

OCTOBER 7, 2022



MICROGROUP PROJECT

S&P 500 STOCKS

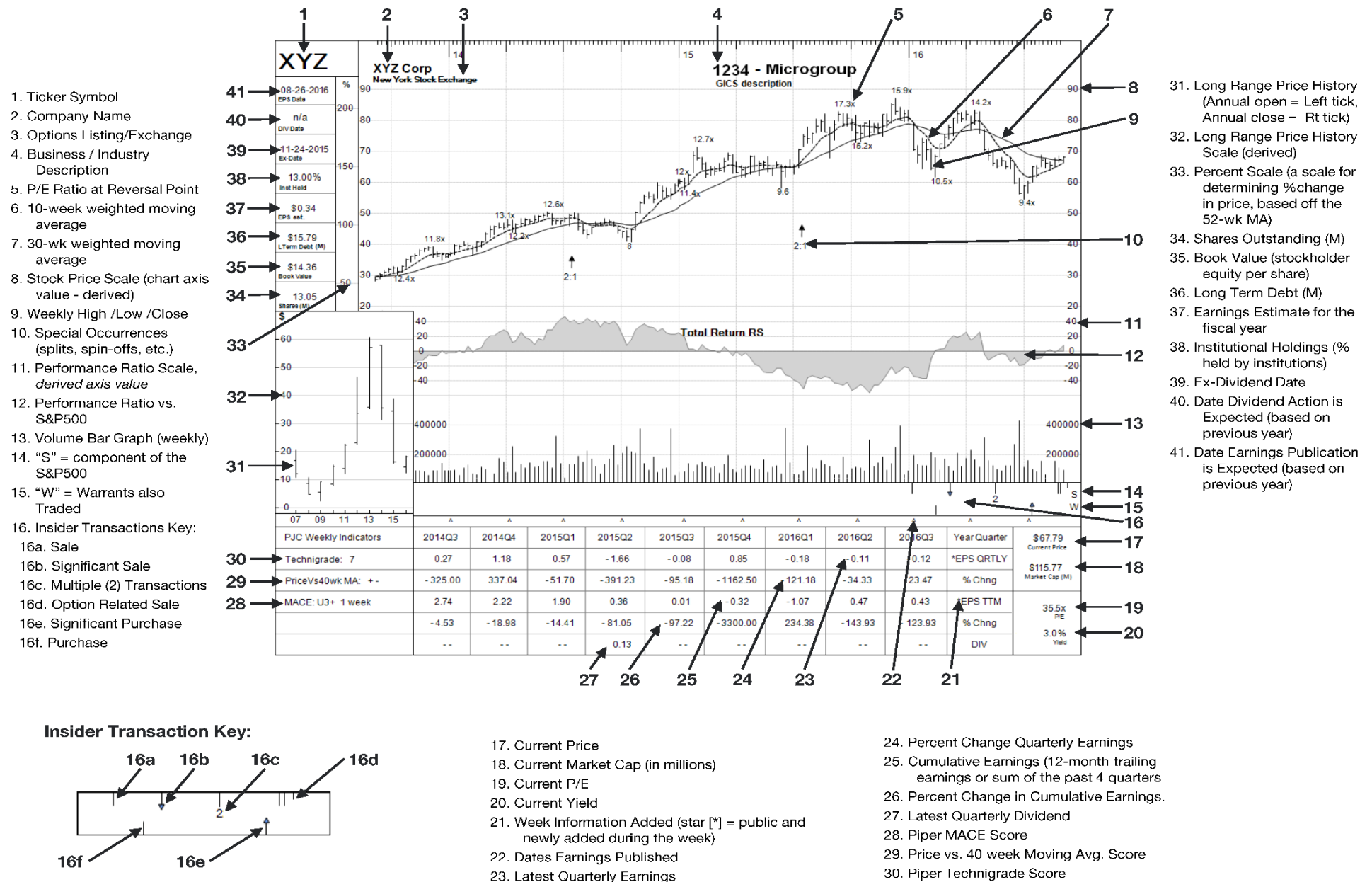
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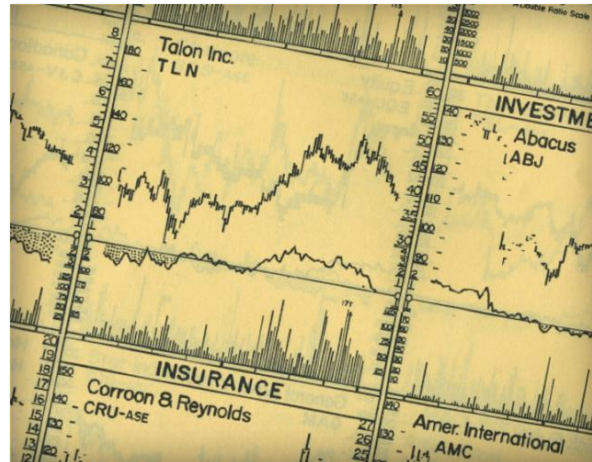
Stock Chart Guide:



History of the Piper Sandler Stock Chart Services:



In 2013, Piper Sandler acquired the Mansfield Stock Chart Service and with that, carried on the legacy of a historically significant company.



When the Mansfield Stock Chart Service was established in 1938, the intention was to supply investors with statistical and technical information about both the general market and its individual components. The goal of this service remains unchanged today—to provide essential components for the successful management of investment portfolios through all phases of economic and market cycles.



Since its inception, Mansfield has offered a unique and valuable service for investors. Piper Sandler will continue providing timely stock charts at the close of the market every Friday with a printed copy arriving week. These stock charts include essential fundamental and statistical data in a highly usable format, making it possible for clients to form an accurate and dependable assessment of the market.

Ticker	Company Name	Page	Ticker	Company Name	Page	Ticker	Company Name	Page	Ticker	Company Name	Page	Ticker	Company Name	Page
MMM	3M Co	43	BAC	Bk of America Corp	17	XRAY	Dentsply Sirona Inc	63	GE	General Electric Co	32	LHX	L3Harris Technologies Inc	40
ABT	Abbott Labs	12	BLK	Blackrock Inc	19	DVN	Devon Energy Corp New	26	GIS	General Mls Inc	32	LH	Laboratory Corp Amer Hldgs	40
ABBV	Abbvie Inc	12	BA	Boeing Co	17	DXCM	Dexcom Inc	27	GM	General Mtrs Co	32	LRCX	Lam Research Corp	41
ABMD	Abiomed Inc	12	BKNG	Booking Holdings Inc	18	FANG	Diamondback Energy Inc	30	GPC	Genuine Parts Co	33	LW	Lamb Weston Hldgs Inc	41
ACN	Accenture Plc Ireland	12	BWA	Borgwarner Inc	19	DLR	Digital Rlty Tr Inc	25	GILD	Gilead Sciences Inc	32	LVS	Las Vegas Sands Corp	41
ATVI	Activision Blizzard Inc	17	BXP	Boston Properties Inc	19	DFS	Discover Finl Svcs	25	GPN	Global Pmts Inc	33	EL	Lauder Estee Cos Inc	27
ADBE	Adobe Systems Incorporated	13	BSX	Boston Scientific Corp	19	DISH	Dish Network Corporation	25	GL	Globe Life Inc	32	LEG	Leggett & Platt Inc	40
AAP	Advance Auto Parts Inc	12	BMJ	Bristol-Myers Squibb Co	19	DIS	Disney Walt Co	25	GS	Goldman Sachs Group Inc	33	LDOS	Leidos Holdings Inc	40
AMD	Advanced Micro Devices Inc	15	AVGO	Broadcom Inc	17	DG	Dollar Gen Corp New	25	GWW	Grainger W W Inc	33	LEN	Lennar Corp	40
AES	Aes Corp	13	BR	Broadridge Finl Solutions Inc	19	DLTR	Dollar Tree Inc	26	HAL	Halliburton Co	33	LLY	Lilly Eli & Co	40
AFL	Aflac Inc	13	BFB	Brown Forman Corp	18	D	Dominion Energy Inc	24	HBI	Hanesbrands Inc	33	LNC	Lincoln Natl Corp Ind	41
A	Agilent Technologies Inc	12	CHRW	C H Robinson Worldwide Inc	21	DPZ	Dominos Pizza Inc	26	HIG	Hartford Finl Svcs Group Inc	34	LIN	Linde Plc	40
APD	Air Prods & Chems Inc	16	CDNS	Cadence Design System Inc	20	DOV	Dover Corp	26	HAS	Hasbro Inc	33	LYV	Live Nation Entertainment Inc	41
AKAM	Akamai Technologies Inc	14	CPB	Campbell Soup Co	23	DOW	Dow Inc	26	HCA	Hca Healthcare Inc	34	LKQ	Lkq Corp	40
ALK	Alaska Air Group Inc	14	COF	Capital One Finl Corp	23	DTE	Dte Energy Co	26	PEAK	Healthpeak Properties Inc	49	LMT	Lockheed Martin Corp	40
ALB	Albemarle Corp	14	CAH	Cardinal Health Inc	20	DUK	Duke Energy Corp New	26	JKHY	Henry Jack & Assoc Inc	38	L	Loews Corp	39
ARE	Alexandria Real Estate Eq Inc	16	KMX	Carmax Inc	39	DD	Dupont De Nemours Inc	24	HSIC	Henry Schein Inc	35	LOW	Lowes Cos Inc	41
ALGN	Align Technology Inc	14	CARR	Carrier Global Corporation	20	DXC	Dxc Technology Co	27	HSY	Hershey Co	35	LUMN	Lumen Technologies Inc	41
ALLE	Allegion Plc	14	CTLT	Catalent Inc	24	EMN	Eastman Chem Co	28	HES	Hess Corp	34	MTB	M & T Bk Corp	45
LNT	Alliant Energy Corp	41	CAT	Caterpillar Inc	20	ETN	Eaton Corp Plc	28	HPE	Hewlett Packard Enterprise Co	34	MRO	Marathon Oil Corp	44
ALL	Allstate Corp	14	CBOE	Cboe Global Mkts Inc	20	EBAY	Ebay Inc.	27	HLT	Hilton Worldwide Hldgs Inc	34	MPC	Marathon Pete Corp	44
GOOG	Alphabet Inc	32	CBRE	Cbre Group Inc	20	ECL	Ecolab Inc	27	HOLX	Hologic Inc	34	MKTX	Marketaxess Hldgs Inc	43
GOOGL	Alphabet Inc	32	CDW	Cdw Corp	20	EIX	Edison Intl	27	HD	Home Depot Inc	34	MAR	Marriott Intl Inc New	42
MO	Altria Group Inc	44	CE	Celanese Corp Del	21	EW	Edwards Lifesciences Corp	29	HON	Honeywell Intl Inc	34	MMC	Marsh & McLennan Cos Inc	43
AMZN	Amazon Com Inc	15	CNC	Centene Corp Del	17	EA	Electronic Arts Inc	27	HRL	Hormel Foods Corp	35	MLM	Martin Marietta Matls Inc	43
AMCR	Amcor Plc	15	CNP	Centerpoint Energy Inc	22	EMR	Emerson Elec Co	28	HST	Host Hotels & Resorts Inc	35	MAS	Masco Corp	42
AEE	Ameren Corp	13	CF	Cf Inds Hldgs Inc	21	ENPH	Enphase Energy Inc	28	HWM	Howmet Aerospace Inc	35	MA	Mastercard Incorporated	42
AAL	American Airls Group Inc	12	CHTR	Charter Communications Inc New	21	ETR	Entergy Corp New	29	HPQ	Hp Inc	35	MKC	McCormick & Co Inc	43
AEP	American Elec Pwr Co Inc	13	CVX	Chevron Corp New	24	EOG	Eog Res Inc	28	HUM	Humana Inc	35	MCD	McDonalds Corp	42
AXP	American Express Co	17	CMG	Chipotle Mexican Grill Inc	22	EFX	Equifax Inc	27	JBHT	Hunt J B Trans Svcs Inc	38	MCK	McKesson Corp	42
AIG	American Intl Group Inc	14	CHD	Church & Dwight Co Inc	21	EQIX	Equinix Inc	28	HBAN	Huntington Bancshares Inc	33	MDT	Medtronic Plc	43
AMT	American Tower Corp New	15	CI	Cigna Corp New	21	EQR	Equity Residential	28	HII	Huntington Ingalls Inds Inc	34	MRK	Merck & Co Inc	44
AWK	American Wtr Wks Co Inc New	17	CINF	Cincinnati Finl Corp	21	ESS	Essex Ppty Tr Inc	28	IEX	Idex Corp	36	MET	Mettlife Inc	43
AMP	Ameriprise Finl Inc	15	CTAS	Cintas Corp	24	ETSY	Etsy Inc	29	IDXX	Idexx Labs Inc	36	MTD	Mettler Toledo International	45
ABC	Amerisourcebergen Corp	12	CSCO	Cisco Sys Inc	23	RE	Everest Re Group Ltd	52	ITW	Illinois Tool Wks Inc	37	MGM	Mgm Resorts International	43
AME	Ametek Inc	15	C	Citigroup Inc	19	EVRG	Evergy Inc	29	ILMN	illumina Inc	36	MCHP	Microchip Technology Inc.	42
AMGN	Amgen Inc	15	CFG	Citizens Finl Group Inc	21	ES	Eversource Energy	28	INCY	Incyte Corp	36	MU	Micron Technology Inc	45
APH	Amphenol Corp New	16	CLX	Clorox Co Del	22	EXC	Exelon Corp	29	IR	Ingersoll Rand Inc	37	MSFT	Microsoft Corp	45
ADI	Analog Devices Inc	13	CME	Cme Group Inc	22	EXPE	Expedia Group Inc	29	INTC	Intel Corp	36	MAA	Mid-Amer Apt Cmnty Inc	42
ANSS	Ansys Inc	16	CMS	Cms Energy Corp	22	EXPD	Expeditors Intl Wash Inc	29	ICE	Intercontinental Exchange Inc	35	MHK	Mohawk Inds Inc	43
AON	Aon Plc	16	KO	Coca Cola Co	39	EXR	Extra Space Storage Inc	29	IBM	International Business Machs	35	TAP	Molson Coors Beverage Co	56
APA	Apa Corporation	16	CTSH	Cognizant Technology Solutions	24	XOM	Exxon Mobil Corp	63	IFF	International Flavors&Fragranc	36	MDLZ	Mondelez Intl Inc	42
AAPL	Apple Inc	12	CL	Colgate Palmolive Co	21	FFIV	F5 Inc	30	IP	International Paper Co	36	MPWR	Monolithic Pwr Sys Inc	44
AMAT	Applied Matls Inc	15	CMCSA	Comcast Corp New	22	FAST	Fastenal Co	30	IPG	Interpublic Group Cos Inc	36	MNST	Monster Beverage Corp New	44
APTV	Aptiv Plc	16	CMA	Comerica Inc	22	FRT	Federal Rlty Invt Tr New	31	INTU	Intuit	36	MCO	Moody's Corp	42
ADM	Archer Daniels Midland Co	13	CAG	Conagra Brands Inc	20	FDX	Fedex Corp	30	ISRG	Intuitive Surgical Inc	37	MS	Morgan Stanley	44
ANET	Arista Networks Inc	15	COP	Conocophillips	23	FIS	Fidelity Natl Information Svcs	30	IVZ	Invesco Ltd	37	MOS	Mosaic Co New	44
AIZ	Assurant Inc	14	ED	Consolidated Edison Inc	27	FITB	Fifth Third Bancorp	31	IPGP	Ipg Photonics Corp	37	MSI	Motorola Solutions Inc	45
T	At&T Inc	56	STZ	Constellation Brands Inc	56	FRC	First Rep Bk San Francisco Cal	31	IQV	Iqvia Hldgs Inc	37	MSCI	Msci Inc	44
ATO	Atmos Energy Corp	16	COO	Cooper Cos Inc	23	FE	Firstenergy Corp	30	IRM	Iron Mtn Inc Del	37	NDAQ	Nasdaq Inc	45
ADSK	Autodesk Inc	13	CPRT	Copart Inc	23	FISV	Fiserv Inc	30	J	Jacobs Solutions Inc	37	NTAP	Netapp Inc	47
ADP	Automatic Data Processing Inc	13	GLW	Corning Inc	32	FLT	Fleetcor Technologies Inc	31	JNJ	Johnson & Johnson	38	NFLX	Netflix Inc	46
AZO	Autozone Inc	17	CTVA	Corteva Inc	24	FLS	Flowserve Corp	31	JCI	Johnson Ctls Intl Plc	38	NWL	Newell Brands Inc	47
AVB	Avalonbay Cmnty Inc	17	COST	Costco Whsl Corp New	23	FMC	Fmc Corp	31	JPM	Jpmorgan Chase & Co	38	NEM	Newmont Corp	45
AVY	Avery Dennison Corp	17	CCI	Crown Castle Inc	20	F	Ford Mtr Co Del	29	JNPR	Juniper Networks Inc	38	NWS	News Corp New	47
BKR	Baker Hughes Company	19	CSX	Csx Corp	23	FTNT	Fortinet Inc	31	K	Kellogg Co	38	NWSA	News Corp New	47
BK	Bank New York Mellon Corp	18	CMI	Cummins Inc	22	FTV	Fortive Corp	31	KEY	Keycorp	38	NEE	Nextera Energy Inc	45
BAX	Baxter Intl Inc	18	CVS	Cvs Health Corp	24	FBHS	Fortune Brands Home & Sec Inc	30	KEYS	Keysight Technologies Inc	38	NLSN	Nielsen Hldgs Plc	46
BDX	Becton Dickinson & Co	18	DHI	D R Horton Inc	25	BEN	Franklin Resources Inc	18	KMB	Kimberly-Clark Corp	39	NKE	Nike Inc	46
WRB	Berkley W R Corp	63	DHR	Danaher Corporation	25	FCX	Freeport-Mcmoran Inc	30	KIM	Kimco Rlty Corp	39	NI	Nisource Inc	46
BRK.B	Berkshire Hathaway Inc Del	19	DRI	Darden Restaurants Inc	26	AJG	Gallagher Arthur J & Co	14	KMI	Kinder Morgan Inc Del	39	NSC	Norfolk Southn Corp	47
BBY	Best Buy Inc	18	DVA	Davita Inc	26	GPS	Gap Inc	33	KLAC	Kla Corp	39	NTRS	Northern Tr Corp	47
BIO	Bio Rad Labs Inc	18	DE	Deere & Co	25	IT	Gartner Inc	37	KHC	Kraft Heinz Co	39	NOC	Northrop Grumman Corp	46
BIIB	Biogen Inc	18	DAL	Delta Air Lines Inc Del	24	GD	General Dynamics Corp	32	KR	Kroger Co	39	NLOK	Nortonliflock Inc	46

Ticker	Company Name	Page	Ticker	Company Name	Page	Ticker	Company Name	Page		
NCLH	Norwegian Cruise Line Hldg Ltd	45	SCHW	Schwab Charles Corp	54	VNT	Vontier Corporation	61		
NOV	Nov Inc	46	STX	Seagate Technology Hldngs Plc	55	VNO	Vornado Rlty Tr	61		
NRG	Nrg Energy Inc	46	SEE	Sealed Air Corp New	54	VMC	Vulcan Matls Co	60		
NUE	Nucor Corp	47	SRE	Semptra	55	WAB	Wabtec	61		
NVDA	Nvidia Corporation	47	NOW	Servicenow Inc	46	WBA	Walgreens Boots Alliance Inc	62		
NVR	Nvr Inc	47	SHW	Sherwin Williams Co	54	WMT	Walmart Inc	62		
OXY	Occidental Pete Corp	48	SPG	Simon Ppty Group Inc New	55	WM	Waste Mgmt Inc Del	62		
ODFL	Old Dominion Freight Line Inc	48	SWKS	Skyworks Solutions Inc	56	WAT	Waters Corp	61		
OMC	Omnicom Group Inc	48	SLG	Sl Green Rlty Corp	54	WEC	Wec Energy Group Inc	62		
OKE	Oneok Inc New	48	AOS	Smith A O Corp	16	WFC	Wells Fargo Co New	62		
ORCL	Oracle Corp	48	SJM	Smucker J M Co	54	WELL	Welltower Inc	62		
ORLY	Oreilly Automotive Inc	48	SNA	Snap On Inc	55	WST	West Pharmaceutical Svsc Inc	63		
OTIS	Otis Worldwide Corp	48	SO	Southern Co	55	WDC	Western Digital Corp.	62		
PCAR	Paccar Inc	49	LUV	Southwest Airls Co	41	WU	Western Un Co	63		
PKG	Packaging Corp Amer	50	SWK	Stanley Black & Decker Inc	56	WRK	Westrock Co	63		
PH	Parker-Hannifin Corp	50	SBUX	Starbucks Corp	54	WY	Weyerhaeuser Co Mtn Be	63		
PAYX	Paychex Inc	49	STT	State Str Corp	55	WHR	Whirlpool Corp	62		
PAYC	Paycom Software Inc	48	STE	Steris Plc	55	WMB	Williams Cos Inc	62		
PYPL	Paypal Hldgs Inc	52	SYK	Stryker Corporation	56	WYNN	Wynn Resorts Ltd	63		
PNR	Pentair Plc	50	SIVB	Svb Financial Group	54	XEL	Xcel Energy Inc	63		
PEP	Pepsico Inc	49	SYF	Synchrony Financial	56	XRX	Xerox Holdings Corp	64		
PKI	Perkinelmer Inc	50	SNPS	Synopsys Inc	55	XYL	Xylem Inc	64		
PRGO	Perrigo Co Plc	51	SYT	Sysco Corp	56	YUM	Yum Brands Inc	64		
PFE	Pfizer Inc	49	TTWO	Take-Two Interactive Software	58	ZBRA	Zebra Technologies Corporation	64		
PM	Philip Morris Intl Inc	50	TPR	Tapestry Inc	57	ZBH	Zimmer Biomet Holdings Inc	64		
PSX	Phillips 66	51	TGT	Target Corp	57	ZION	Zions Bancorporation N A	64		
PNW	Pinnacle West Cap Corp	50	TDY	Teledyne Technologies Inc	57	ZTS	Zoetis Inc	64		
PXD	Pioneer Nat Res Co	52	TFX	Teleflex Incorporated	57					
PNC	Pnc Finl Svcs Group Inc	50	TER	Teradyne Inc	57					
POOL	Pool Corp	51	TSLA	Tesla Inc	58					
PPG	Ppg Inds Inc	51	TXN	Texas Instrs Inc	59					
PPL	Ppl Corp	51	TXT	Textron Inc	59					
TROW	Price T Rowe Group Inc	58	TMO	Thermo Fisher Scientific Inc	57					
PFG	Principal Financial Group Inc	49	TJX	Tjx Cos Inc New	57					
PG	Procter and Gamble Co	49	TMUS	T-Mobile Us Inc	57					
PGR	Progressive Corp	49	TSCO	Tractor Supply Co	58					
PLD	Prologis Inc.	50	TT	Trane Technologies Plc	58					
PRU	Prudential Finl Inc	51	TDG	Transdigm Group Inc	56					
PSA	Public Storage	51	TRV	Travelers Companies Inc	58					
PEG	Public Svc Enterprise Grp Inc	49	TRMB	Trimble Inc	58					
PHM	Pulte Group Inc	50	TFC	Truist Finl Corp	57					
PVH	Pvh Corporation	51	FOXA	Twenty First Centy Fox Inc	31					
QRVO	Qorvo Inc	52	TWTR	Twitter Inc	58					
QCOM	Qualcomm Inc	52	TYL	Tyler Technologies Inc	59					
PWR	Quanta Svcs Inc	51	TSN	Tyson Foods Inc	58					
DGX	Quest Diagnostics Inc	25	UDR	Udr Inc	59					
RL	Ralph Lauren Corp	53	ULTA	Ulta Beauty Inc	59					
RJF	Raymond James Finl Inc	53	UAA	Under Armour Inc	59					
RTX	Raytheon Technologies Corp	53	UNP	Union Pac Corp	60					
O	Realty Income Corp	48	UAL	United Airls Hldgs Inc	59					
REG	Regency Ctrs Corp	52	UPS	United Parcel Service Inc	60					
REGN	Regeneron Pharmaceuticals	52	URI	United Rentals Inc	60					
RF	Regions Financial Corp New	52	UNH	Unitedhealth Group Inc	59					
RSG	Republic Svcs Inc	53	UHS	Universal Hlth Svcs Inc	59					
RMD	Resmed Inc	53	UNM	Unum Group	60					
RHI	Robert Half Intl Inc	52	USB	Us Bancorp Del	60					
ROK	Rockwell Automation Inc	53	VFC	V F Corp	60					
ROL	Rollins Inc	53	VLO	Valero Energy Corp	60					
ROP	Roper Technologies Inc	53	VTR	Ventas Inc	61					
ROST	Ross Stores Inc	53	VRSN	Verisign Inc	61					
SPGI	S&P Global Inc	55	VRSK	Verisk Analytics Inc	61					
CRM	Salesforce Inc	23	VZ	Verizon Communications Inc	61					
SBAC	Sba Communications Corp New	54	VRTX	Vertex Pharmaceuticals Inc	61					
SLB	Schlumberger Ltd	54	V	Visa Inc	60					

The chart consists of two vertically stacked panels sharing a common x-axis representing years from 1969 to 2024.

