the previous day's closing, then the day's volume is said to be accumulation volume and the entire day's volume is added to the running total. If the stock closes lower on the day, then the day's volume is considered to be distribution and is subtracted from the running total.

With this in mind, it's best to buy an issue with evidence of accumulation (rising OBV) and sell on signs of distribution

(falling OBV). The indicator is useful in determining when a trend reversal is likely and when a trend will continue.

Let's look at several examples of stocks to see when OBV says buy, sell, or hold. First the sell side. **Figure 1** is a plot of Amoco (AN), with OBV plotted in the lower window. Amoco corrected from October to mid-December, at which time the stock began to advance. On Balance Volume,



DAVID VOMUND

"OBV attempts to measure insiders' knowledge... and allows technicians to tap into this inside knowledge."

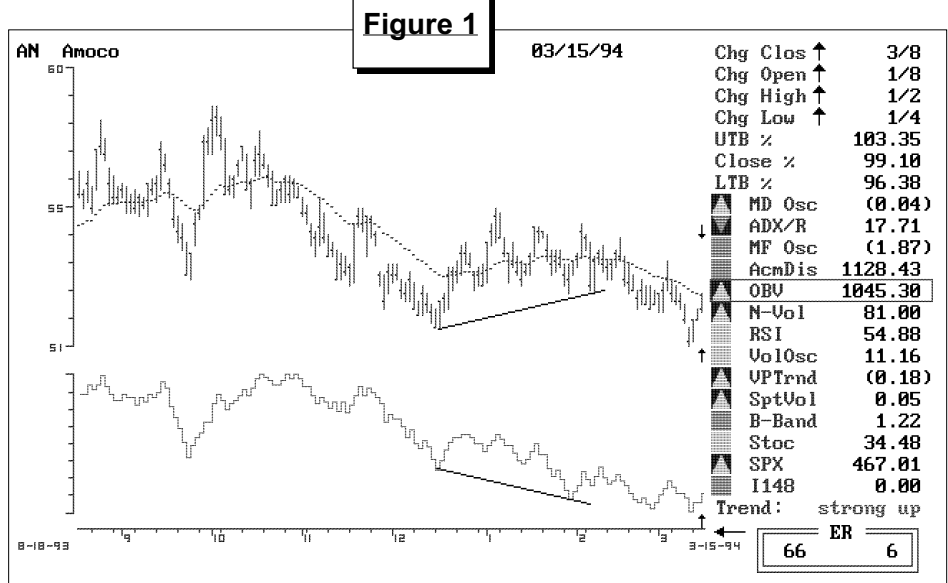
however, continued to move lower and the advance for Amoco was short lived.

Cummins Engine (CUM) is shown in **Figure 2**. CUM showed great relative strength until mid-January, at which time the stock began a strong correction. During the advance, smart money was selling as indicated by the lower highs in the OBV line.

Figure 3, a plot of Echlin Inc. (ECH), is another example of a negative divergence with OBV. The general public saw a stock with advancing prices. OBV, however, showed that the stock was under distribution for several months before the actual sell-off.

OBV works for the buy side as well as the sell side. **Figure 4**, a plot of Carpenter Technology (CRS), shows that the stock was correcting and heading lower until mid-September. At the same time, OBV was significantly higher. The AIQ knowledge base, which includes OBV readings, saw this divergence and issued a 98 buy signal on September 21.

So far, our examples have shown how OBV is a leading indicator for trend reversals. OBV, however, doesn't always point toward reversals. Many times it signals a "hold" status. Compaq Computer (CPQ) is plotted in **Figure 5**. CPQ is in a strong up trend



and has advanced significantly. OBV shows no negative divergences and is making new highs at the same time that CPQ's price is making new highs. According to this indicator, the up trend will continue.

We see in these examples that it takes many weeks, even months, for significant OBV readings. Thus, the OBV indicator can be more useful to investors with an intermediate term time horizon and is less useful to short-term traders. However, short-term traders can use the indicator to confirm stock movement. If the stock breaks above a trendline, check to see if OBV confirmed the move. If OBV is flat, the

trendline break should be ignored.