Top Panel: S&P 500 Index

- Y-axis:** The left y-axis ranges from 500 to 50,000. The right y-axis also ranges from 500 to 50,000.
- Line:** A solid black line represents the S&P 500 index value over time.
- Trend:** The index shows a long-term upward trend, starting around 1,000 in 1969 and reaching approximately 35,000 by 2024. There are significant fluctuations, including a major peak around 1929 followed by a crash, and another peak around 2000 followed by a crash.

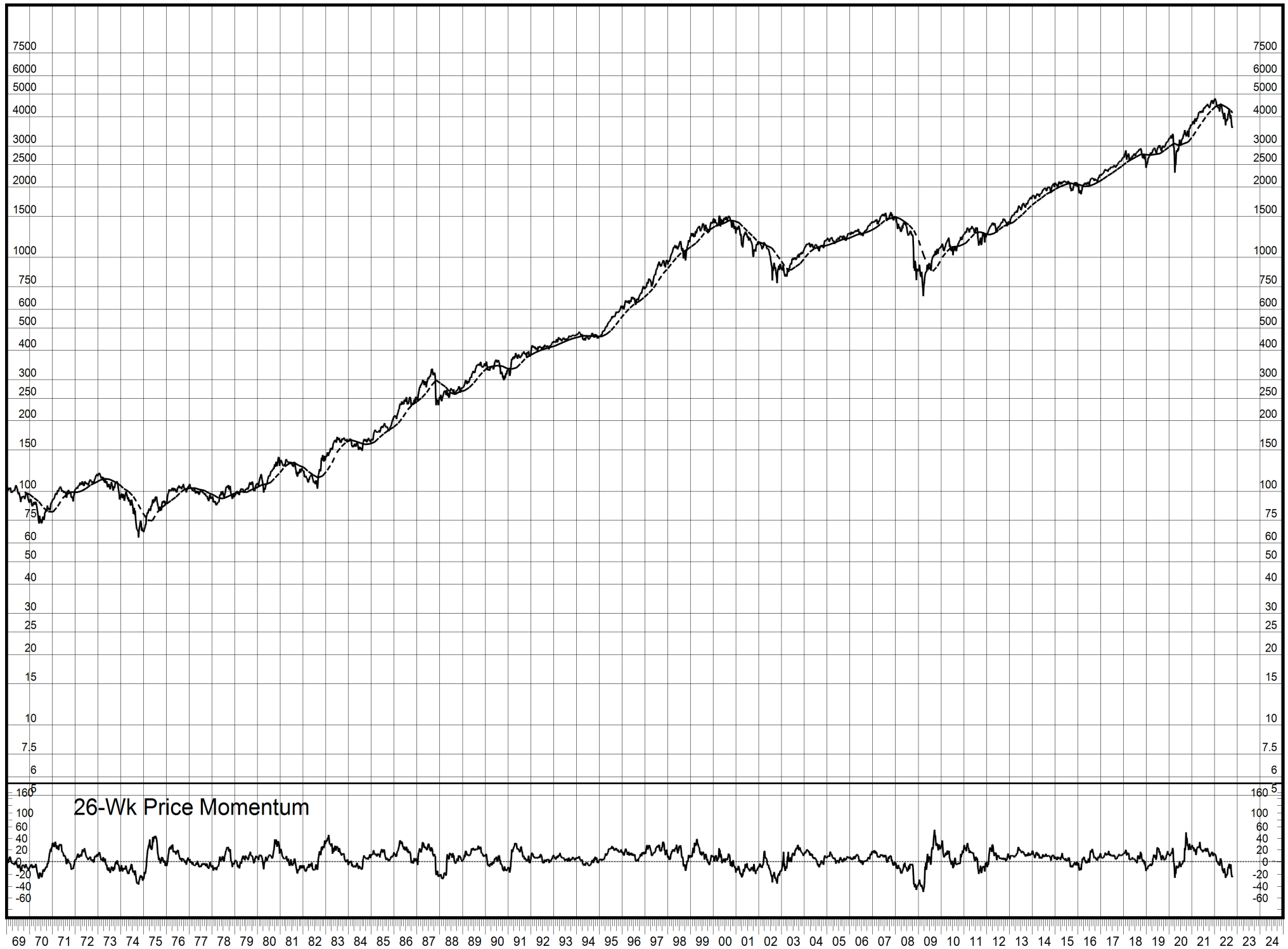
Bottom Panel: 52-Wk Price Momentum

- Y-axis:** The left y-axis ranges from -60 to 160. The right y-axis also ranges from -60 to 160.
- Line:** A solid black line represents the 52-week price momentum.
- Trend:** The momentum fluctuates around zero, indicating periods of both positive and negative momentum. It shows a significant negative momentum period around 2008-2009.

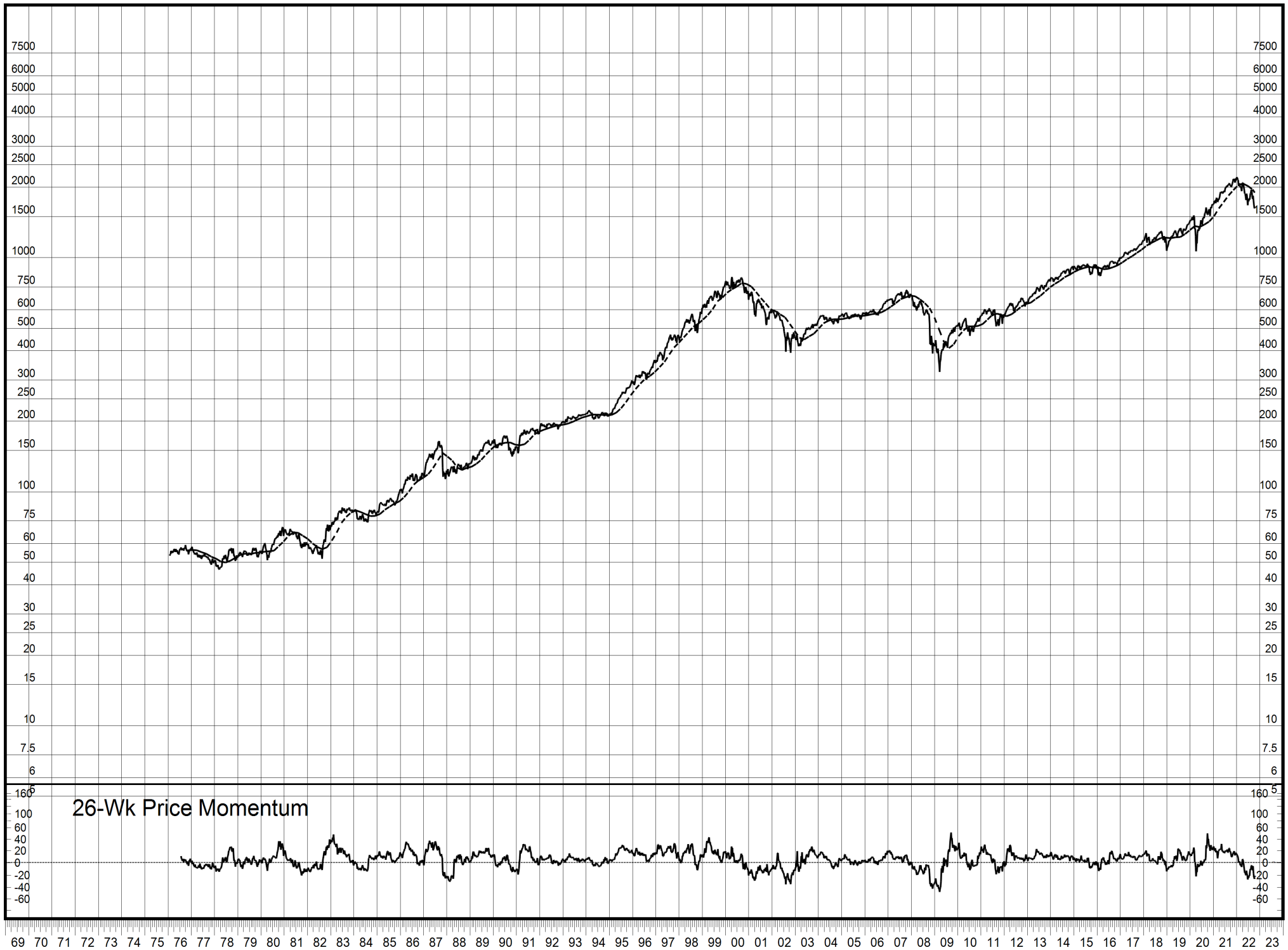
Annotations:

- The text "52-Wk Price Momentum" is located in the bottom left corner of the chart area.

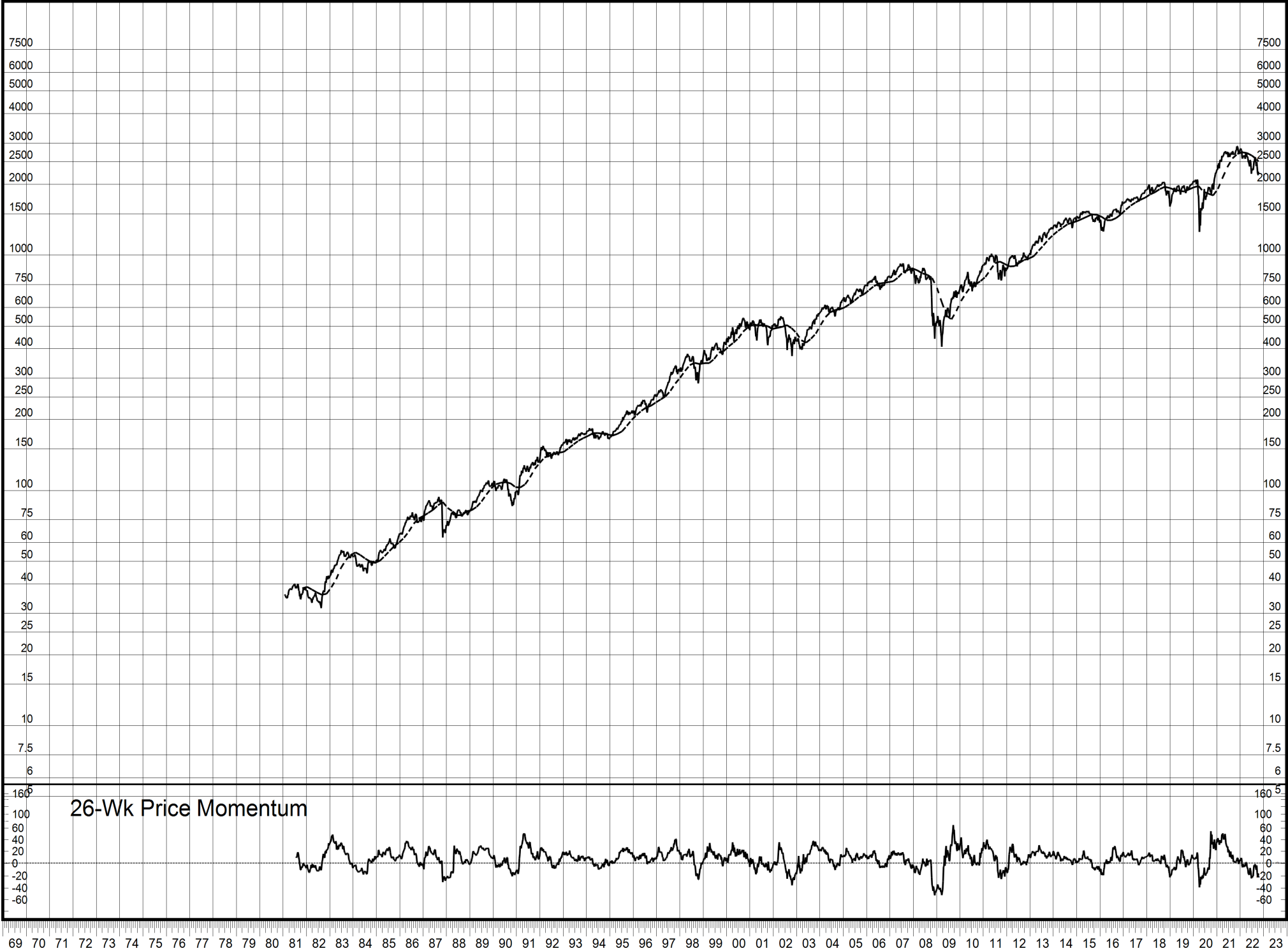
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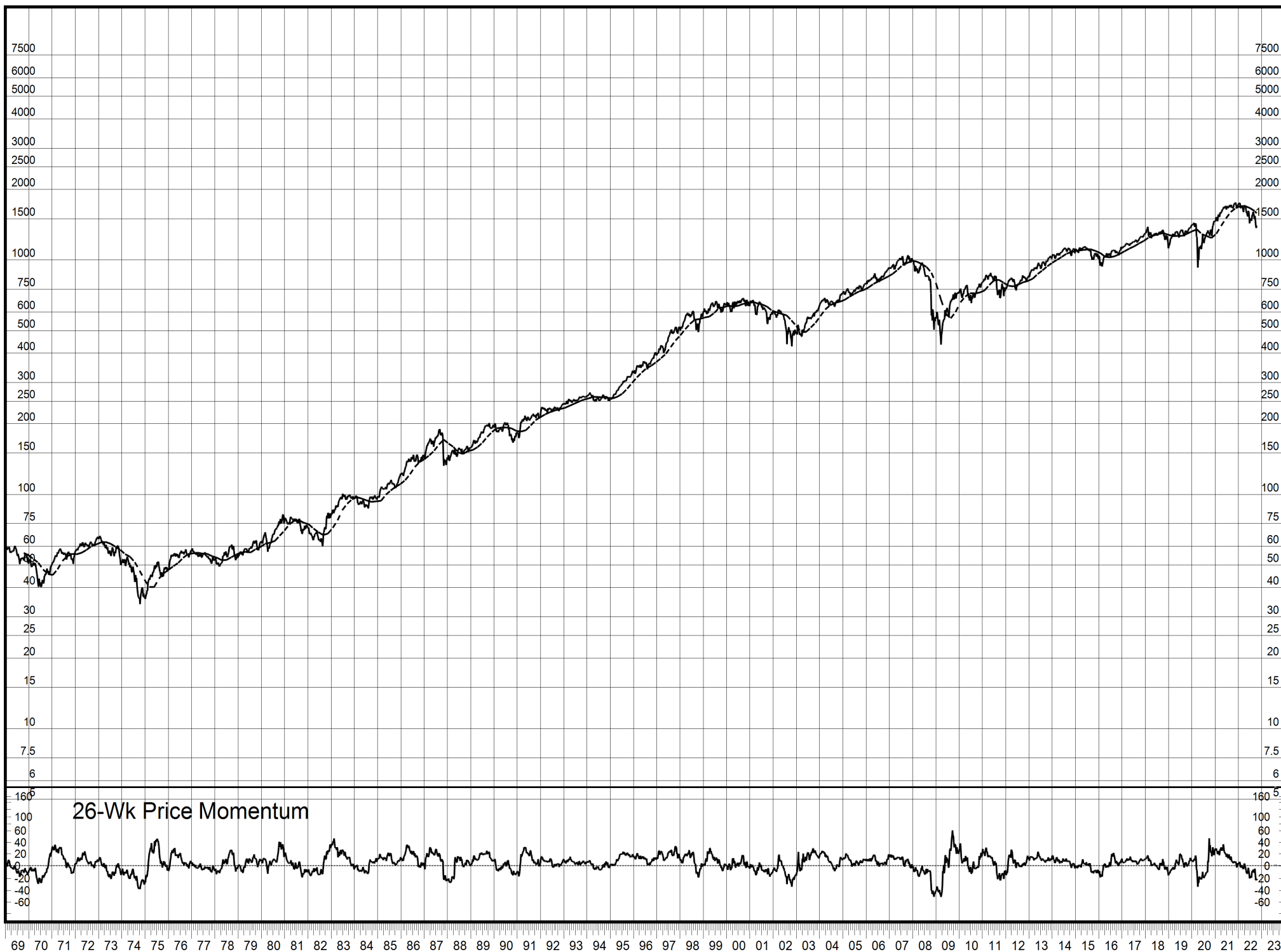
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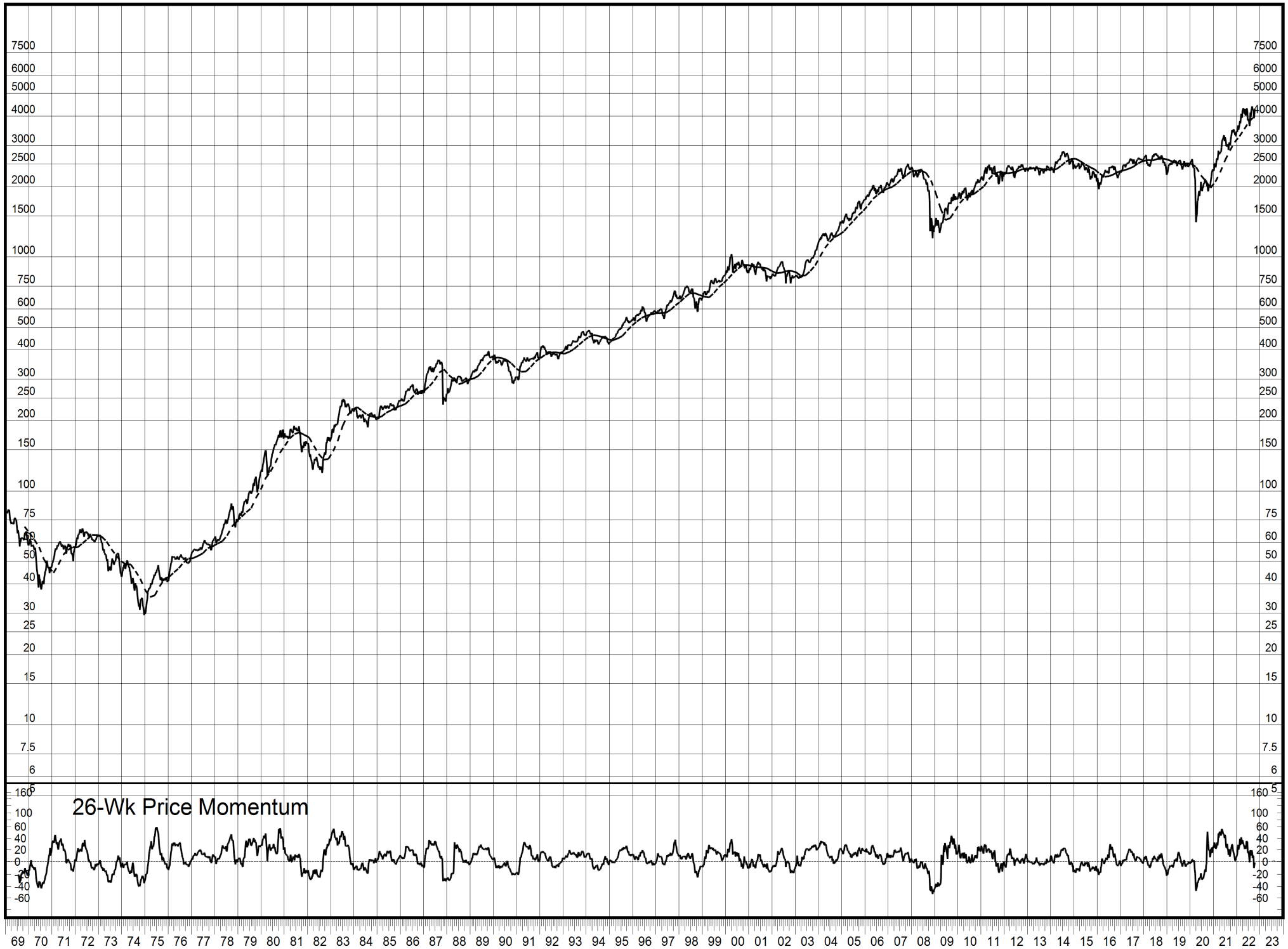
S&P 400 MidCap



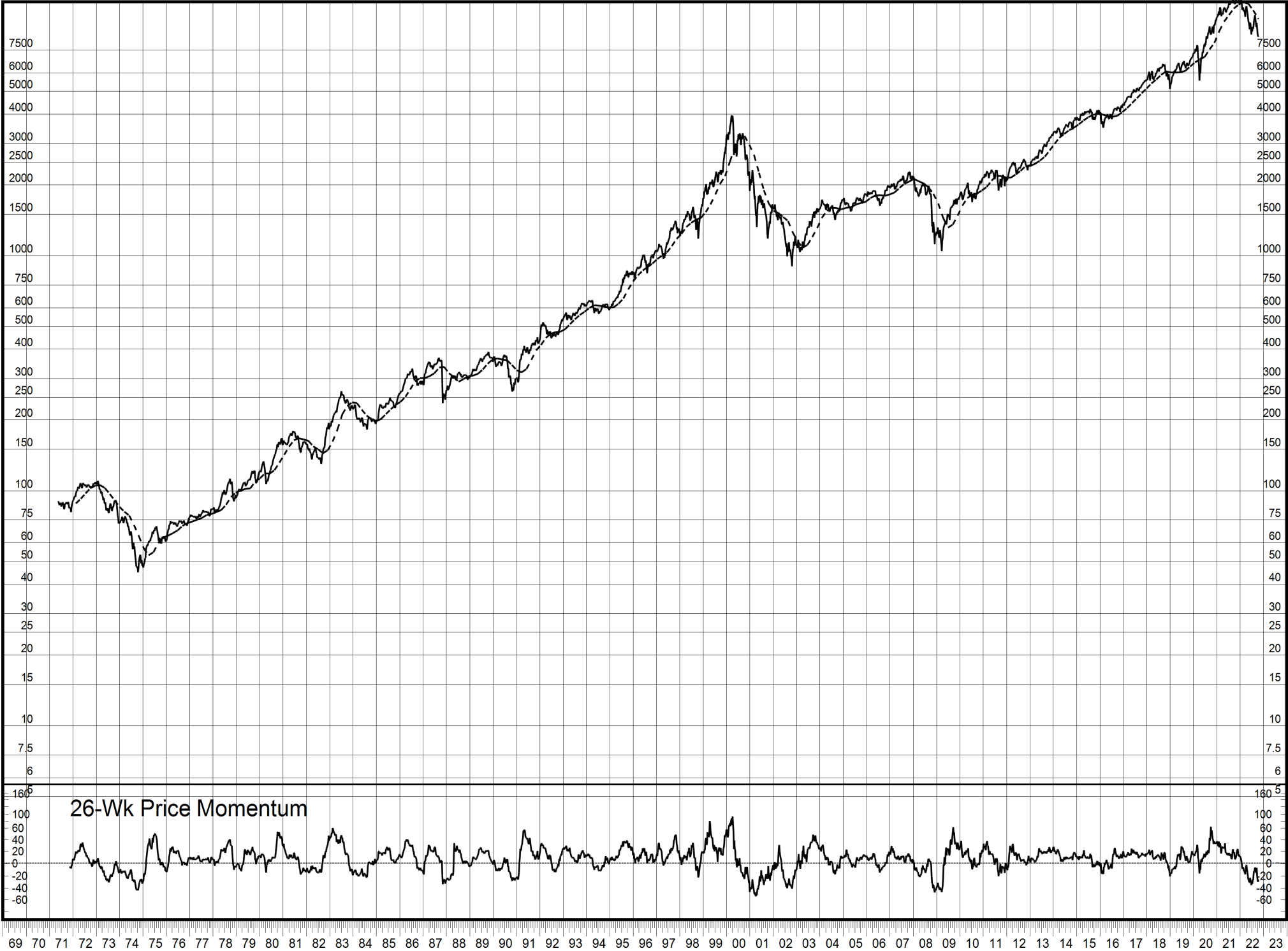
NYSE Composite

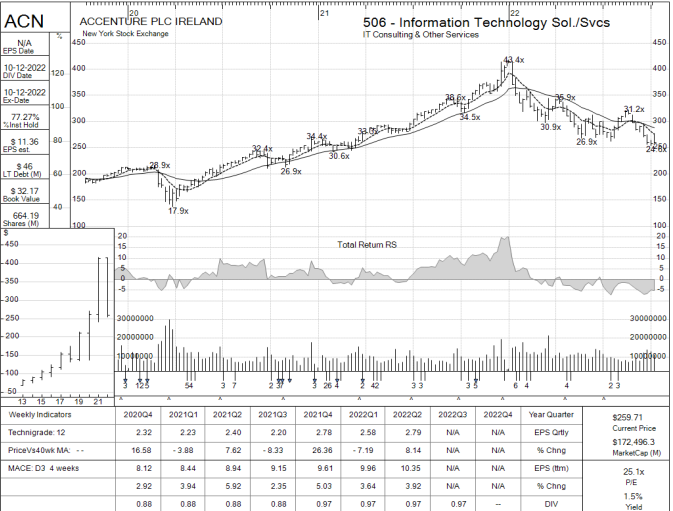
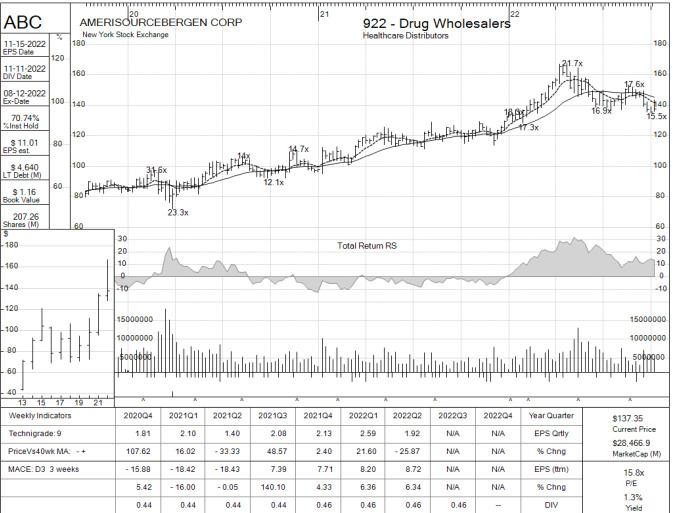
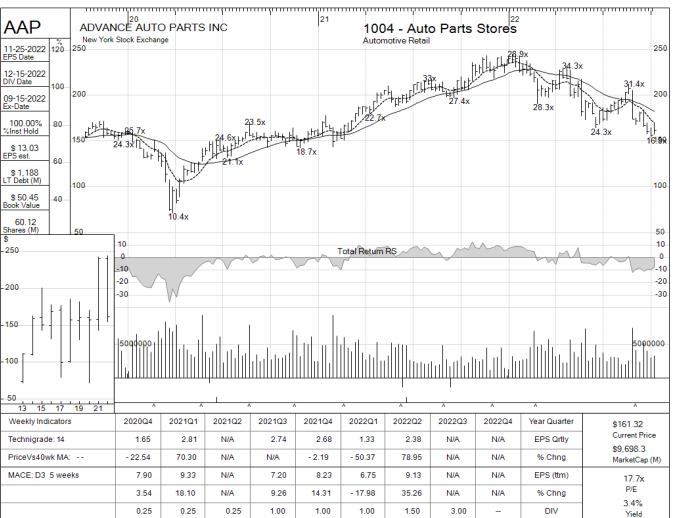


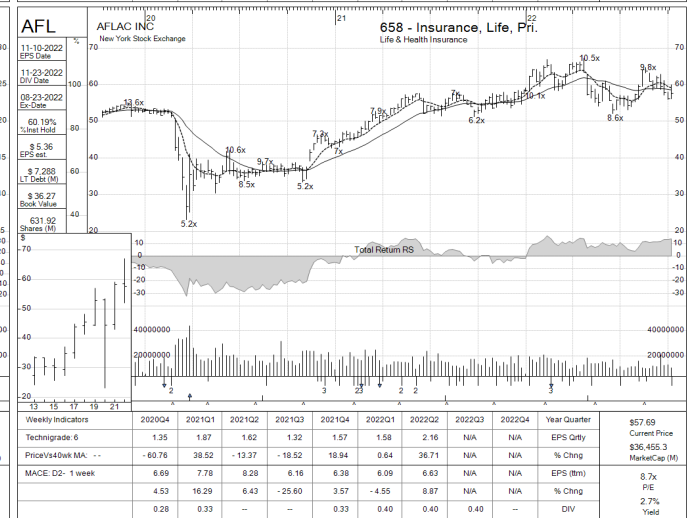
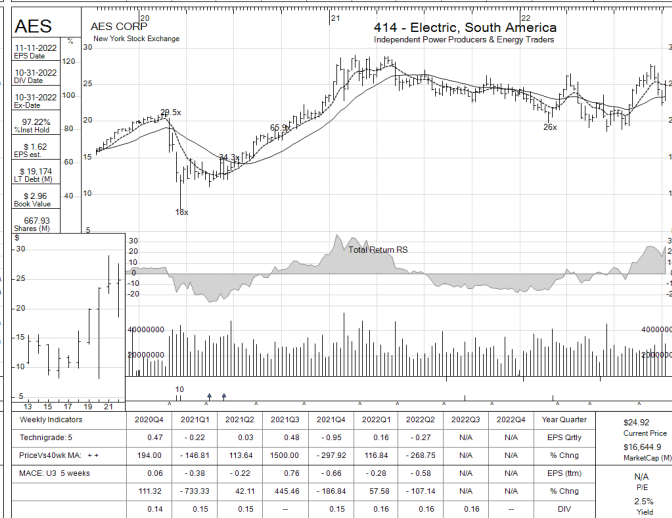
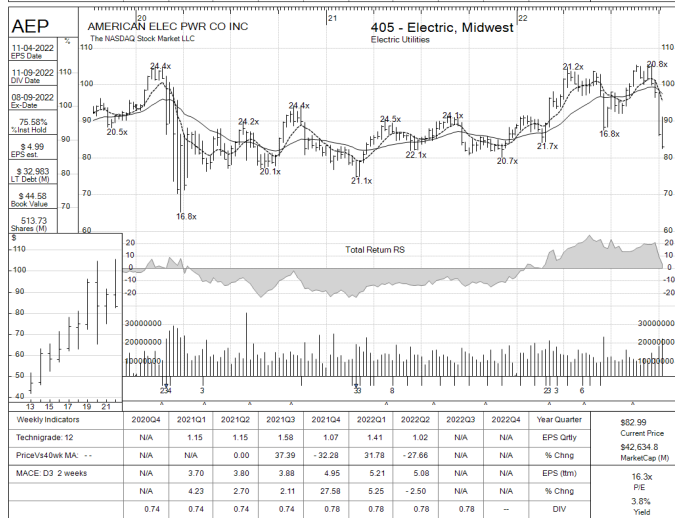
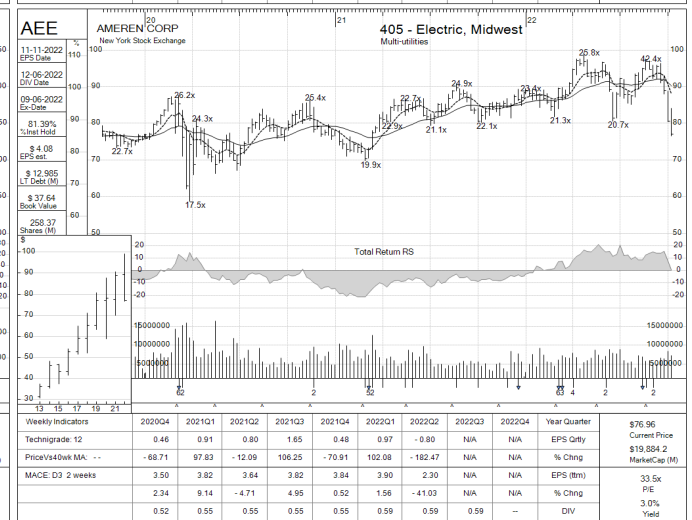
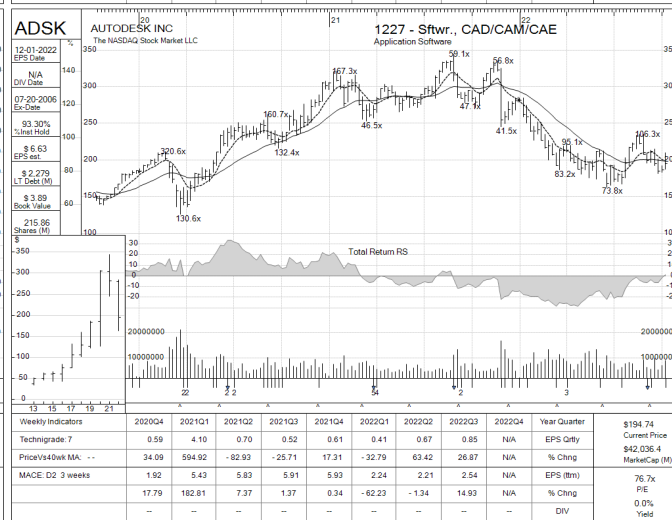
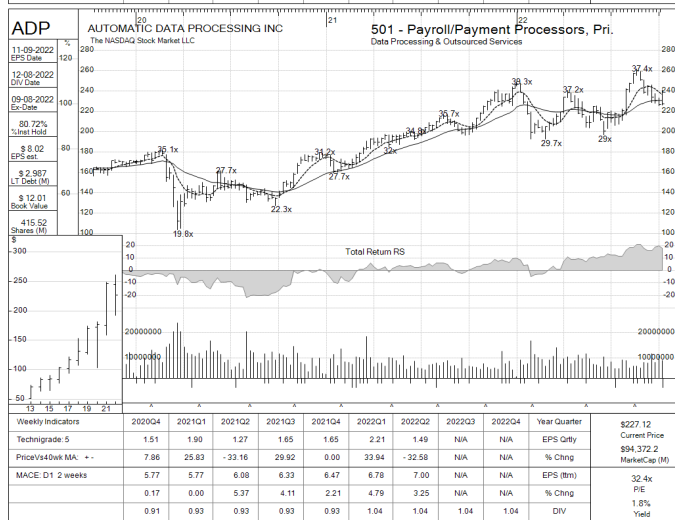
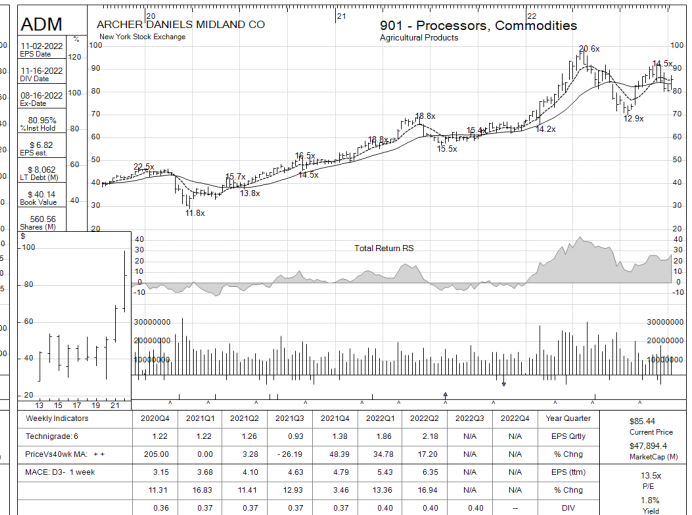
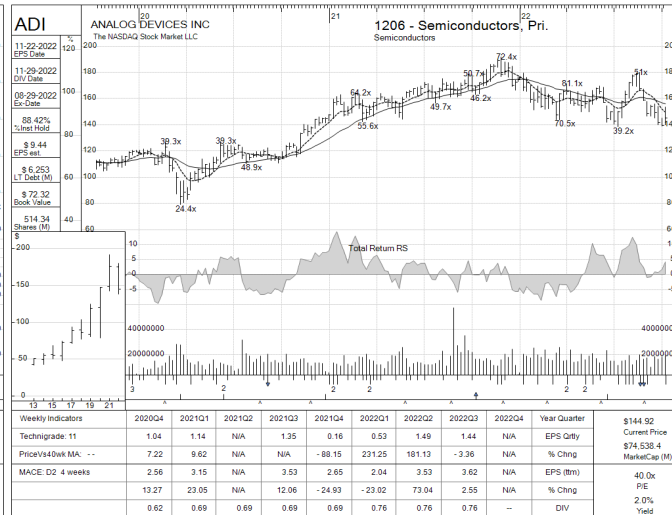
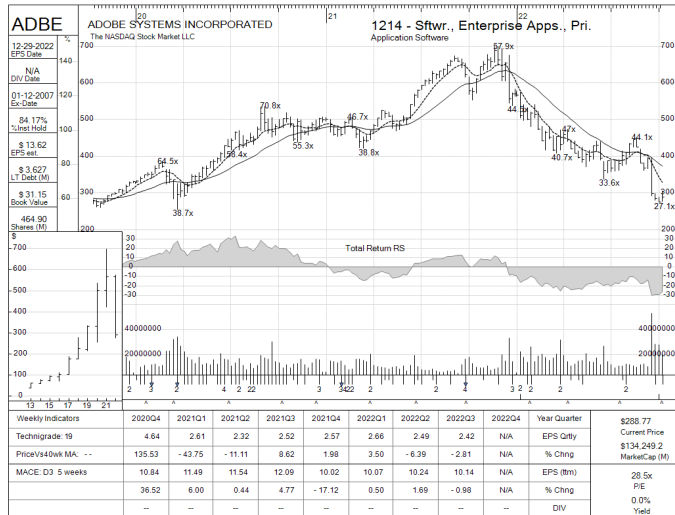
AMEX

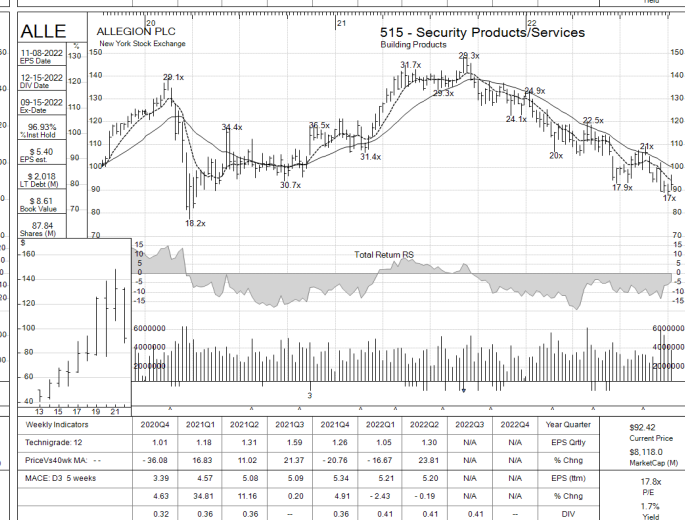
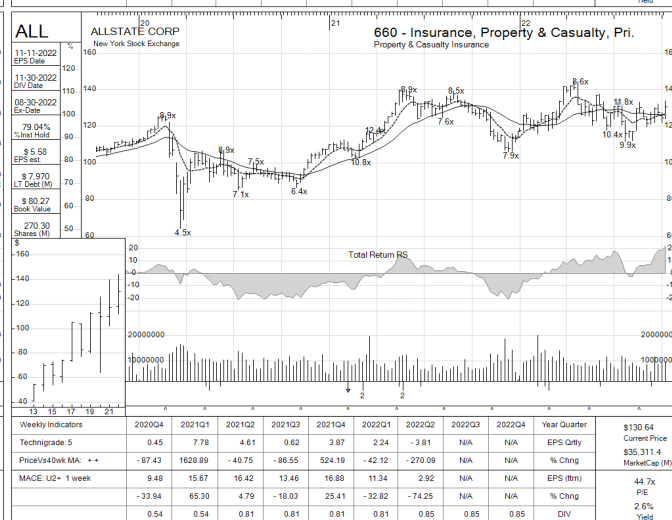
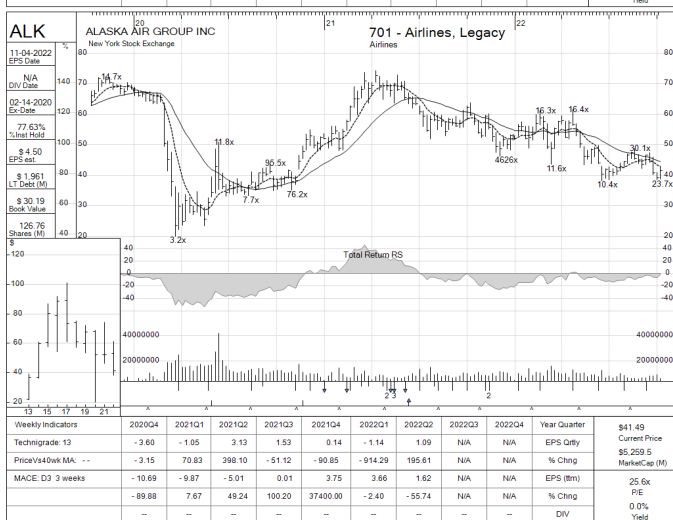
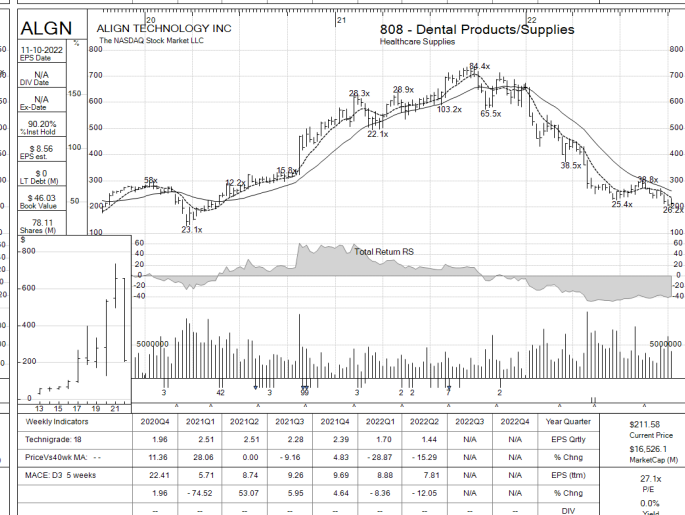
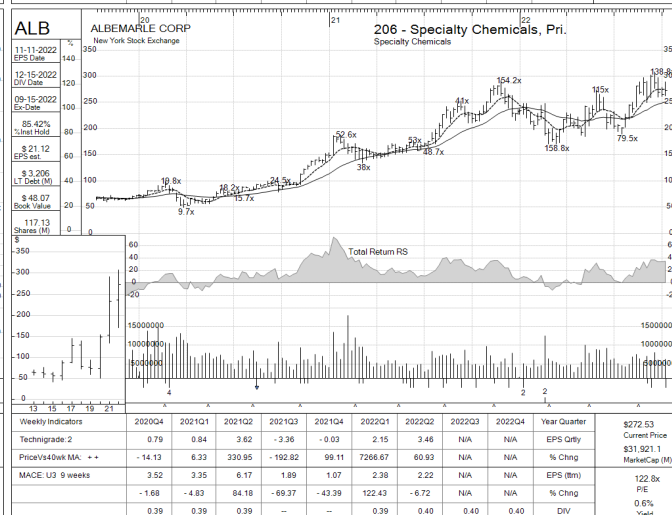
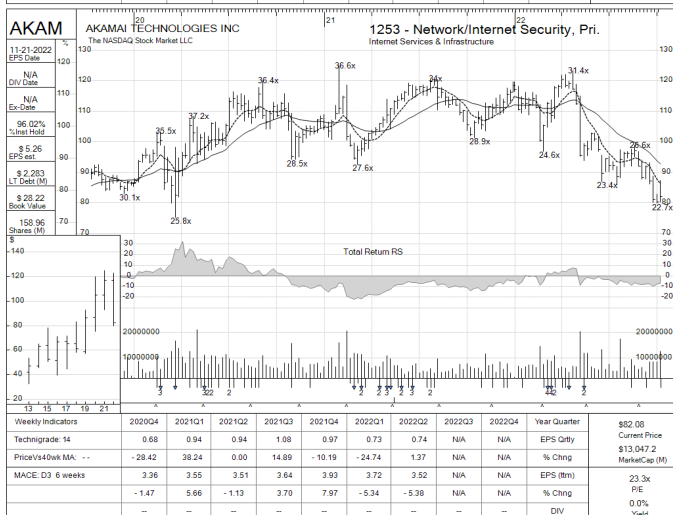
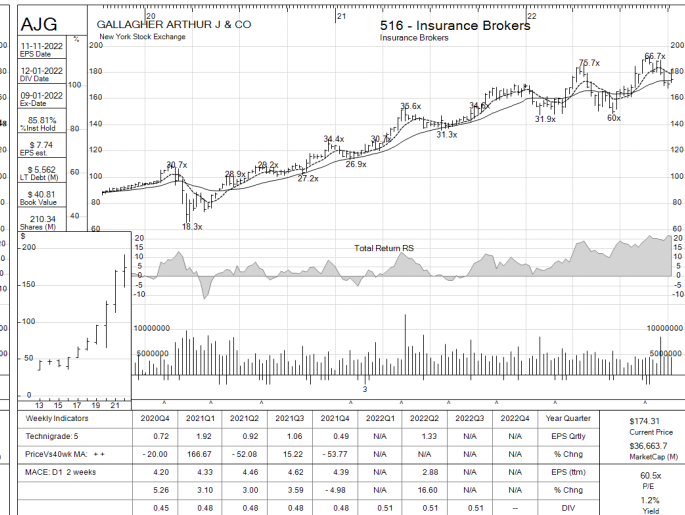
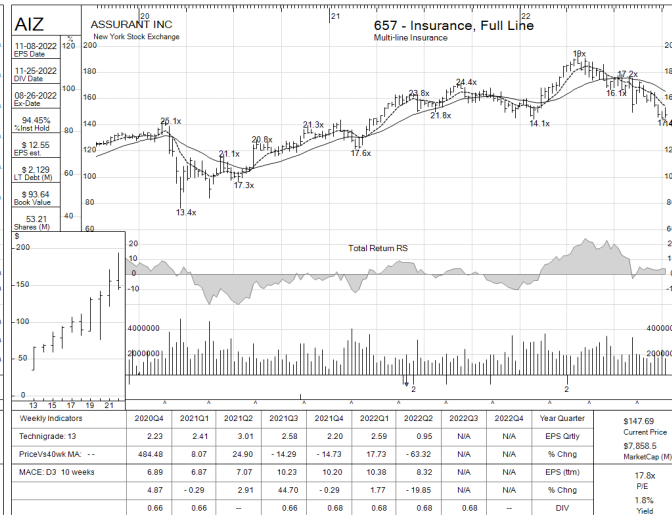
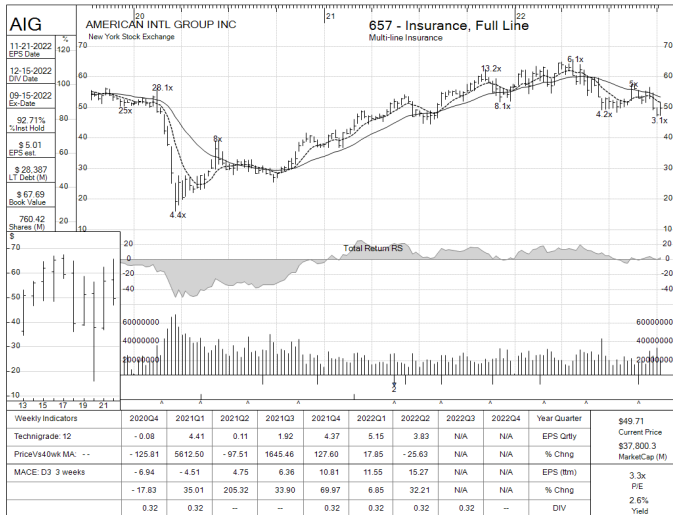