Whether OBV is used to project short-term or intermediate-term price movements, it is an indicator that deserves attention. ■

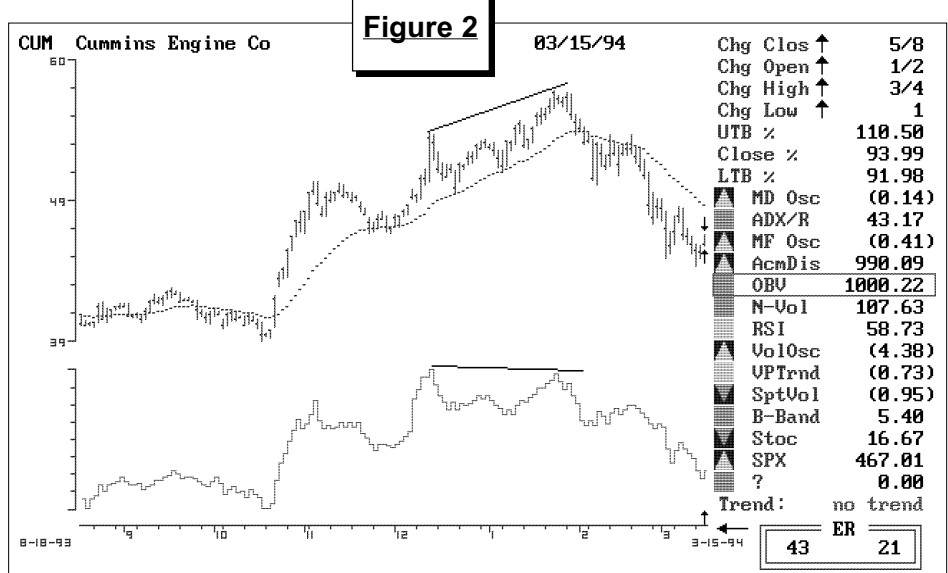
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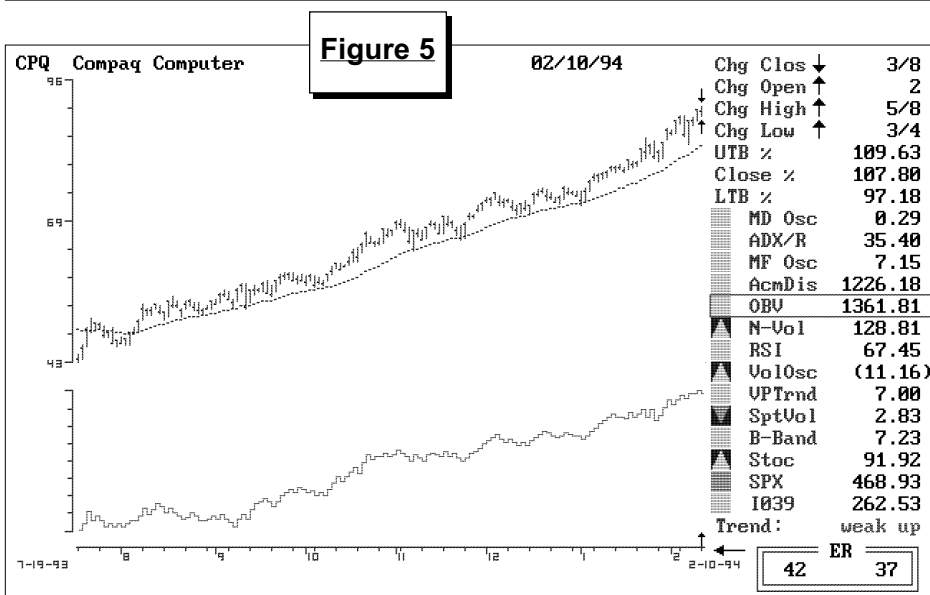
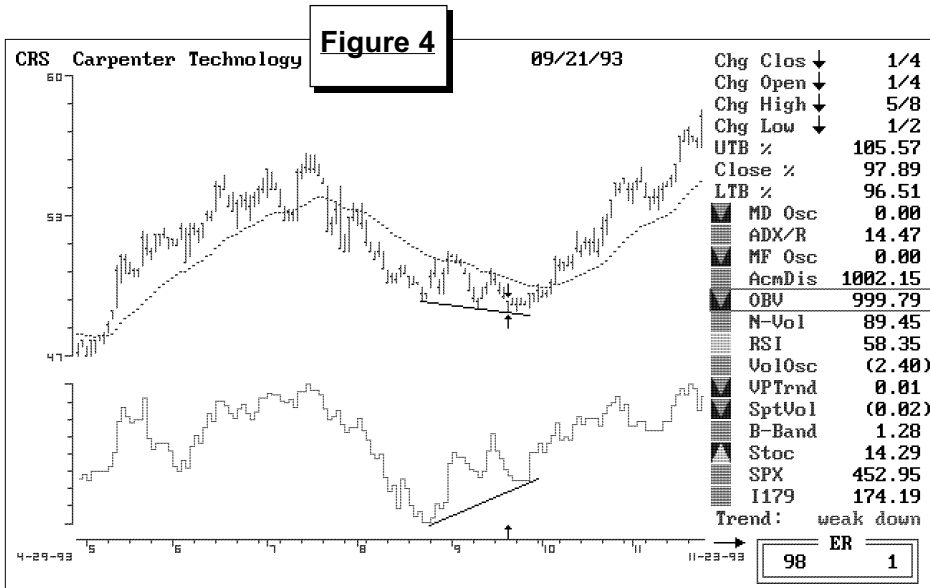
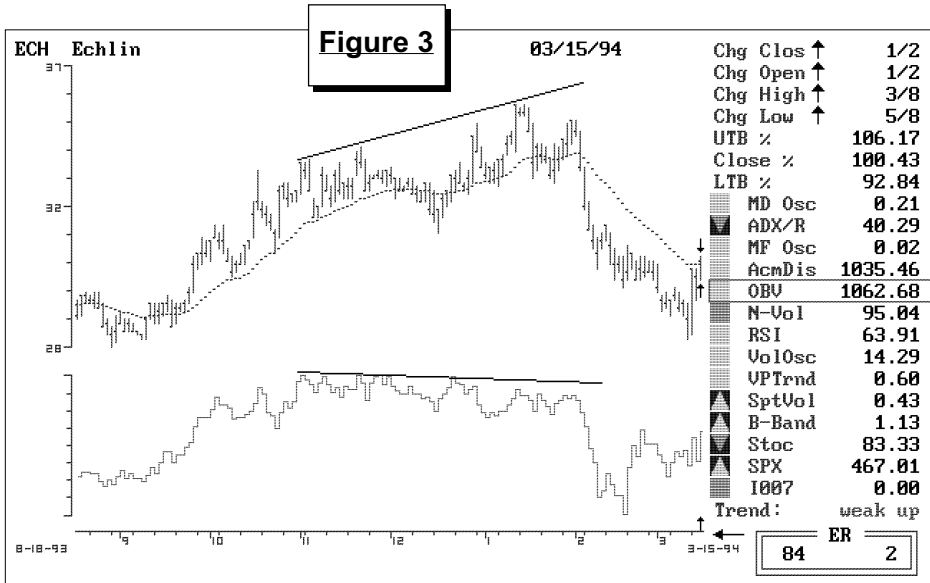
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TOOLS OF THE TRADE *continued* . . .