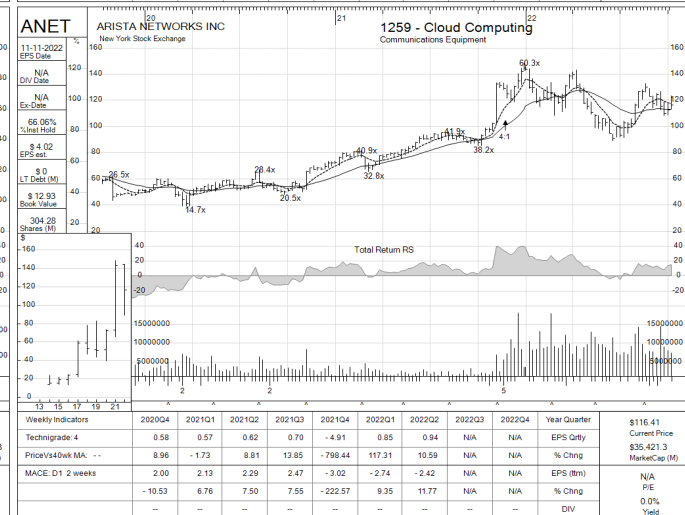
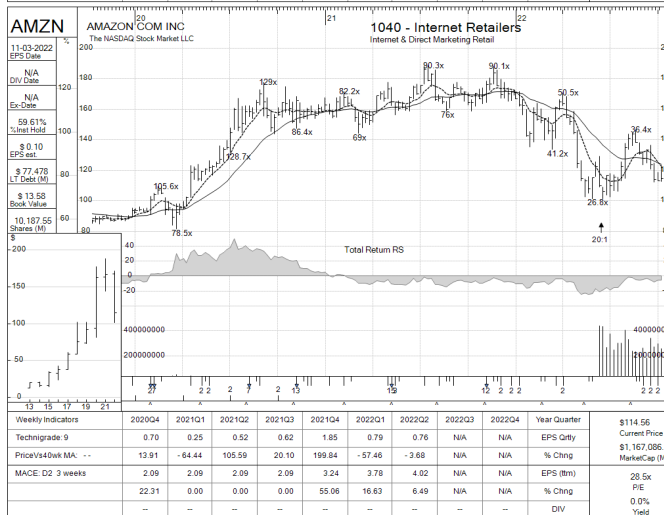
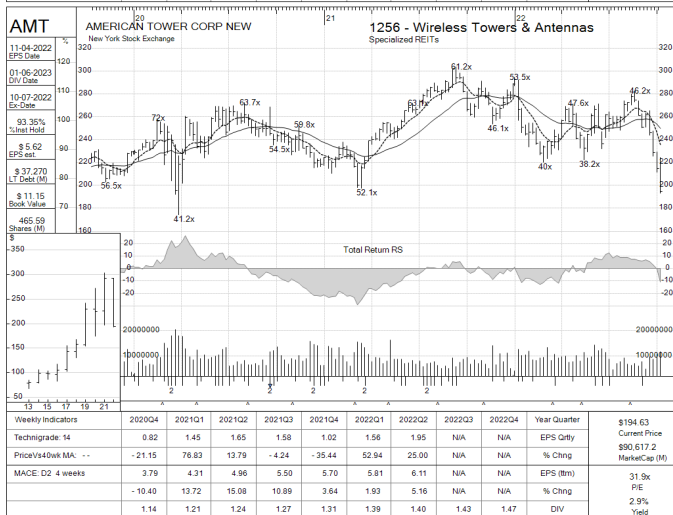
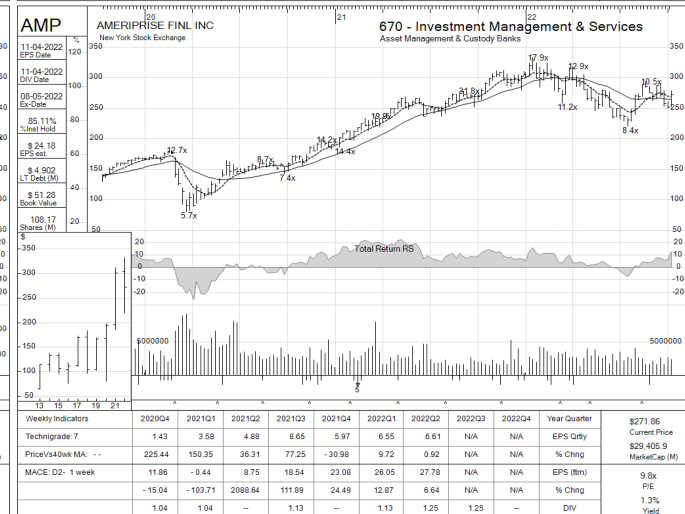
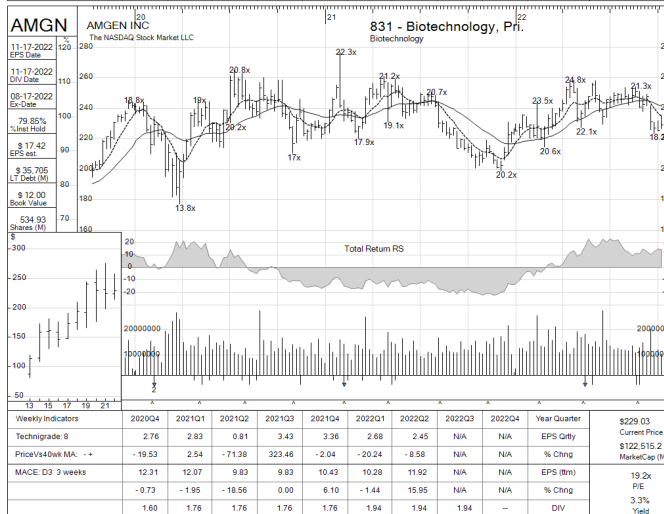
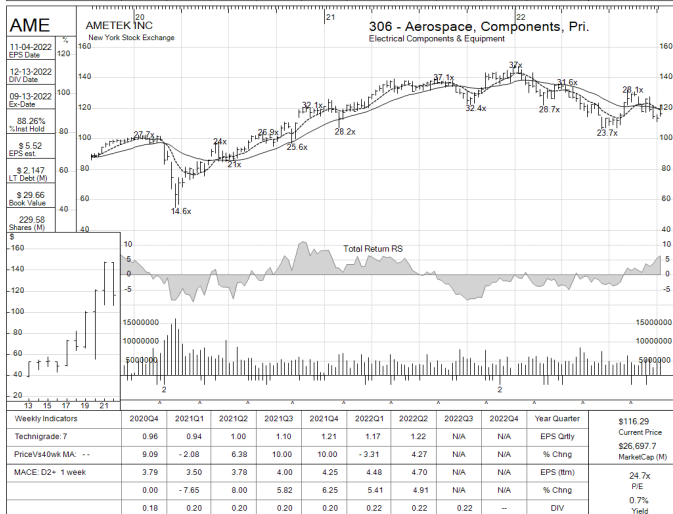
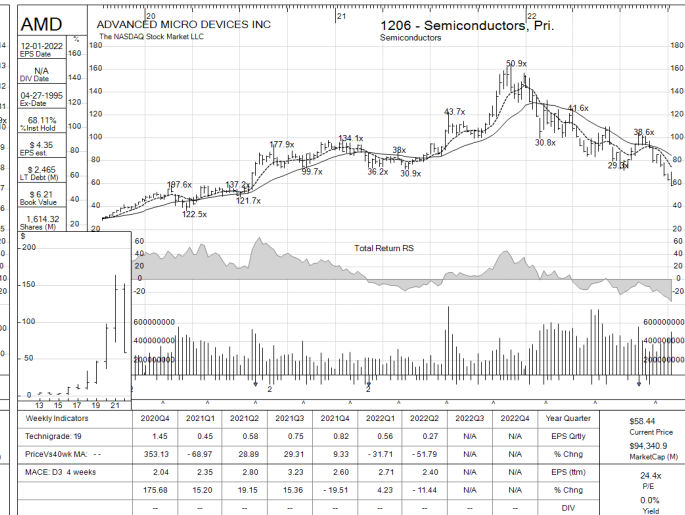
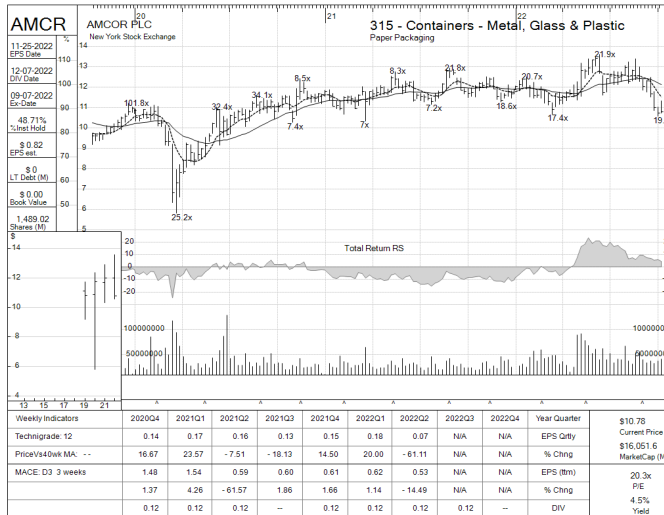
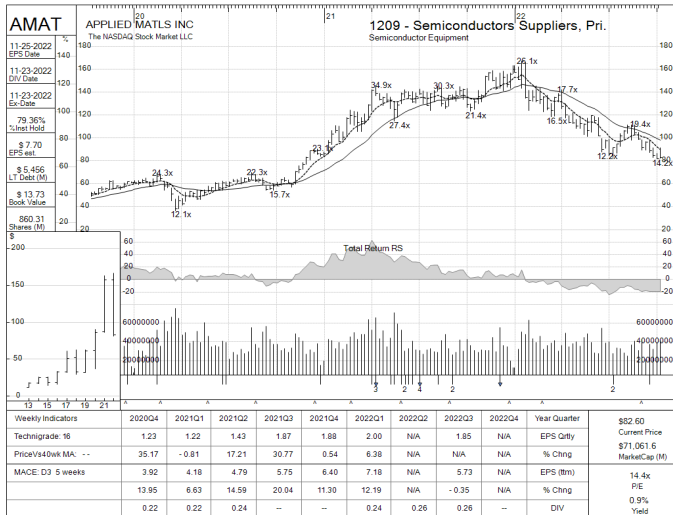
NASDAQ Composite

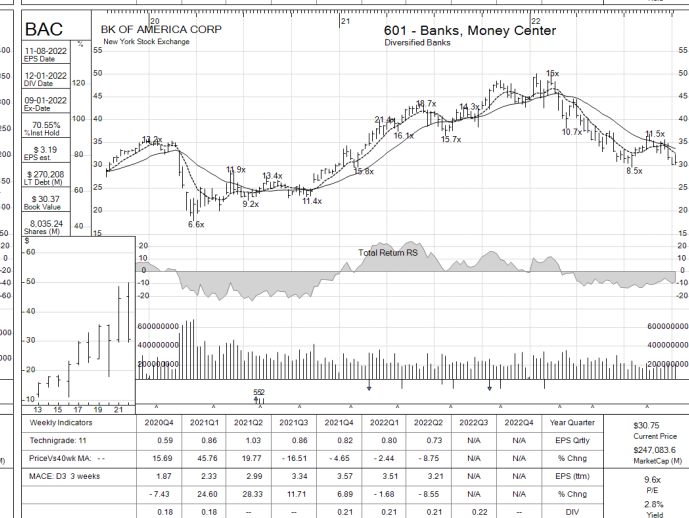
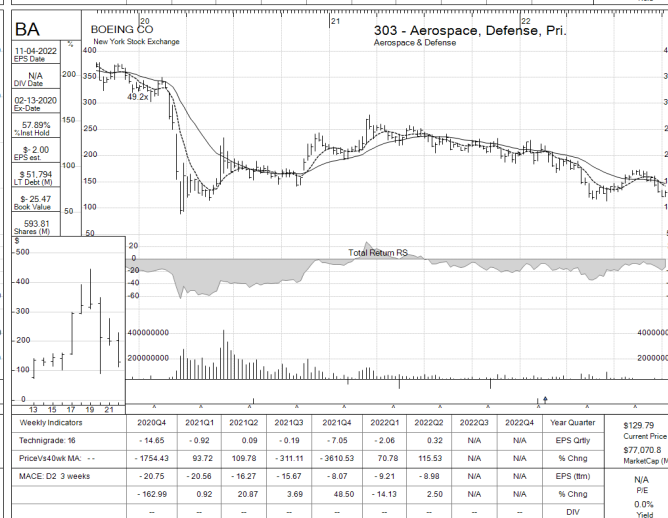
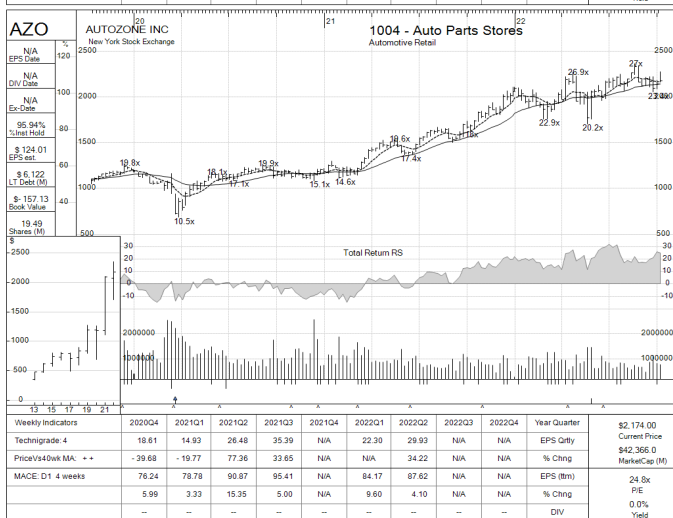
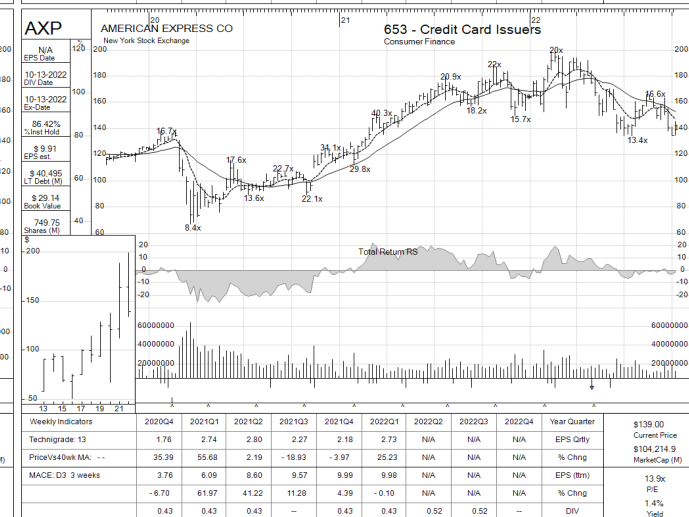
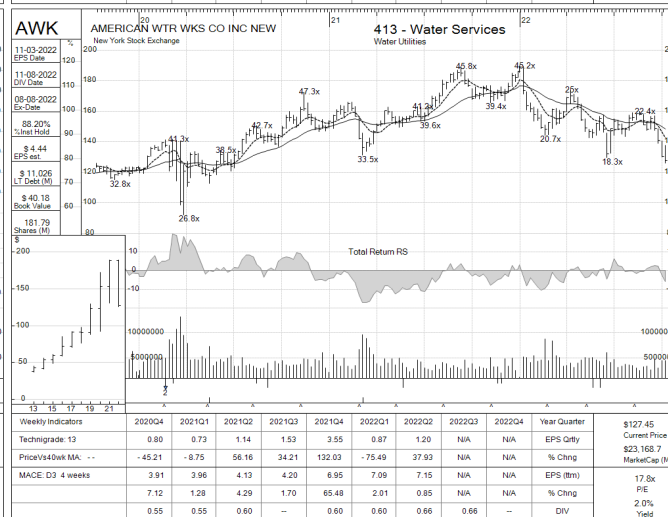
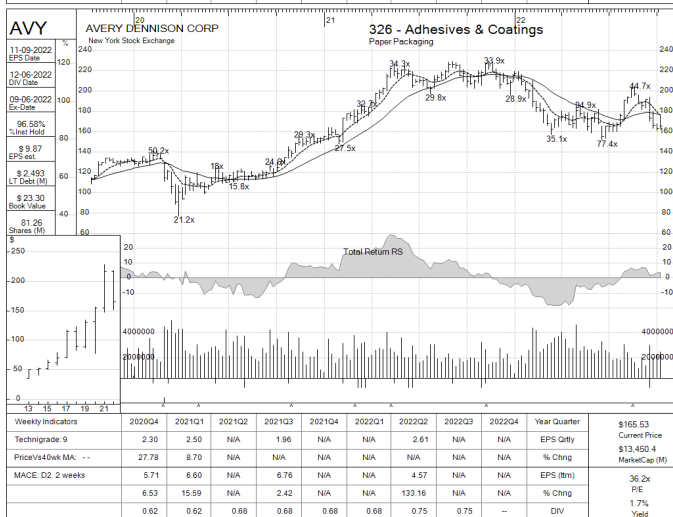
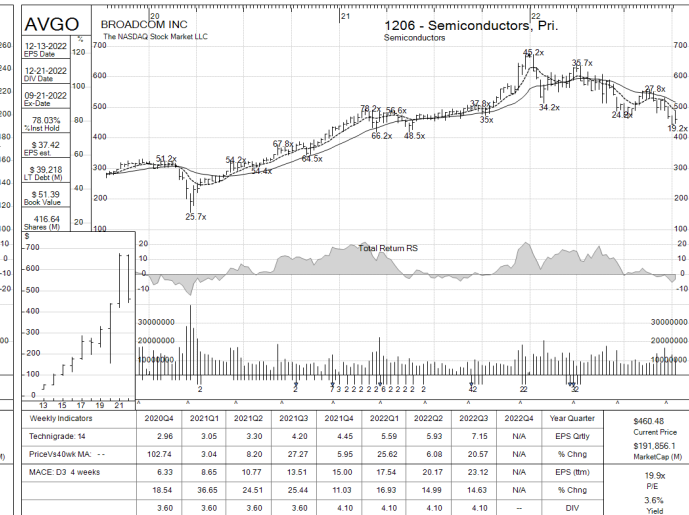
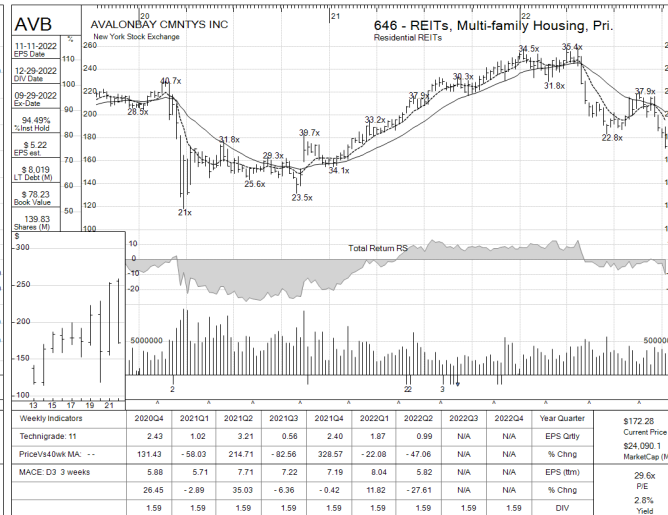
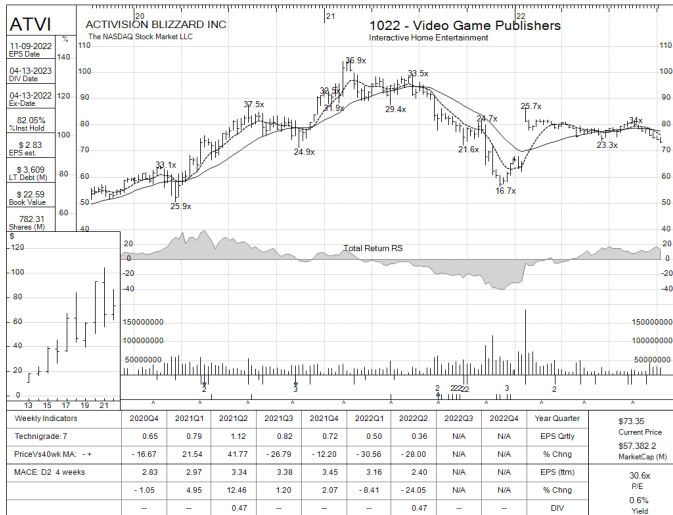