MARKET REVIEW



AIQ registered two buy signals since our last issue. There was a 99 up signal on February 28 and then two days later, on March 2, there was a 98 up signal. Initially, these signals were unconfirmed and the market did not immediately increase. Our trend and momentum indicators were moving lower but the overbought/oversold indicators, including the Stochastic, RSI and MF RSI, were near oversold territory. Volatility increased and on Wednesday March 2, program curbs were reached as the Dow was down 50 points intra-day. But by the market close, the Dow ended up 22 points. This helped the Volume Accumulation Percent indicator, which played a role in that day's buy signal.

The odds of a nice market advance increase when AIQ registers multiple buy signals in close succession. It became apparent that small company stocks would outperform large company stocks during this buy phase. The relative strength of the Russell 2000 index, an index of small company stocks, versus the S&P 500 favored the Russell 2000 (see OBM June 1993). Another sign that pointed toward a broad market advance was the large number of stocks with confirmed buy signals. From the database of the AIQ Pyramid, around 80% of all stocks with confirmed signals were on the buy side.

By March 18, the Russell 2000 index and the OTC Composite closed in new high ground. The Dow and S&P 500 have shown strength but are still off their highs. Volume has soared and on March 18 we saw the third highest volume day ever.

The new TES 3.0 Group/Sector Report shows that Machine-Tools & Related Products, Media-Periodicals, Advertising, and Finance-Mortgage & Related Services have a high percentage of stocks with buy signals. Strong sectors are Technology and Electronics. ■

INDEX OPTION INVESTING

By David Vomund

This issue of the *Opening Bell Monthly* includes an article about market timing and mutual funds. We continue the same theme here, but extend it to a more volatile but higher profit potential investment — index options.

Because of the leverage they provide, index options are a popular vehicle with traders who want to bet on the general market or on particular segments of the market.

Since the AIQ market timing Expert Rating typically gives counter-trend buy and sell signals, it is an excellent tool for index option traders. For example, a buy signal is registered when the market hits a new 21-day low and a sell signal is issued when the market hits a new 21-day high. Because option premiums move so fast, trend following systems get you in too late, making AIQ's counter-trend system preferable.

Making money in options can be tough. Unlike the equities market, in order for you to make money in options someone else must lose money. Other traders are out to get your money and they will succeed unless you have a strict trading plan.

The first step in profiting from index options is to be selective in your option purchases. A trader who is selective and only enters 5 to 10 index option positions a year is usually more successful than a trader who is always in the market. Unless you are very confident in your judgment of market direction, only consider buying options when there is an Expert Rating buy or sell signal for the market.

Not every Expert Rating should be acted upon, however. When a sell signal is given after a sharp drop in the

market (similar to the sell signal on February 4, 1994) the option position should be avoided. The market may continue to go down, but put options will likely be too expensive. Check indicator readings, trendlines, and TradingExpert 3.0's computerized Market Log readings to see whether the rating should be acted upon.

In general: the ADX/R indicator should be rising and above its signal line (indicating that the market is entering a trend). Ideally, the stochastic and RSI are in oversold territory on a buy signal or overbought territory on a sell signal. TRIN is a good indicator on the buy side; thus, if you are considering buying calls, check the

“Since the AIQ market timing Expert Rating typically gives counter-trend buy and sell signals, it is an excellent tool for index option traders. . . option premiums move so fast, trend following systems get you in too late . . .”

TRIN reading. Finally, look for divergences or trendline breaks in the MACDI.

An example of this multi-indicator analysis is shown in **Figure 6**. AIQ's last Expert Rating signal was on March 2, 1994, and we will examine the technical readings for the OEX on this date. The market was at a near-term low and this was the second buy signal without an intervening sell signal, factors which increase our confidence in an upward move. This signal was unconfirmed, but in the fast-moving options trading game, we can't wait for confirmation.

Our analysis begins with the ADX/R, the first indicator plotted in figure 6. We see that the indicator is rising, but it is still below its signal line. This is a neutral reading. On the positive side,

Stochastic and RSI are both near oversold territory. However, the MACDI is falling. Ideally, we want to see the MACDI indicator bouncing upward as the market drifts lower. Taking a look at the Market Plot for this day reveals that there is a neutral reading for TRIN.

Our overall assessment is positive but not outright bullish. However, the conditions are good enough to enter a position with a small percentage of our trading capital.

The next step in our option strategy is option analysis and valuation. For this we turn to AIQ's options extension, which uses the Black-Scholes pricing model to value options. Proper input into the Situation Data box on the Position Analysis screen is critical. The most important element of option valuation is volatility.

There are several methods that can be used to determine volatility. The default value in the Situation Data box is a “computed volatility.” Most option traders prefer “market implied volatility” (MIV). MIV, which is calculated by plugging current option prices into the Black-Scholes model and solving for volatility,

represents the volatility that Wall Street expects in the future. In other words, implied volatilities are computed under the assumption that every option is fairly priced.

To arrive at the overall MIV for a security, an average of the implied volatilities, weighted by volume traded, is computed. This volatility figure can then be used to see which options are expensive or cheap relative to other options on the same security.

The MIV figure is automatically calculated and listed in the Position Analysis screen of the options extension (**Figure 7**). The bottom line of the Economic Analysis box shows two values for market implied volatility — an MIV for call options and an MIV for put options. In figure 7, the MIV of call options is 13 and MIV of put options is

OPTION STRATEGIES *continued* . . .