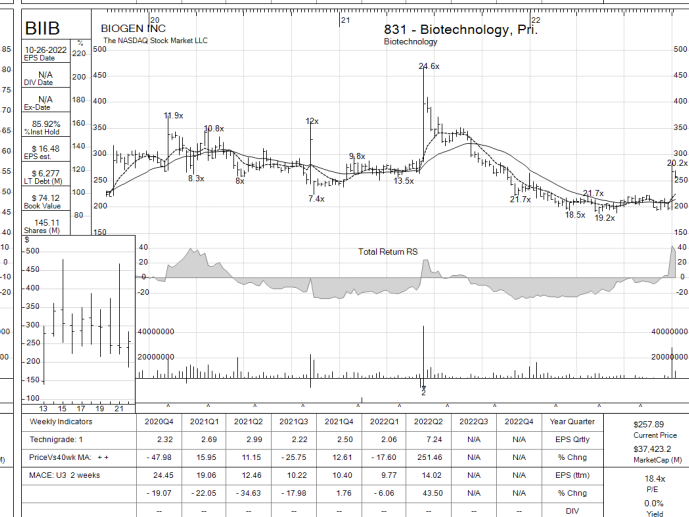
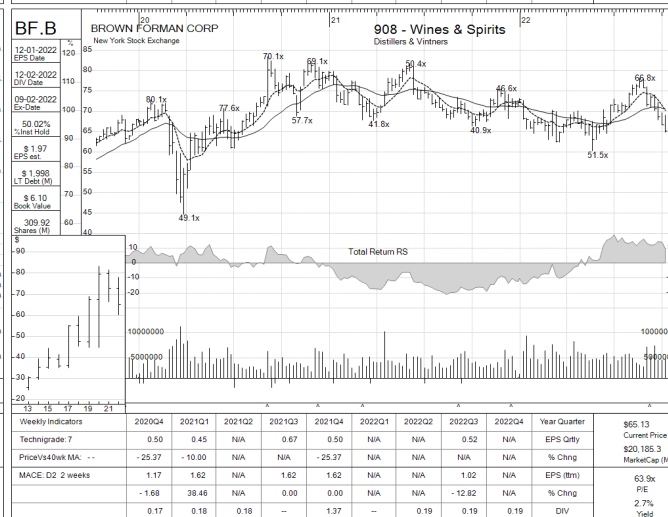
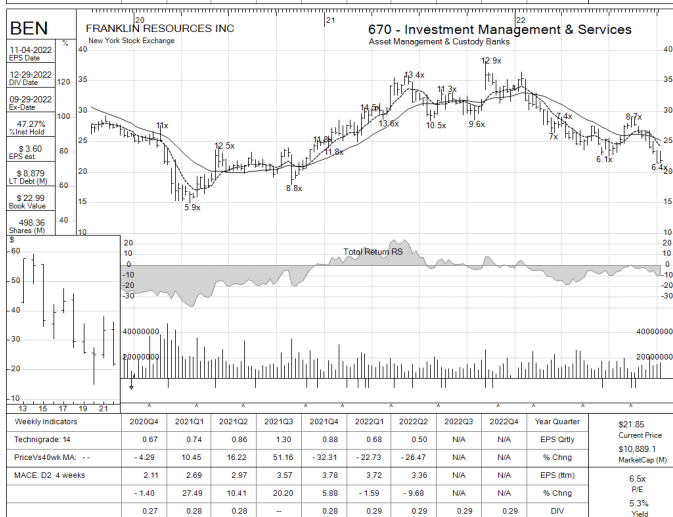
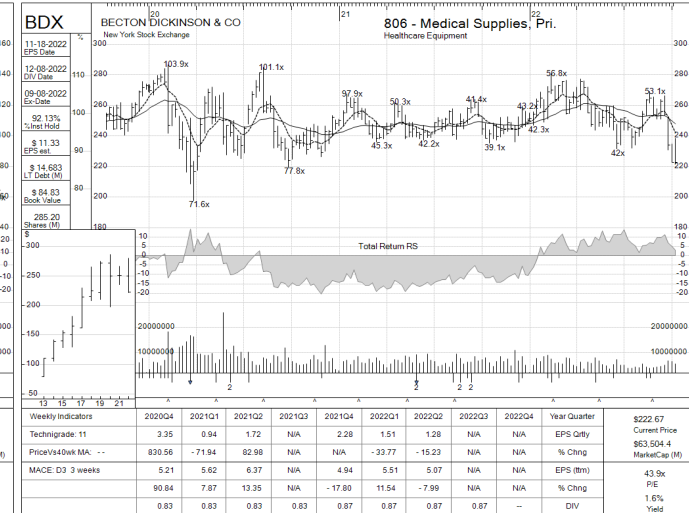
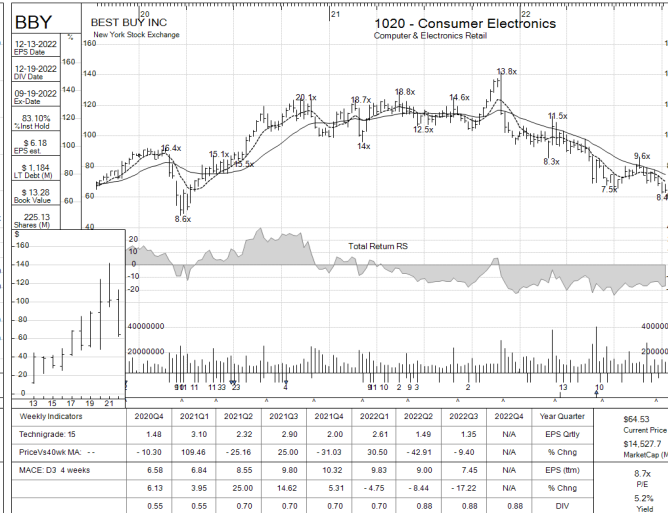
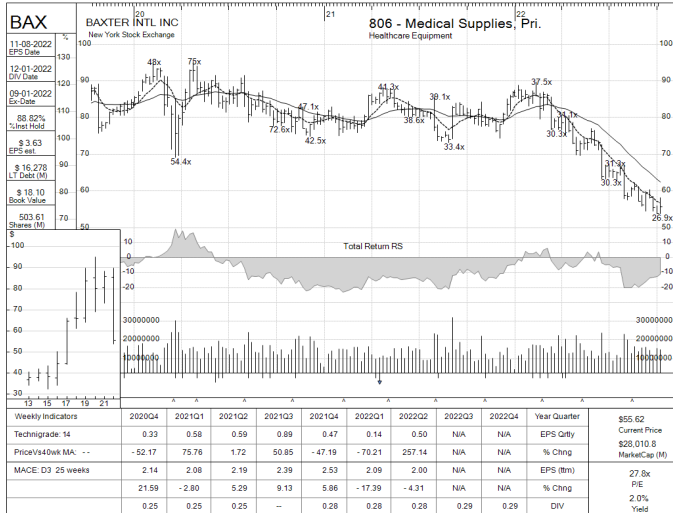


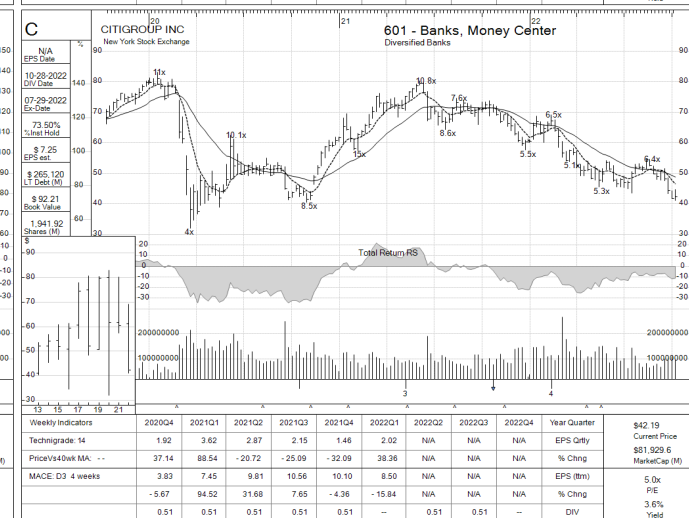
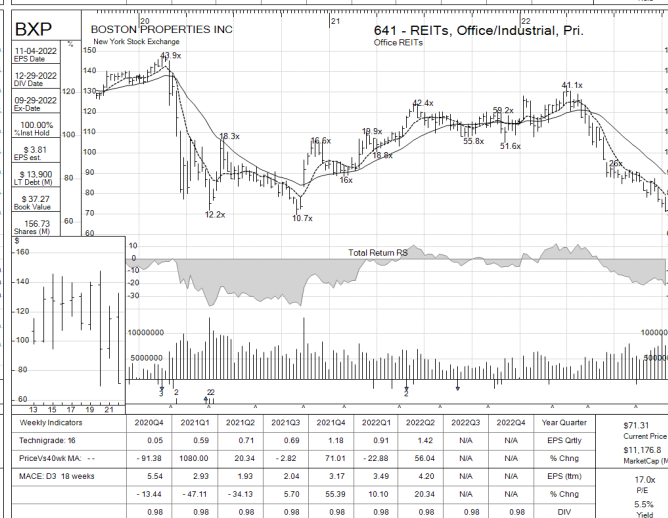
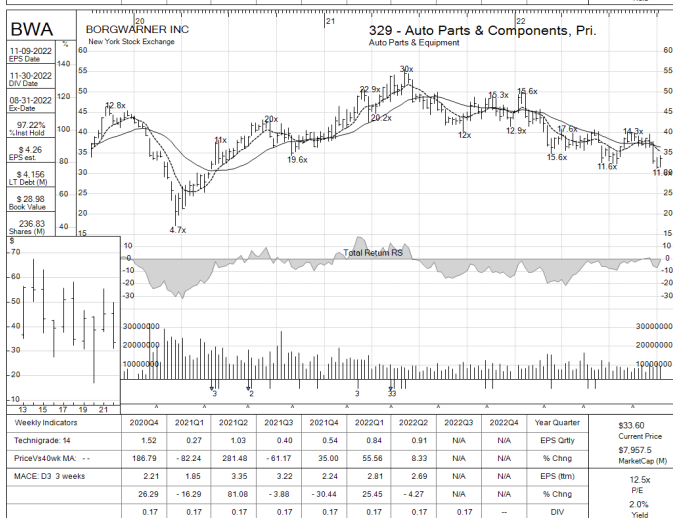
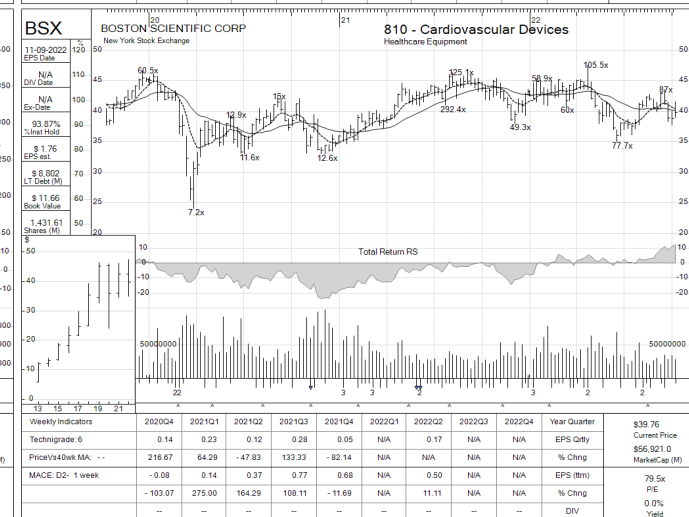
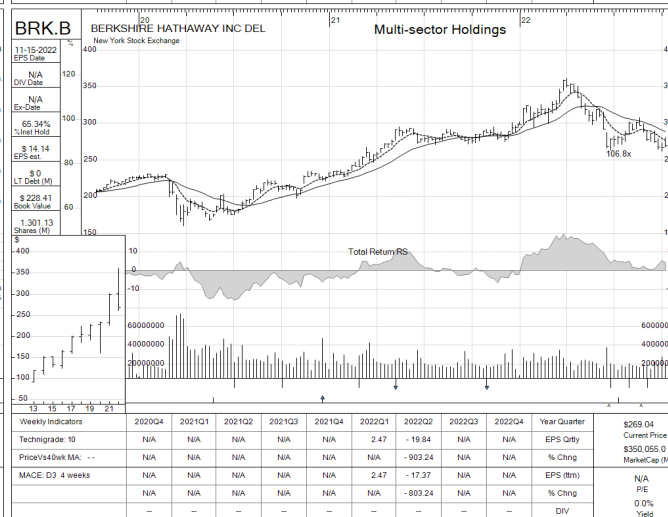
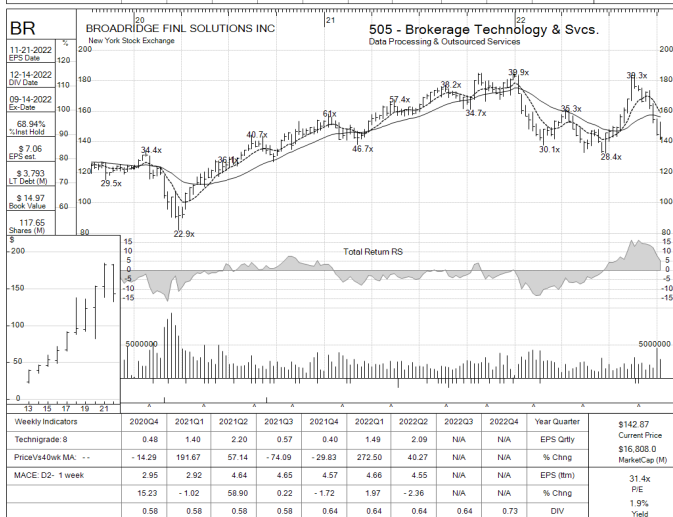
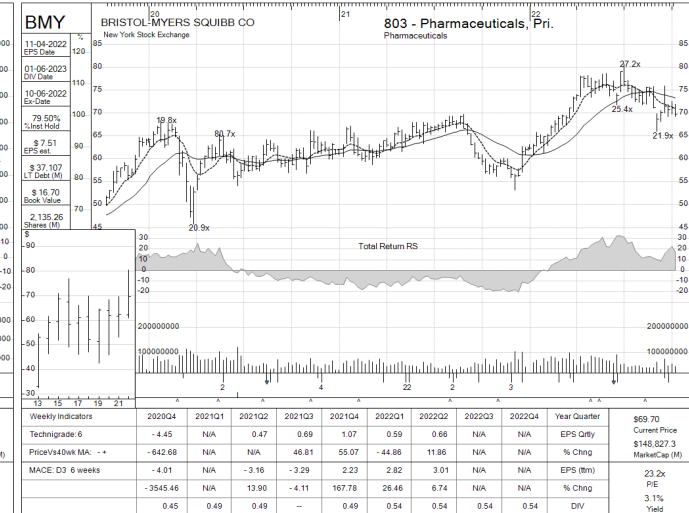
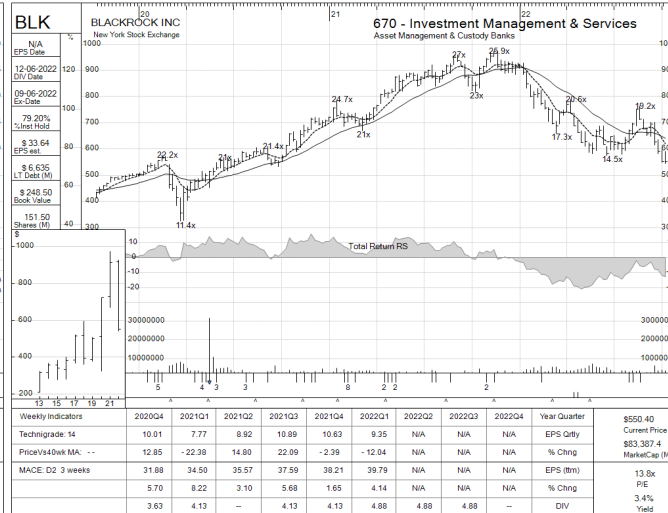
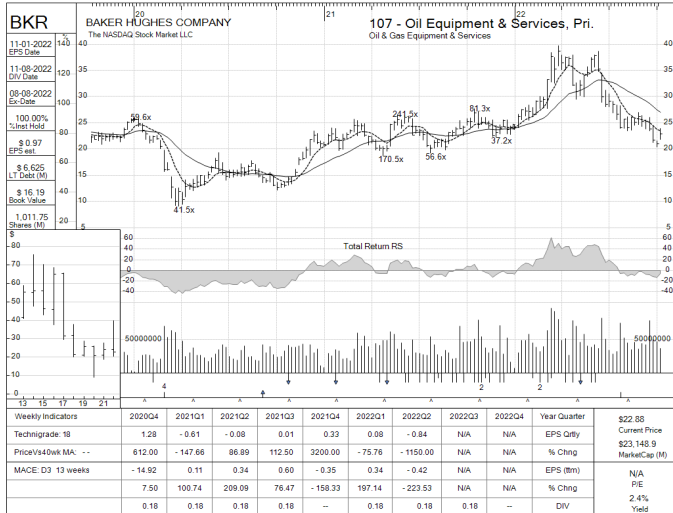


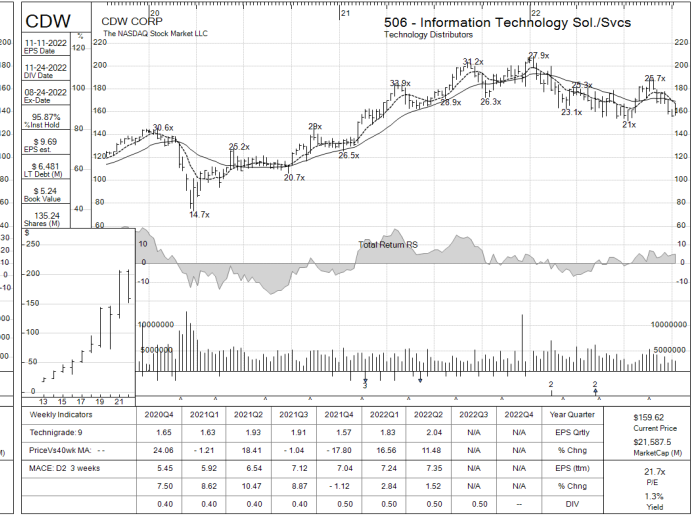
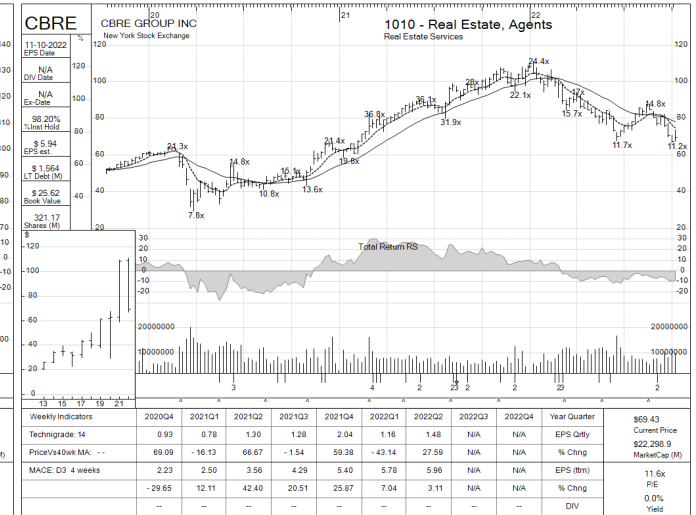
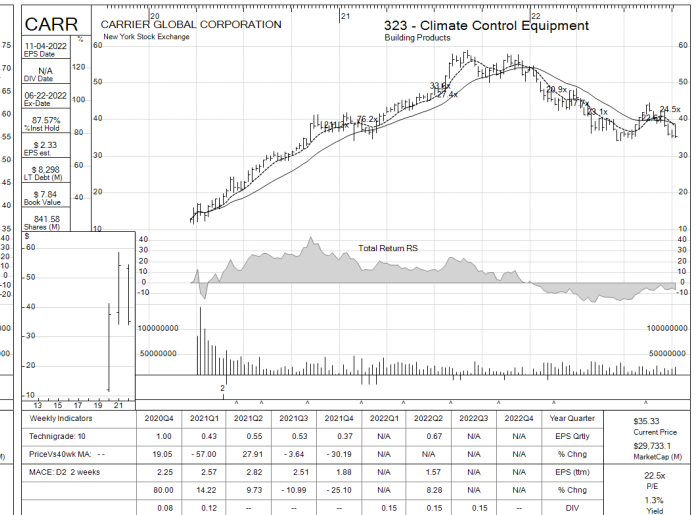


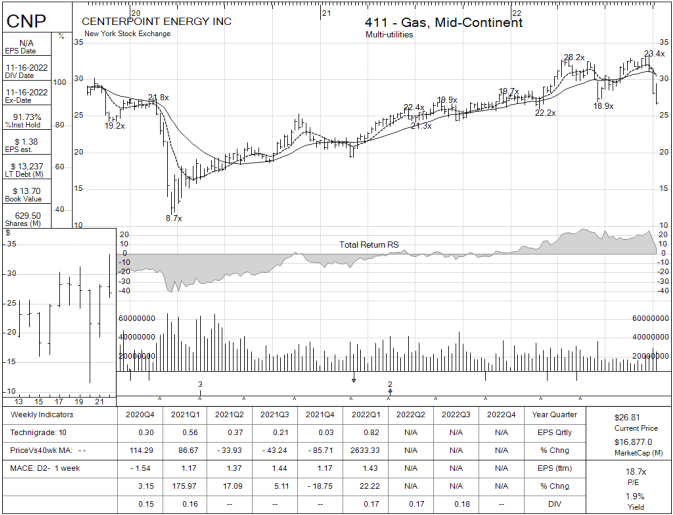
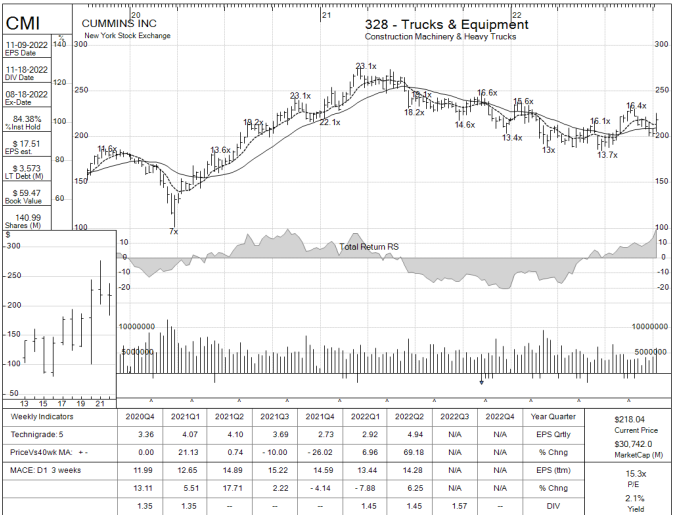
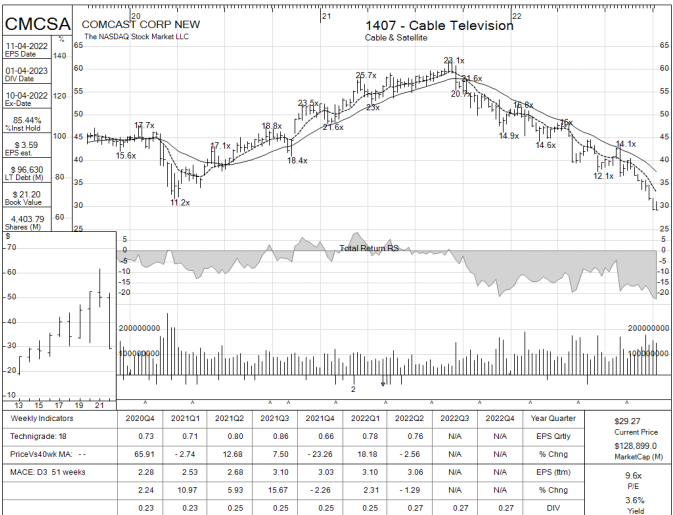


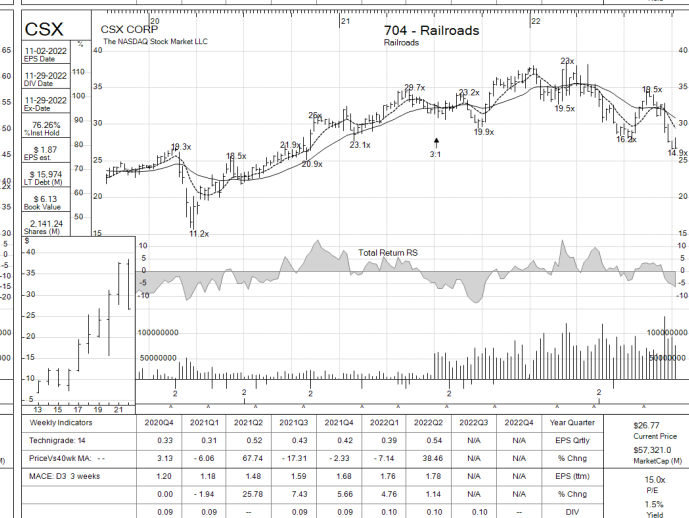
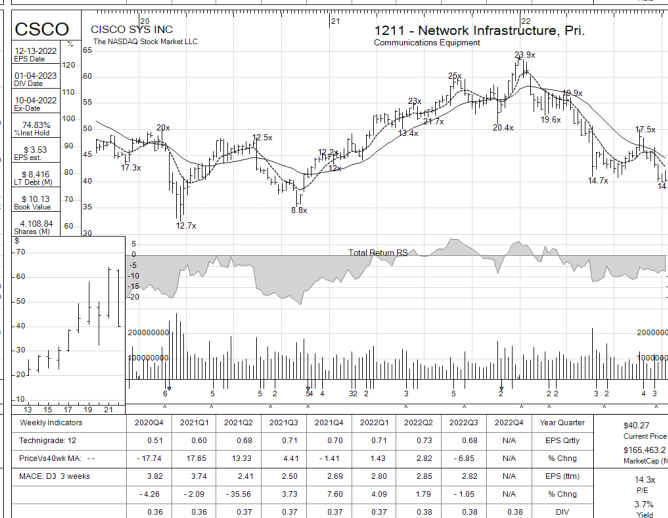
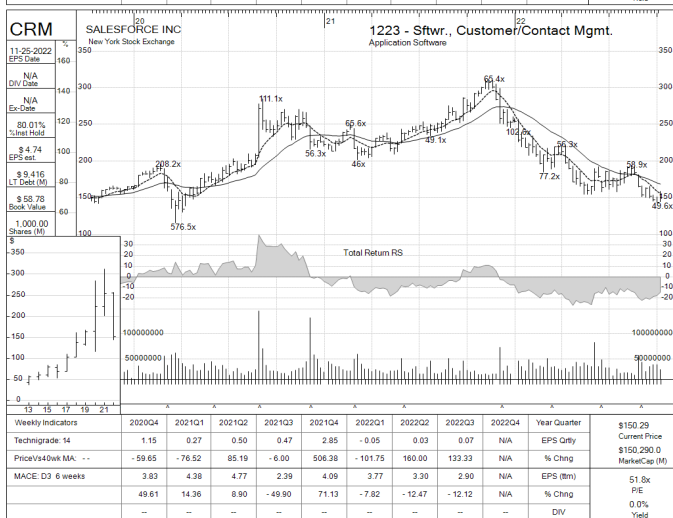
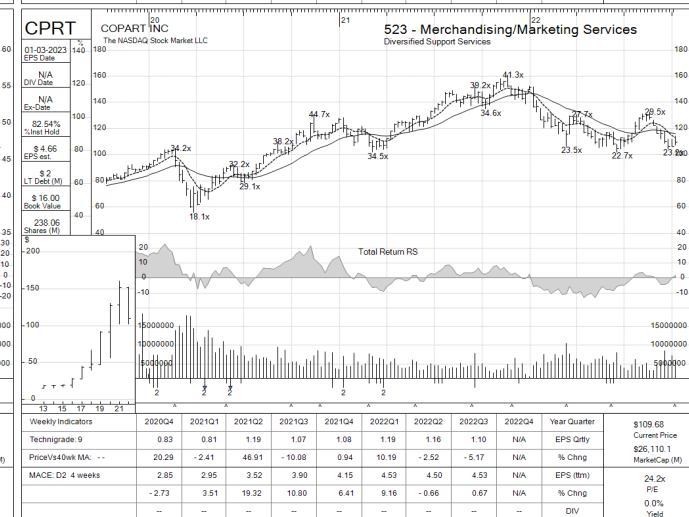
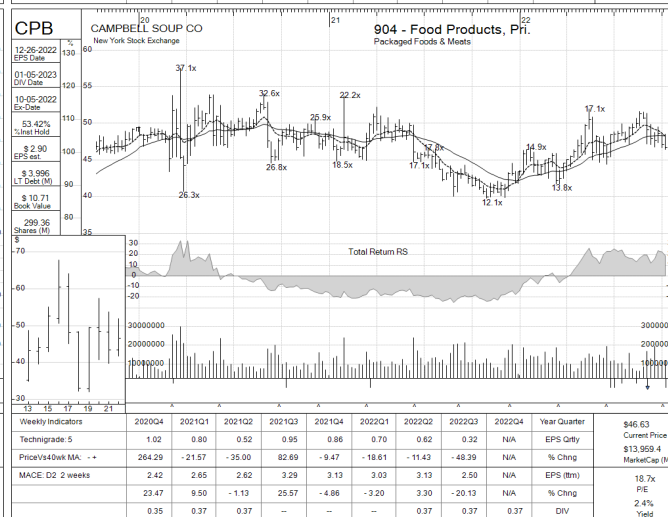
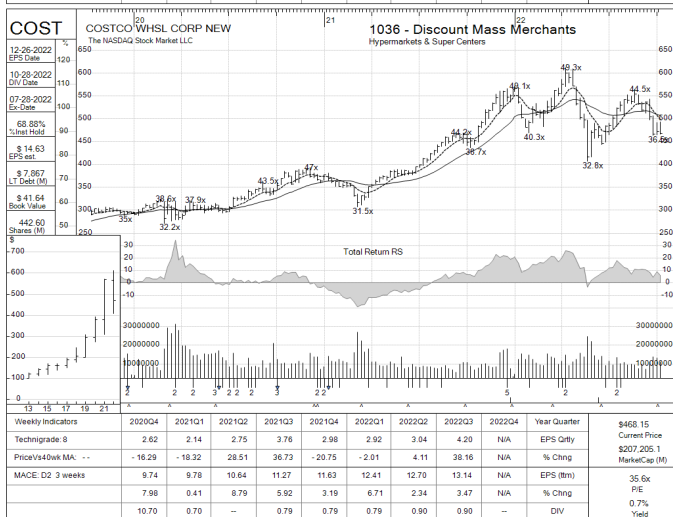
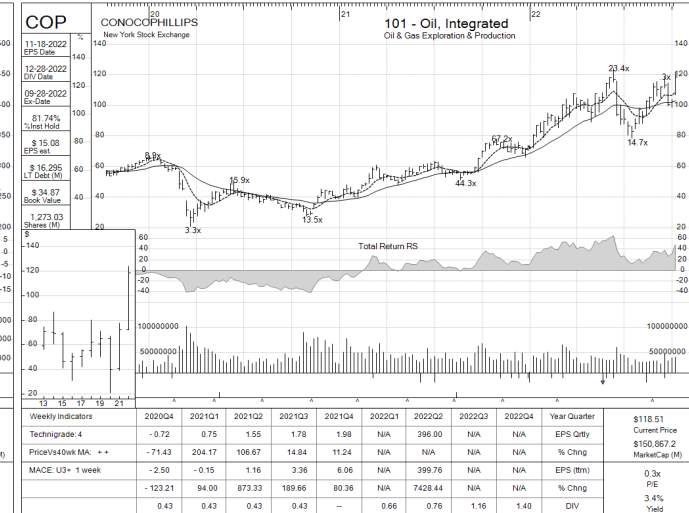
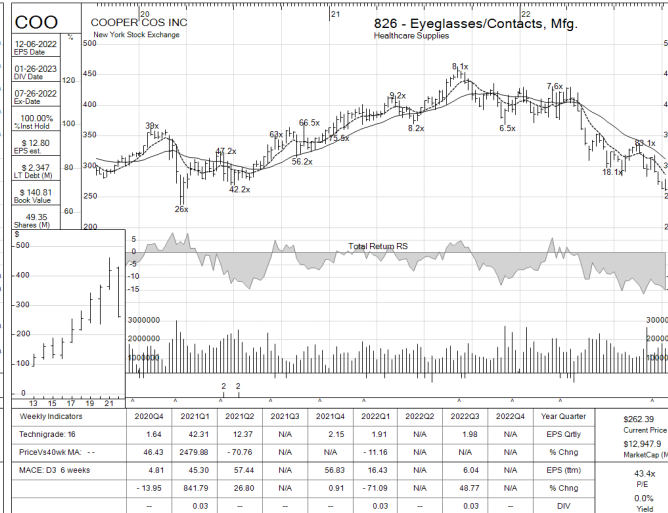
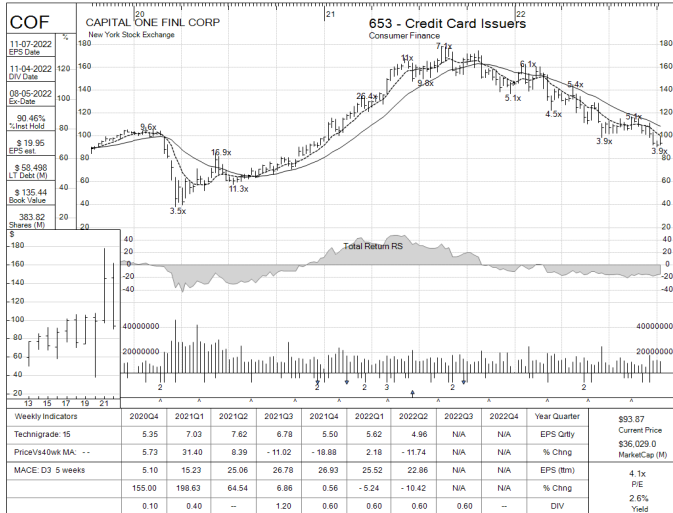


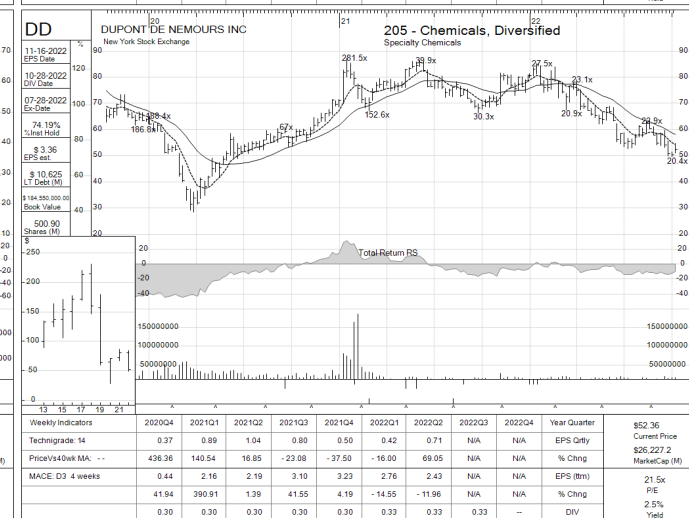
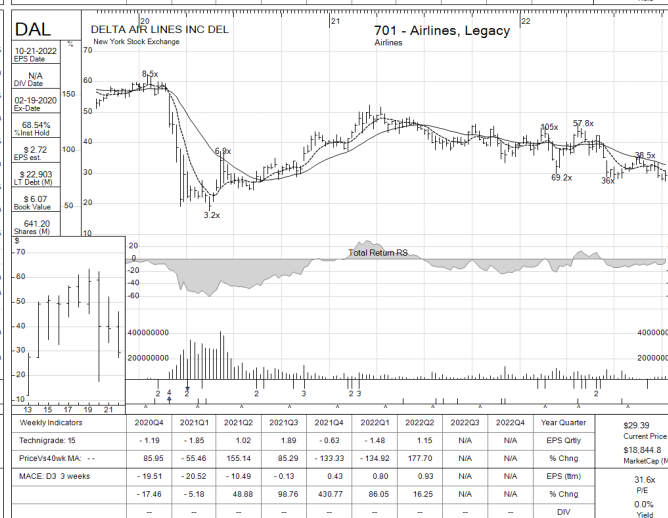
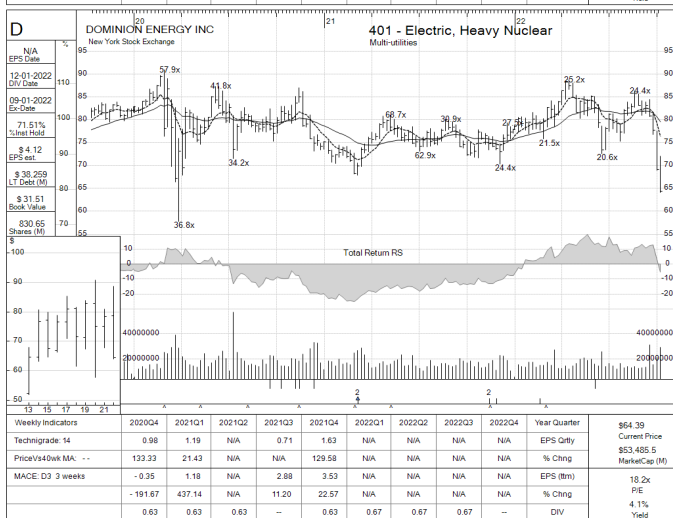
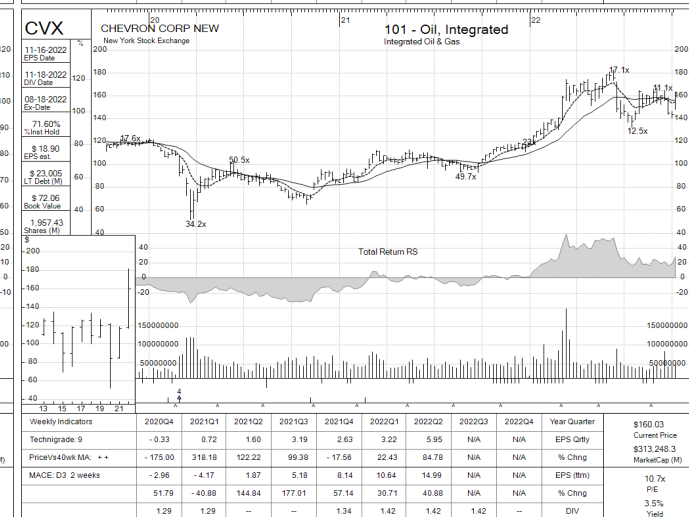
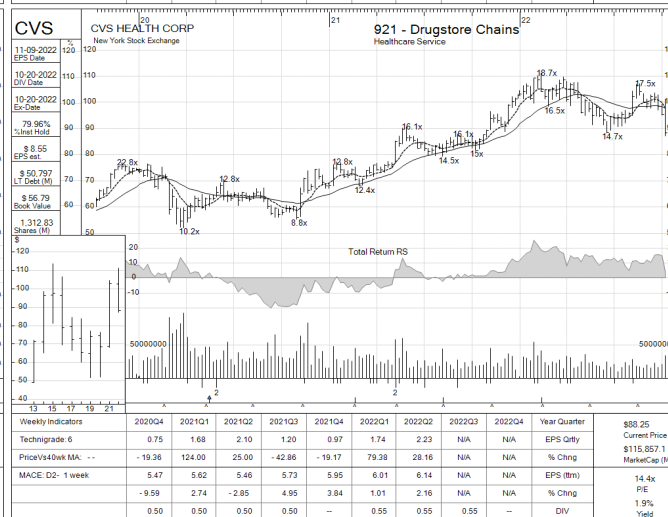
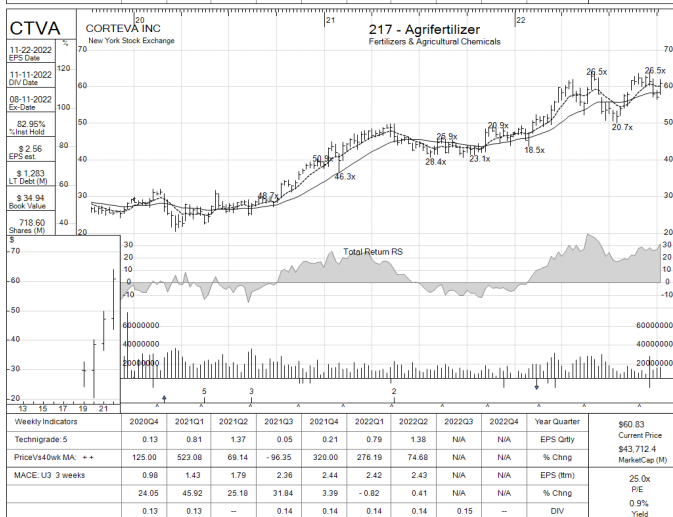
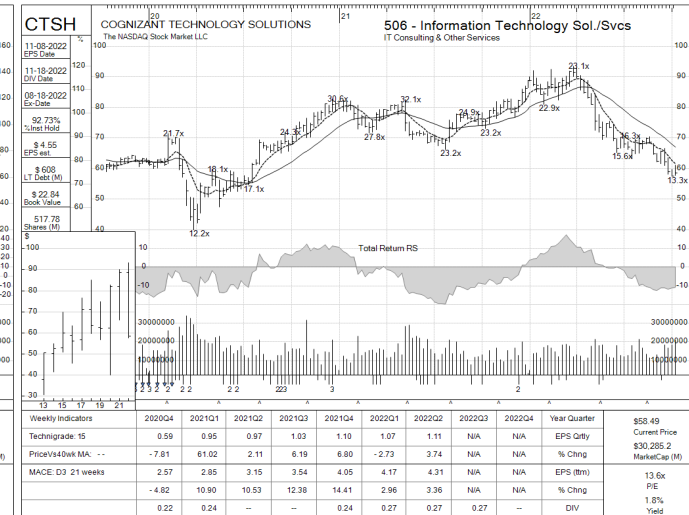
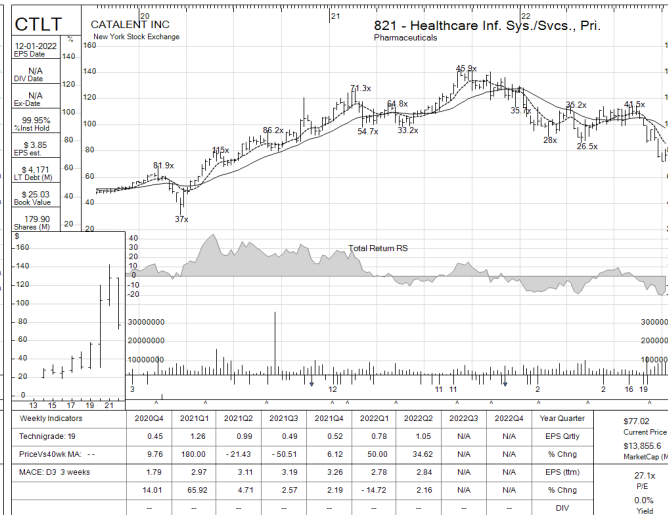
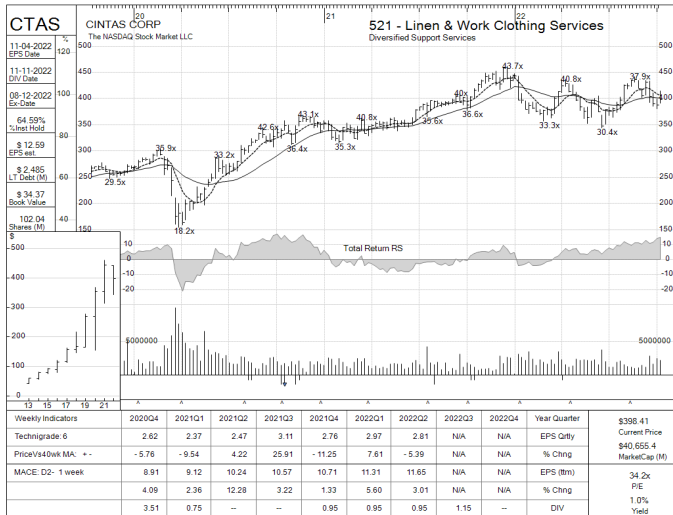