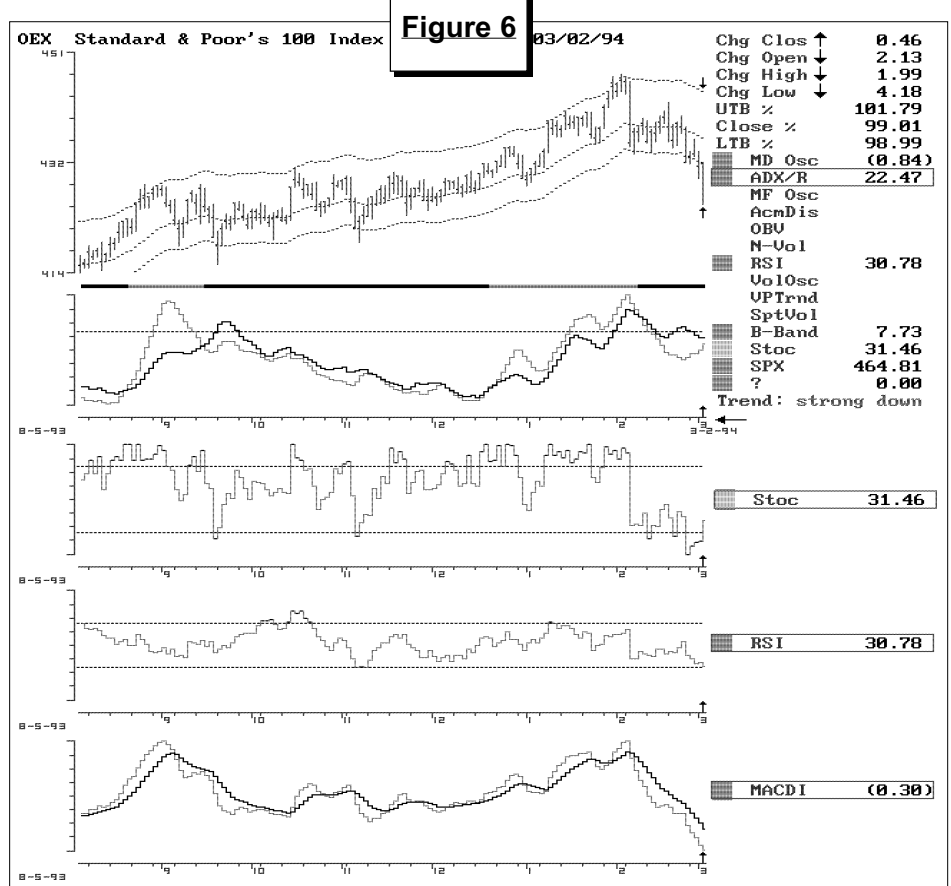
14. We typically average these numbers and plug the resulting figure into the Situation Data box. Only whole numbers are accepted so we have used 13, the implied volatility of call options, as the overall MIV.

Another important element in the Situation Data box is the Indicated Value. This is the value that you think the underlying security will move to at some time between today's date and the analysis date (the next date that options will expire). The indicated value should be the minimum value that you expect the security to move.

At this point, we can let the AIQ options extension recommend which options are attractive for purchase. If options are too expensive, it will give no recommendations. Try changing the analysis date and the indicated value to see how the list of recommended options change.

Options Trading Recommendations:

1. Only buy options with money that you can afford to lose. Some say the only difference between buying options and gambling is that with options you can write off your losses!
2. Time premium is an option player's worst enemy. Never buy options that have less than one month until expiration. More conservative players should buy options with two or



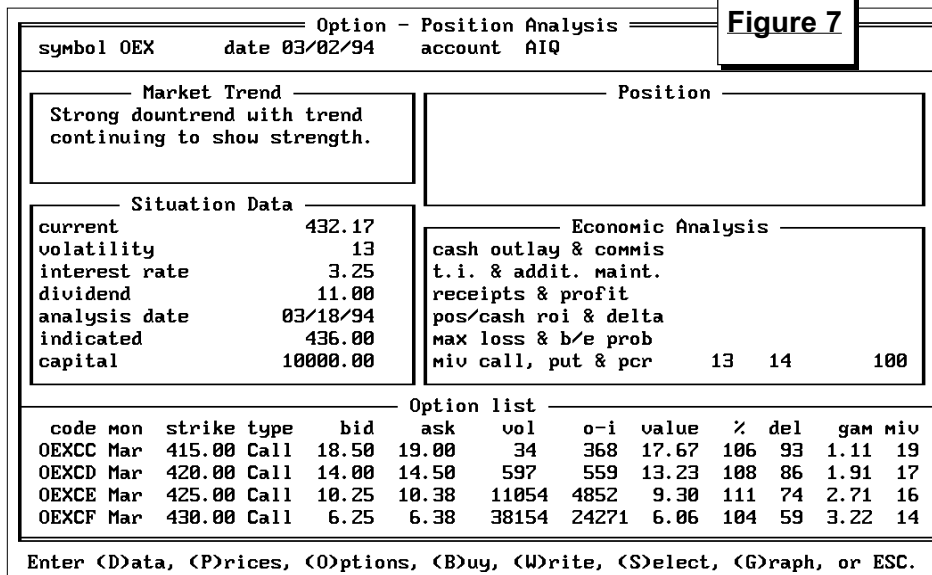
three months remaining, liquidity permitting.