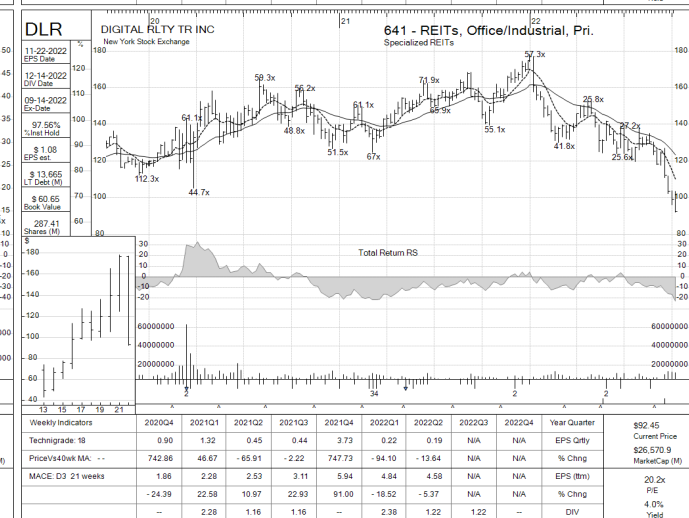
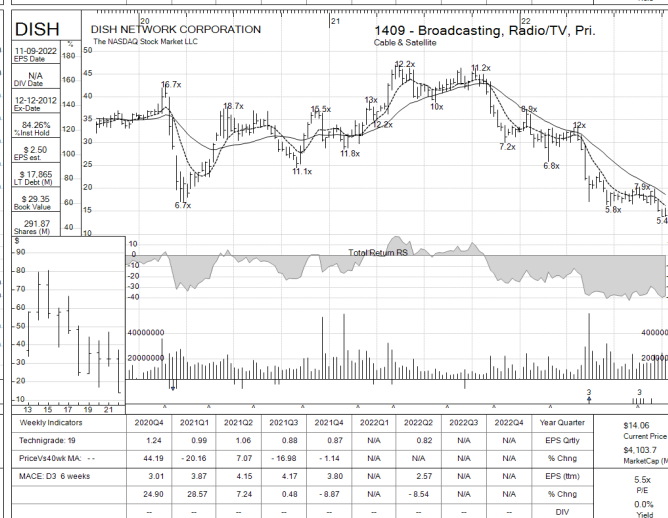
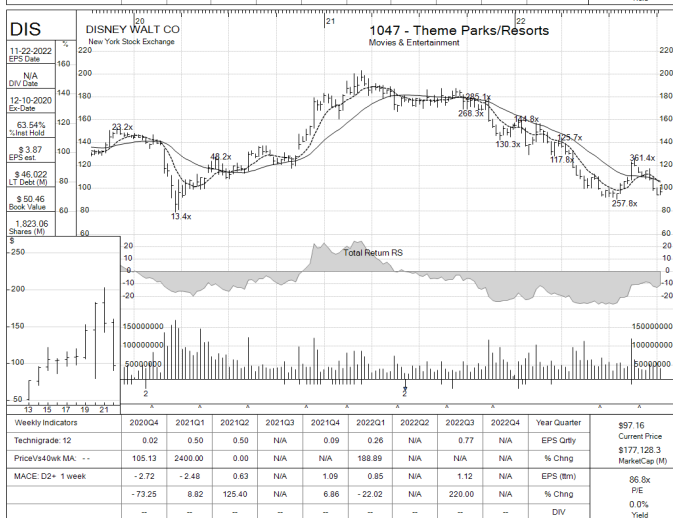
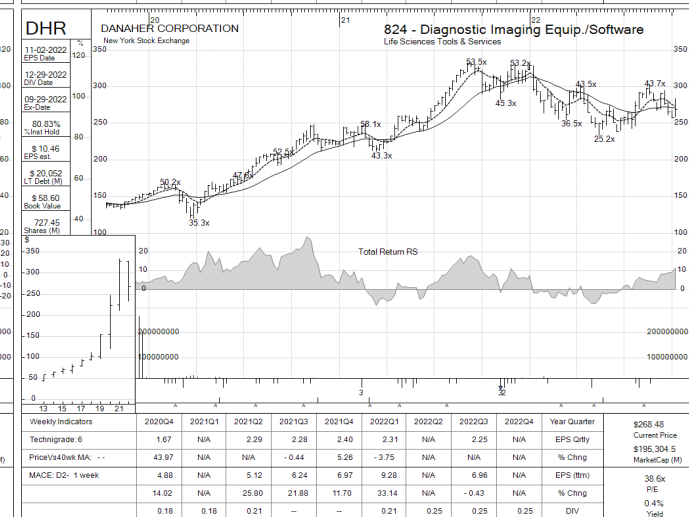
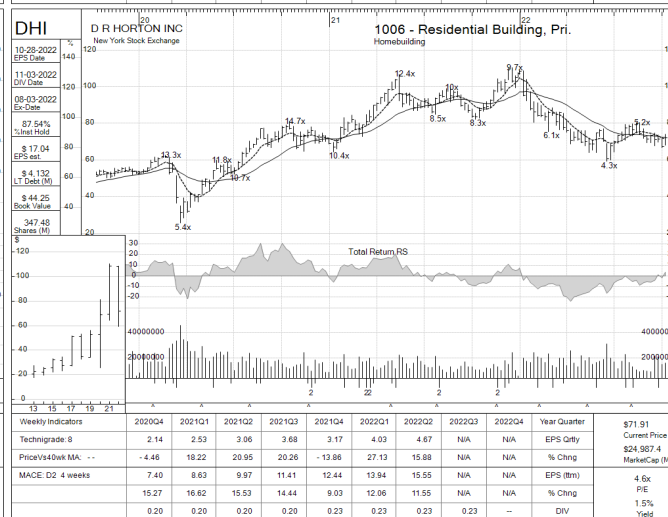
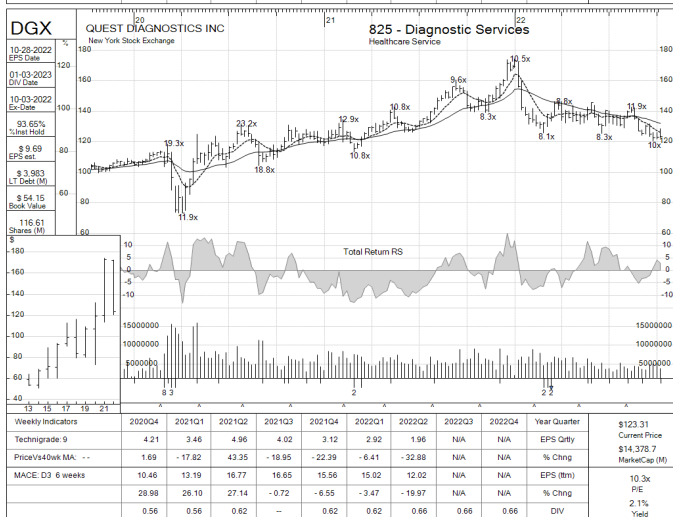
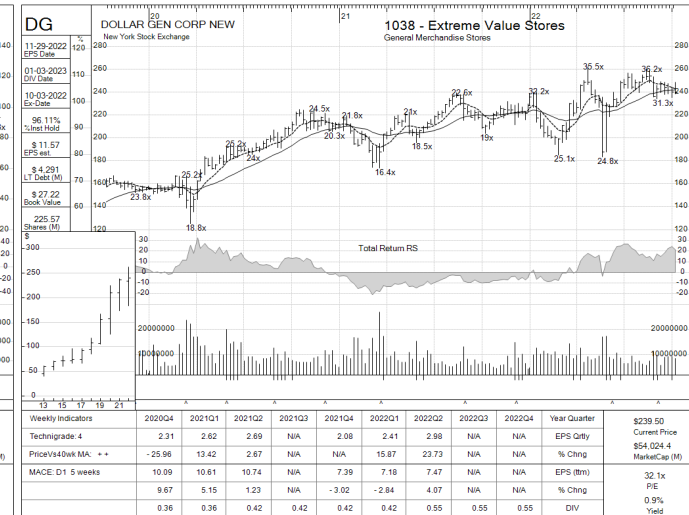
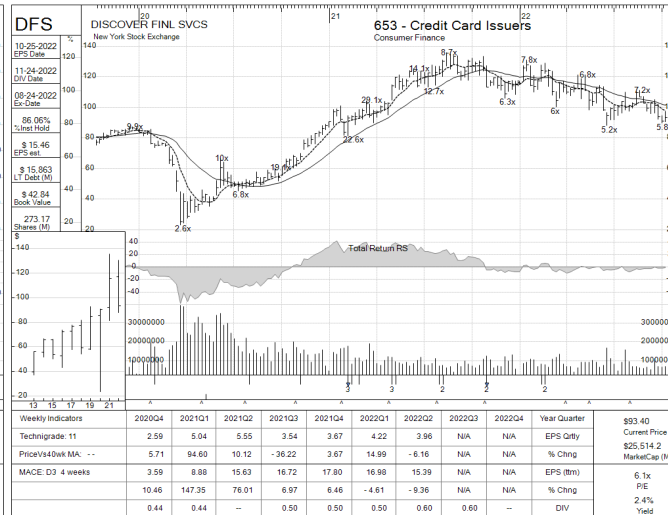
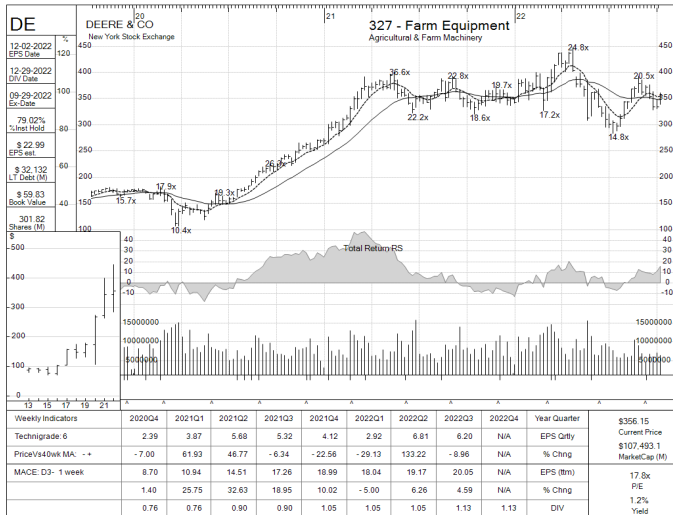


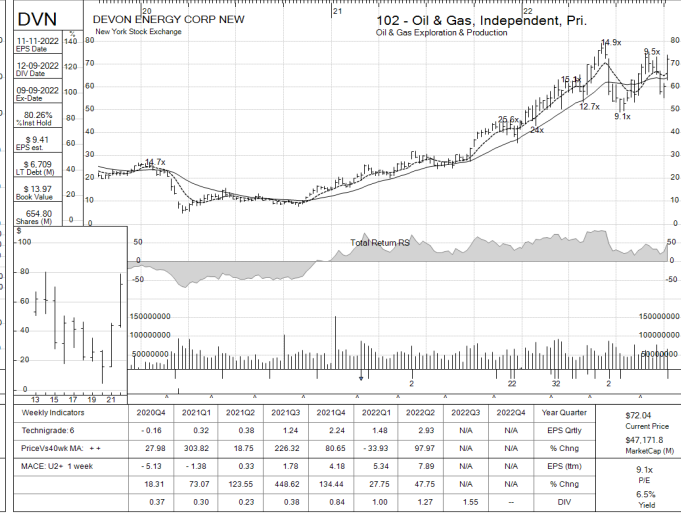
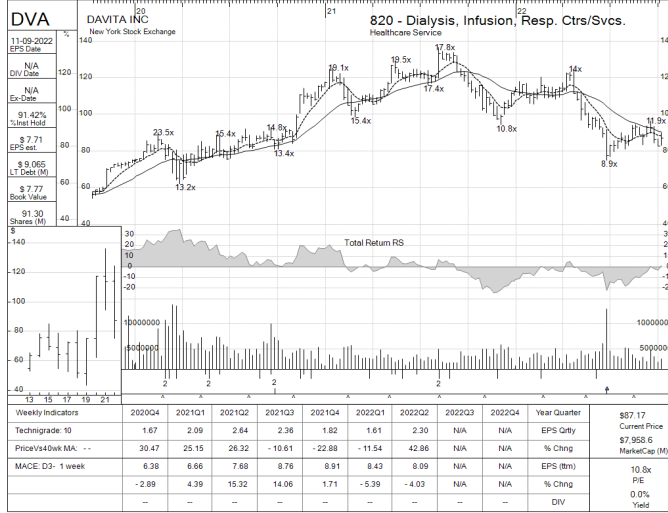
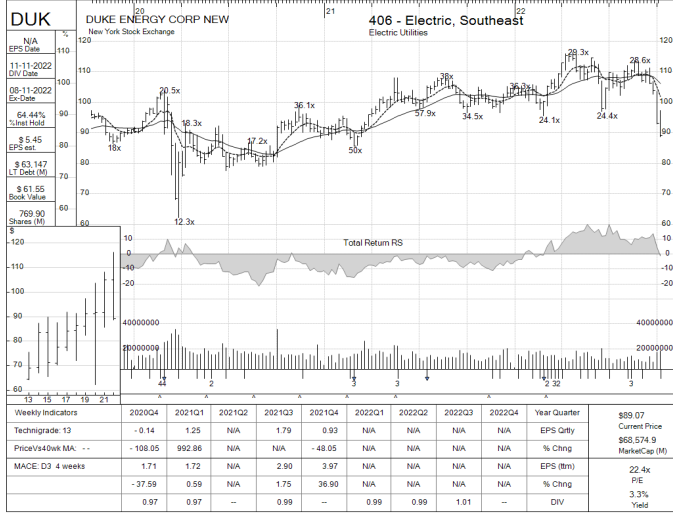
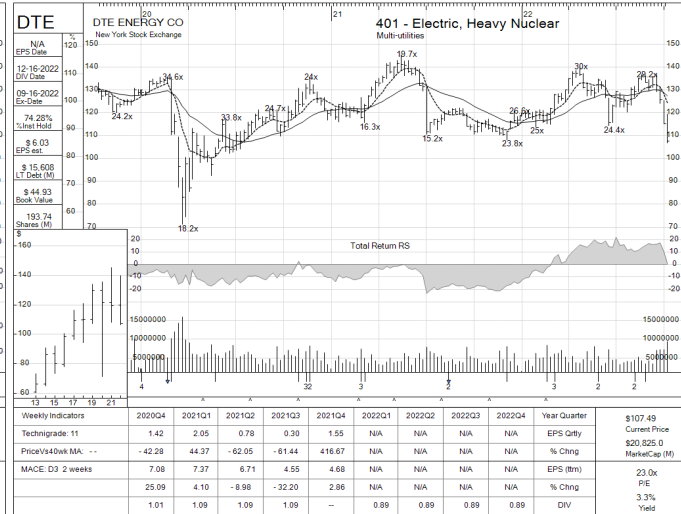
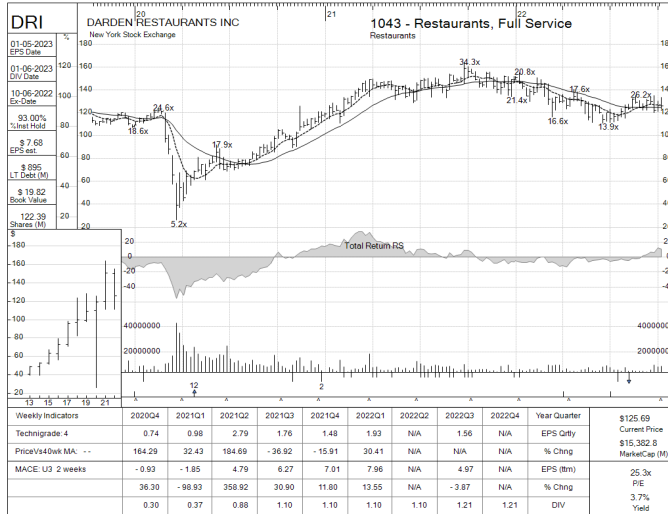
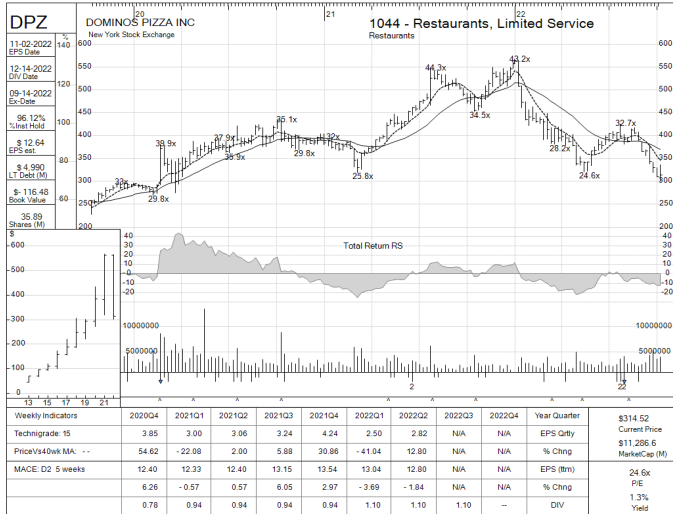
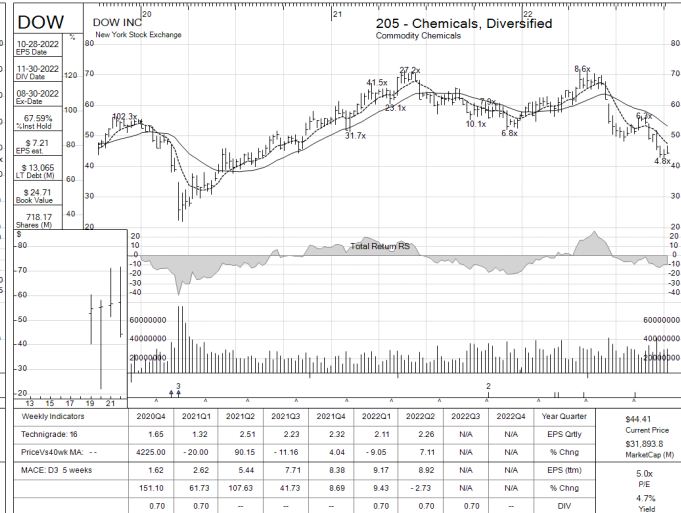
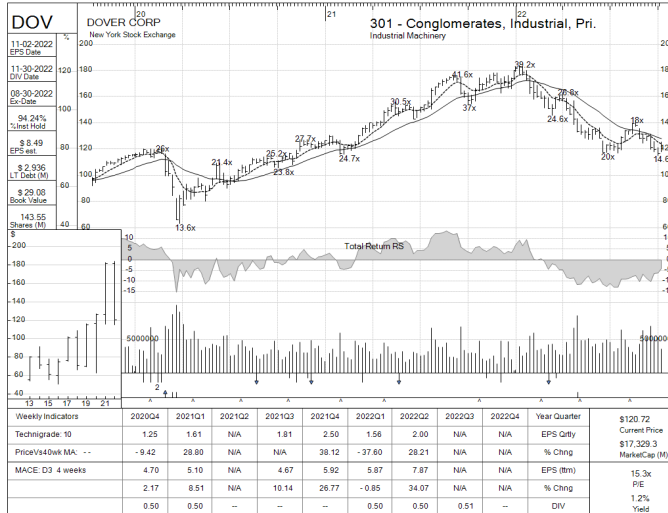
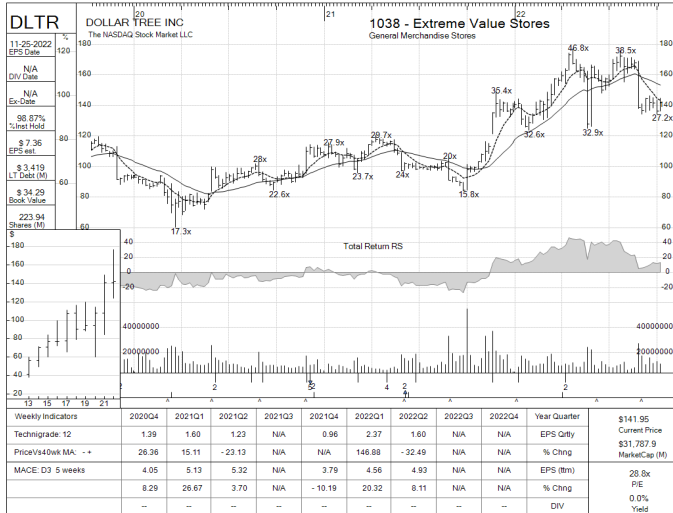