3. Buy options with a striking price near the price of the underlying security. Options that are far out-of-the-money can be illiquid and more risky.

4. Don't lose your entire position.

Option players lose money almost as often as they make money. The gains can be much larger than the losses, however. If your option position loses 50% of its value, sell and wait for the next opportunity (you may prefer to have a tighter stop).

Good luck. ■



AIQ 1994 EDUCATIONAL SEMINARS

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 Orlando International Airport
 Thursday, Friday, and Saturday
 April 28, 29, and 30
 (1-day, 2-day, & 3-day seminars)

5th Annual Lake Tahoe Seminar
 Hyatt Regency Lake Tahoe
 Incline Village, NV
 Thursday, Friday, and Saturday
 September 29, 30, and October 1

For complete agendas and prices,
 please phone AIQ toll-free,
 1-800-332-2999

MUTUAL FUND ANALYSIS

MUTUAL FUND INVESTING PART I

MARKET TIMING

Most domestic equity funds have diversified portfolios. Some funds outperform others but they rarely buck the trend of the overall market. Market timing plays a major role in profiting from mutual funds. An investor who incorporates market timing can easily outperform a buy-and-hold strategy on a risk-adjusted return basis.

The principle objective of market timing is to avoid major market price declines. This is becoming increasingly important as our market flirts with lofty levels. On average, a bear market occurs every 5 years and stocks lose about 35% of their value. Even if a market timer always gets out too early and misses the best market periods, he will still outperform a buy-and-hold strategy by avoiding those periods of serious market decline.

In fact, if you missed the 10 best days of the stock market from 1980 to 1989, based on the S&P 500, your return would have fallen from 17.6% to 12.7%. But, if you missed the 10 worst days, your return would have increased to 26.6%. Missing both the best and the worst days generated a 21.1% return, or 20% better performance than the buy-and-hold investment. *

It would be nice to be fully invested in the market during bullish time periods and hold cash or short positions in bearish markets. In reality, market timing is a probability game---sometimes you're right and sometimes you're wrong. However, with AIQ, the odds are stacked in your favor.

Table 1 shows a study demonstrating Expert Rating effectiveness. The rules of the study are simple: when we get a buy signal we are 100% long the S&P 500 index. The position is sold when we get a sell signal. No confirmation is used. The study shows that using AIQ to trade funds produced a

higher return in almost every year. Even better, portfolio risk was lower in the trading account.

For example, 1992 returns of the buy-and-hold portfolio and the trading portfolio were almost even. Yet, the standard deviation (a measure of risk) was .55 for the buy-and-hold approach while the trading portfolio had a standard deviation of only .39. This is because the trading portfolio was 100% in cash for 71 out of 254 days. The trading portfolio outperformed on a risk-and-return basis.

This simple study is shown to demonstrate the effectiveness of Expert Ratings. Rather than following this strict strategy, it is better to incorporate a confirmation technique. Prudent AIQ users buy a portion of a position on the initial buy signal and defer further investment until certain indicators,

such as the DMI and 10 day SK-SD, confirm the move. The market prognostication based on the AIQ Market Log is also a factor.

Trading mutual funds is becoming easier as some brokerage services, such as Charles Schwab, are allowing investors to easily switch to different funds free of charge. Another alternative is to trade the ASM fund, an index fund that tracks the Dow. This is a no-load fund that has capped management fees at only .75%. Best of all, ASM allows six switches per year before a withdrawal fee is levied. Most mutual fund companies frown on more than four trades per year. ASM can be reached at (800) 445-2763.

Next month, we'll explain more advanced mutual fund analysis techniques including an explanation of the new Mutual Fund Report available from AIQ TradingExpert 3.0. ■

D.V.

* Ned Davis Research, Inc.

Table 1

Market Timing Strategy Using AIQ Signals:

Average annual return	20.64%
Average trades per year	5
Average gain per trade	4.31%

Buy and Hold Strategy:

Average annual return	12.06%
-----------------------	--------

Buy & Hold vs. Trading With AIQ (avg. annual % return):

Year	Buy & Hold	AIQ
1985	26.33	28.51
1986	14.62	27.24
1987	2.03	44.28
1988	12.40	17.53
1989	27.25	26.95
1990	-6.56	5.00
1991	26.30	33.27
1992	4.40	5.22
1993	7.06	4.46

This analysis is believed to be reliable but accuracy is not guaranteed.
Past performance is not a guarantee of future results.

READERS FORUM

SYSTEM MESSAGES EXPLAINED

By Steve Hill
AIQ Product Manager



STEVE HILL

Since the release of TradingExpert in May of 1992, all AIQ programs display "Check System Messages" at the bottom of the main menu screen when messages are available for viewing. This prompt is shown to remind you how important it is to check your messages after any process that could alter your data files. Such processes can be internal (like Compute Group/Sector Indices under File Maintenance) or external (like Data Base Update). System Messages provide a quick and safe way to locate and correct any problems.

This article will concentrate primarily on messages involving the downloading of data from a data vendor. System Messages should always be examined immediately after a Data Base Update. If you have old messages that you have neglected to clear, press the <End> key to go to the end of the file and the most recent messages.

Most messages fall into three categories: Communications, Data Base Update, and Reports. We will examine a selection of messages from each category.

COMMUNICATIONS

These messages are sent by the data vendor concerning requests that the data vendor received from your AIQ software, and include messages related to dialing and logon.

The first type of message contains information from a completed download.

Communications: 03/18/94 Phone Link to Dial/Data

Communications: 03/18/94 logon at 23:15:17

Communications: 03/18/94 Download Cost \$15.96

Communications: 03/18/94 Logoff at 23:28:01

This information tells you a successful connection was made to the data vendor. Ignore the download cost if you are within the bounds of your flat rate service plan; this price is intended for users who pay for data line by line. For regular daily downloading, you will become familiar with the cost and amount of time required to update your data base. If the time on line is very short, check for a later logon and logoff, as you may have been disconnected from the service for some reason. An incomplete download may have occurred if you see messages such as the following:

03/14/94 Check network

This tells you that a connection was made to the net-

work, but it is not responding as it should. Check that the network and phone number are correct. You can also try an alternative network/number.

03/14/93 Modem not available/responding

The modem parameters may be incorrect, or the modem may be malfunctioning. Check your Communications Parameters.

03/14/93 No answer at phone number dialed

The modem may not be connected to the line, or the number is not answering. Check the modem connection to the line. If there is still no response, try dialing the network number from a handset, and see if you get a response.

Other communications messages to look for include:

Communications: \$LDX 03/18/94 No data available-ignored

Communications: *LDX 03/18/94 invalid

The first message is from IDC, the second from Dial/Data. The first character of both, '\$' (IDC) and '*' (Dial/Data), indicate that the message pertains to an index symbol (messages are different from different data vendors). IDC indicates that currently no data is available for this symbol. Dial/Data shows that the symbol is invalid. Either the symbol is not available, or it has been changed. In such cases, ask your data vendor what symbol they are using.

Note: The symbol LDX is an equity (Linden Expls) that trades on the Vancouver exchange. It was deliberately entered as an index for illustration purposes. The symbol should have been entered as LDX@V.

Communications: IMA 03/18/94 Check for deactivation

The data vendor processed the request for this symbol, but the symbol may not have traded on the day of request. Check with your data vendor. The symbol may have been deactivated in your Master Ticker List.

Communications: No processing done; data base is current

Your AIQ software analyzed the status of your data files and upon comparison to your system status found all data to be current. More often than not, the data base is not current. This is usually the result of an incorrect DOS date or time. Occasionally an incorrect Market Open and Market Close in your Communication Parameters may be the culprit.

Note: Take special care in checking the DOS time. For example, the time may show 10:00a instead of 10:00p.

DB UPDATE

These are messages generated by your AIQ software after it has processed the data received and checked for errors. The most common messages in this category concern variance in price from prior values.

Readers Forum continued on page 8

READERS FORUM *continued ...*

DB Update: KEM 03/14/94 >25% variance from prior values

DB Update: KEM 03/14/94 Possible stock split

DB Update: KEM 03/15/94 >25% variance from prior values

The first message appears because the high, low, or close has a greater than 25% variance from the prior day's figures. The second message occurs when the close price has a greater than 25% variance from the prior day's value. The third message indicates a variance of greater than 25% from prior values, but not on the close price. Again, check for a possible stock split.

Note: TradingExpert v3.0 is now able to automatically adjust stock splits during downloading (IDC and Dial/Data only). The split factor is reported in the System Messages.

DB Update: GREY 03/18/94 Zero volume

The symbol may not have traded on that day. If you believe that the symbol should have traded, use Selected Ticker to reload the data for the day of the problem.

DB Update: WRP-P 03/17/94 23.63 23.63 23.75 500-discarded

This message prints the high, low and close. One of the figures is incorrect. In this case, the low is higher than the high. Use the Selected Ticker function under Data Base Update and reload for the day of the problem. If the data is still discarded, check with your data vendor.

REPORTS

Reports messages relate to the generation of System Reports, which involves the opening of each individual data file and the processing of the data for the criteria specified for each report. The following messages may occur.

Reports: WETT 01/07/93 last updated - ignored

This message appears if the symbol has not been updated in the last 7 days for Daily Reports, or 13 days for Weekly Reports. Check with your data vendor concerning the specified symbol.

Reports: IGT 03/04/94 Range Error (RSR) - check price/volume data for validity.

In normalizing the specified indicator, in this case RSR, the value was outside the normal range. This may indicate extreme values on this symbol or bad data. Examine the symbol on the Ticker Plot, and reload the data using Selected Ticker if necessary.

SUMMARY

I have attempted to show a broad spectrum of the types of messages that frequently occur when downloading data into AIQ programs. A complete and thorough examination of your messages is strongly recommended to maintain the integrity of your data base. When you are satisfied that all the messages have been dealt with, use the <CTRL> + D key to delete the file. The "Check System Messages" prompt on the bottom of the main menu screen will disappear until new messages are generated. ■

STOCK DATA MAINTENANCE

The following table shows past and future stock splits and large dividends:

Stock	Ticker	Split/Div.	Date
Federal Signal	FSS	4:3	03/02/94
BMC West	BMCW	3:2	03/07/94
Hometown Buffett	HBUF	3:2	03/08/94
Southern Union	SUG	3:2	03/10/94
United Healthcare	UNH	2:1	03/11/94
Sport Supply Gym	GYM	5:4	03/11/94
Money Store	MONE	3:2	03/17/94
Seattle Film Works	FOTO	2:1	03/17/94
Varian Assoc.	VAR	2:1	03/18/94
Cisco Systems	CSCO	2:1	03/21/94
Kellwood Co	KWD	3:2	03/21/94
Osmonics Inc	OSMO	3:2	03/22/94
Patrick Industries	PATK	2:1	03/23/94
ShoLodge	LODG	4:3	03/29/94
US Healthcare	USHC	3:2	03/30/94
Cheyenne Software	CYE	3:2	03/30/94
Brinker Int'l	EAT	3:2	03/31/94
HCC Insurance	HCCH	3:2	04/01/94
Lowes Co	LOW	2:1	04/01/94
LSB Bankshares	LXBK	5:4	04/01/94
Hosp. Franchise Sys.	HFS	2:1	04/05/94
Microchip Tech	MCHP	3:2	04/05/94
NFO Research Inc.	NFOR	3:2	04/06/94
Donaldson Co	DCI	2:1	04/07/94
Minnesota Min'g & Man	MMM	2:1	04/11/94
Hach Co	HACH	5:4	04/11/94
General Dynamics	GD	2:1	04/11/94
Mercantile Bancorp	MTL	3:2	04/12/94
Atmel Corp	ATML	2:1	04/12/94
Wolverine Worldwide	WWW	3:2	04/15/94
Gainsco	GNA	5%	04/18/94
United Int'l Holding	UIHIA	2:1	04/18/94
Schulman A Inc	SHLM	5:4	04/18/94
Motorola Inc.	MOT	2:1	04/19/94
Micron Tech	MU	5:2	04/19/94
AutoZone Inc.	AZO	2:1	04/21/94
Manuf. Home Commun.	MHC	2:1	04/25/94
Stewart Info Svs	SISC	3:2	04/29/94

Name Changes:

Sun Coast Plastics Inc. (SUNI) to
Sun Coast Industries (SN)

Cellular Inc. (CELS) to
CommNet Cellular Inc (CELS)

Cardinal Distribution (CDIC) to
Cardinal Health Care (CDIC)