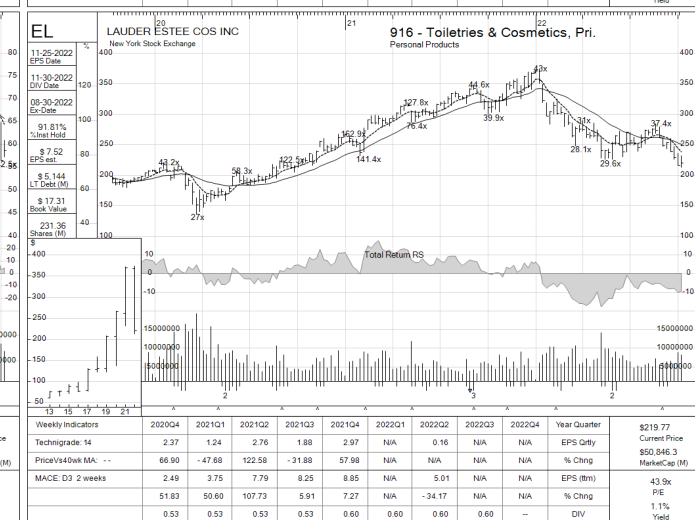
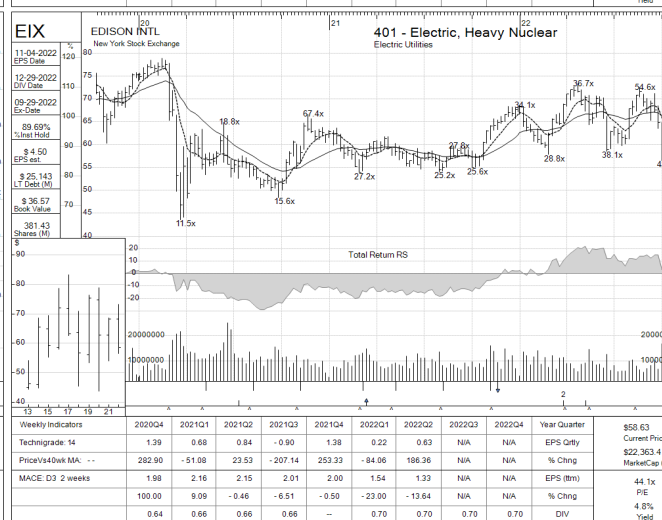
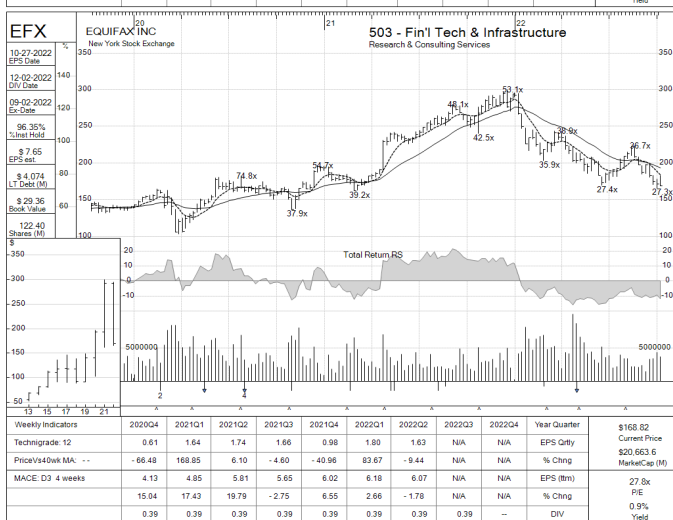
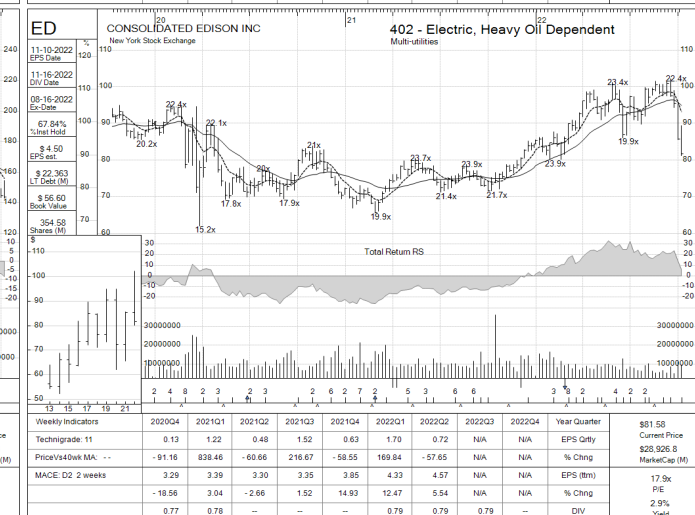
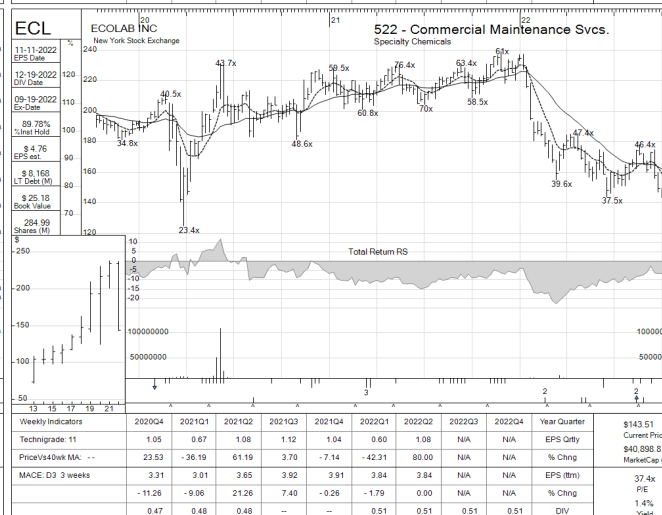
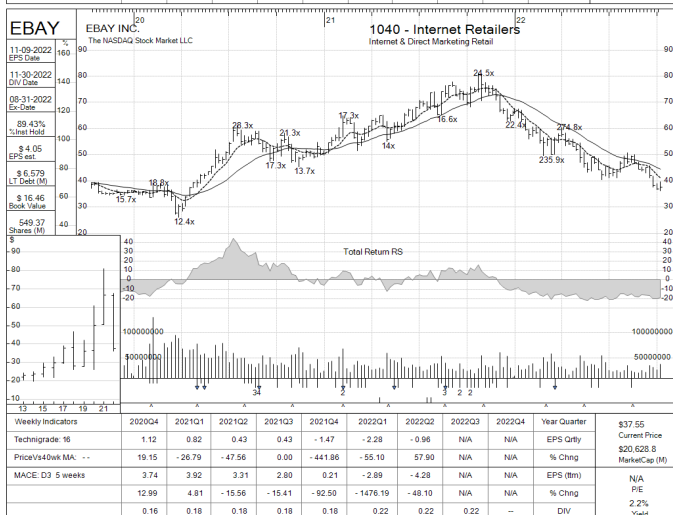
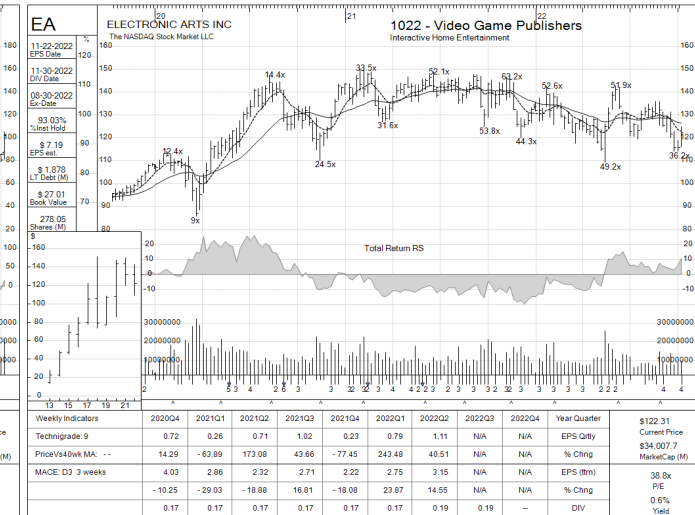
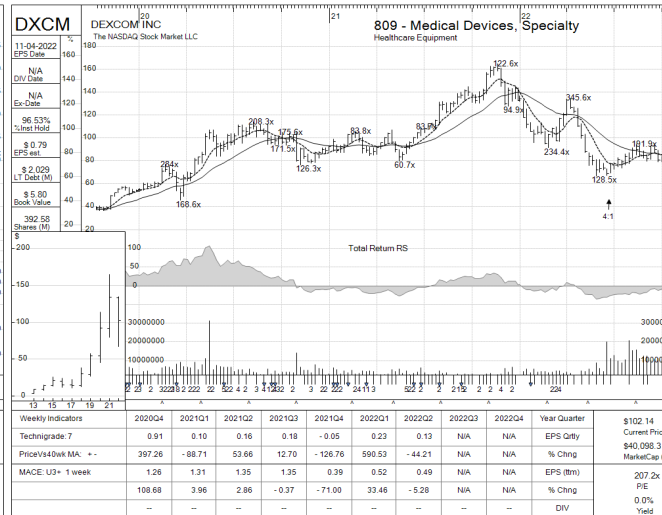
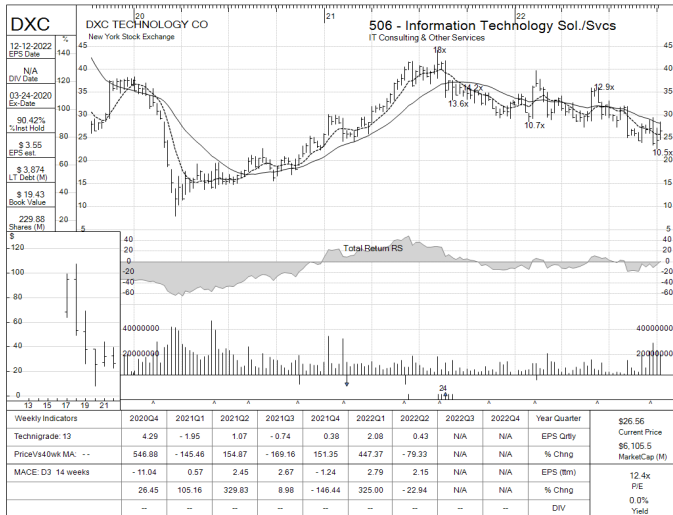


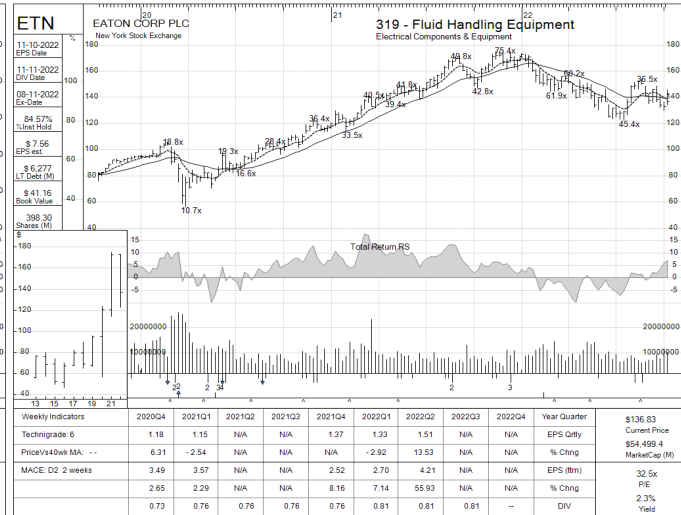
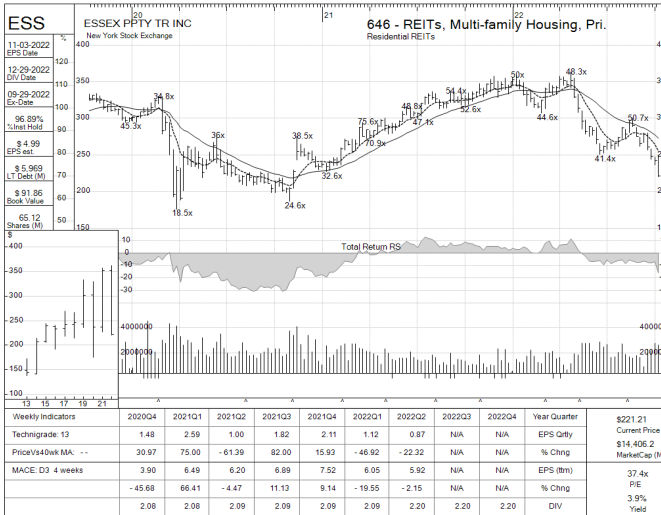
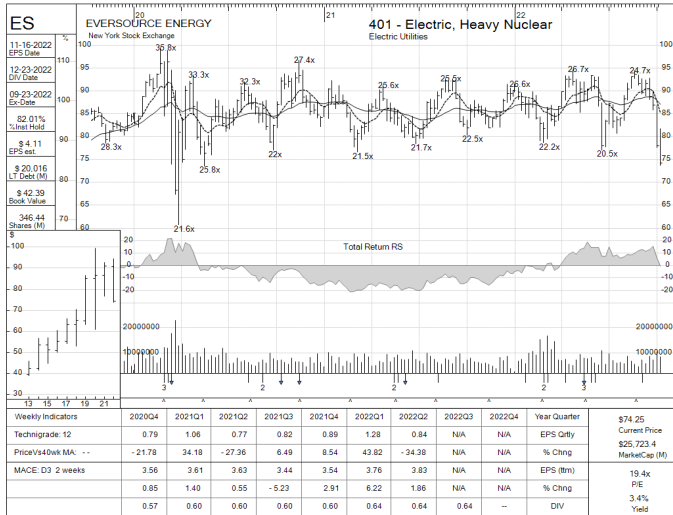
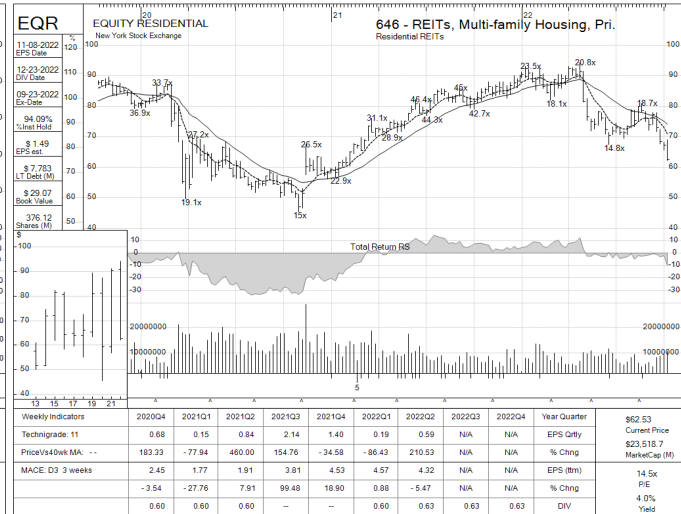
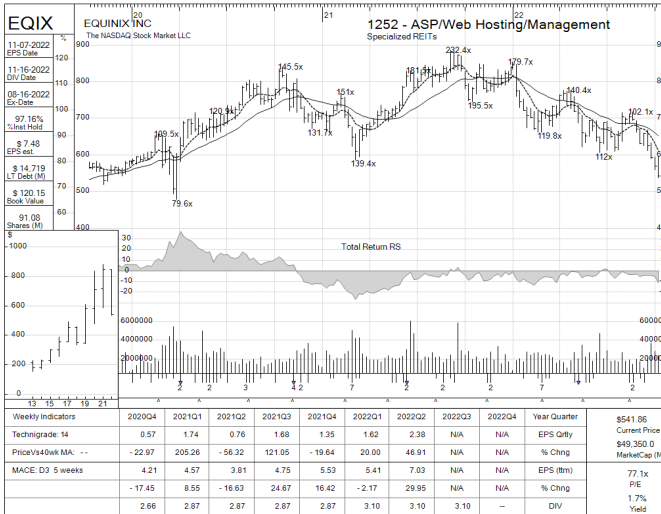
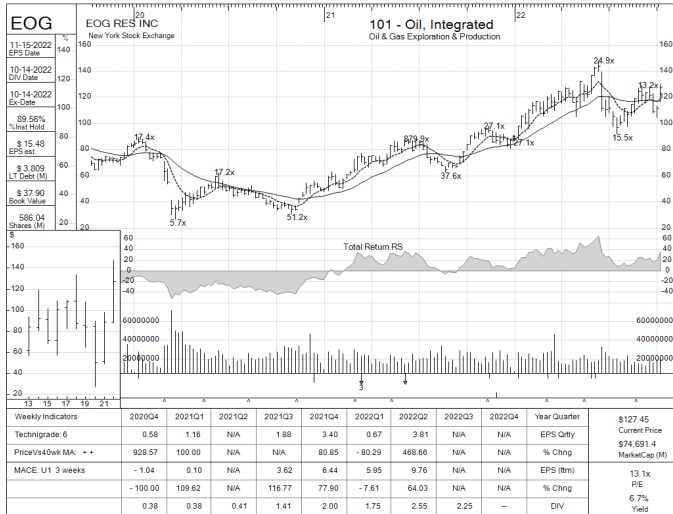
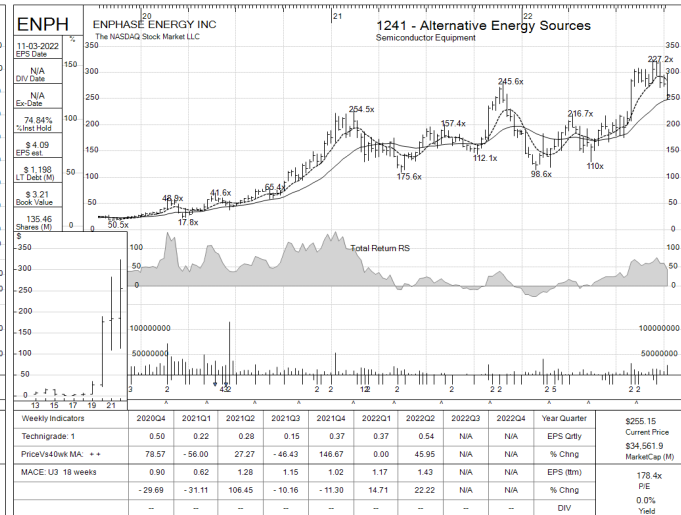
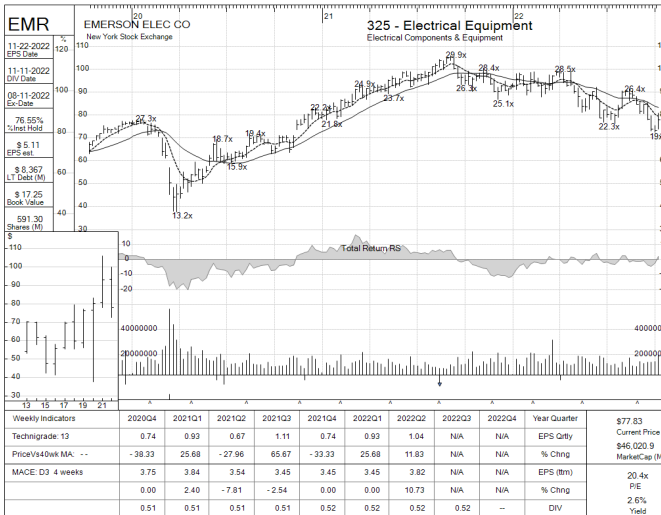
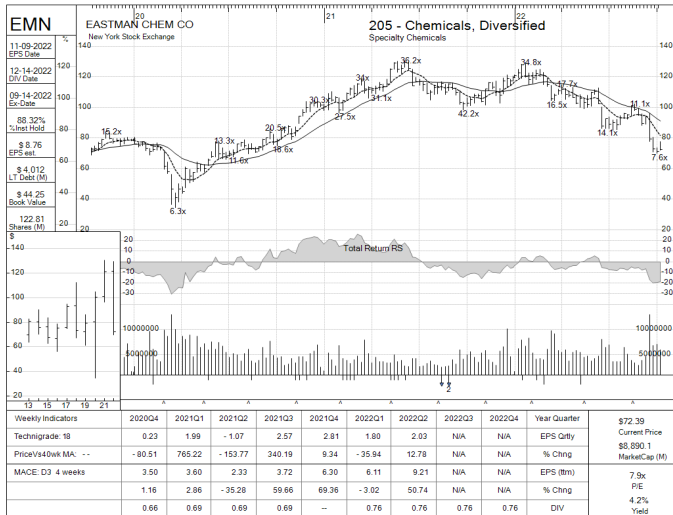


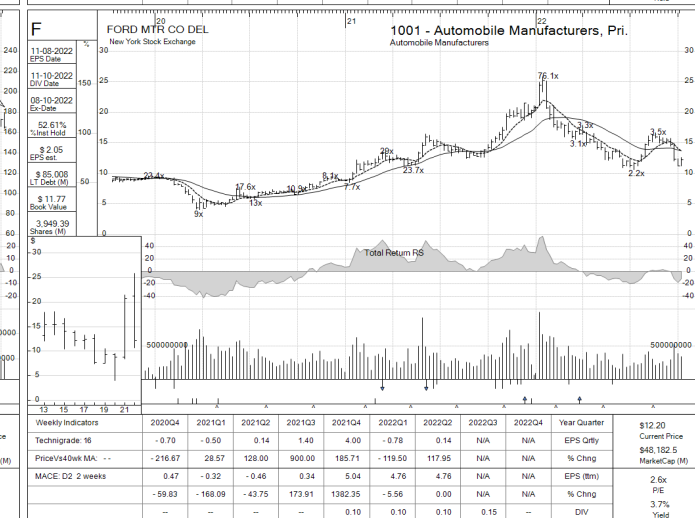
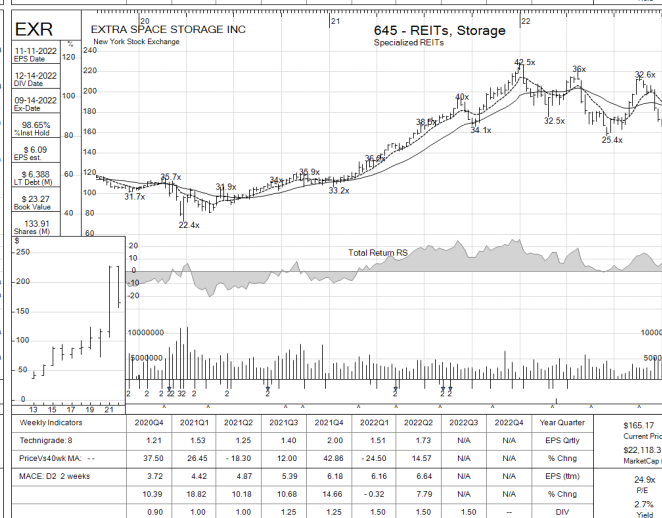
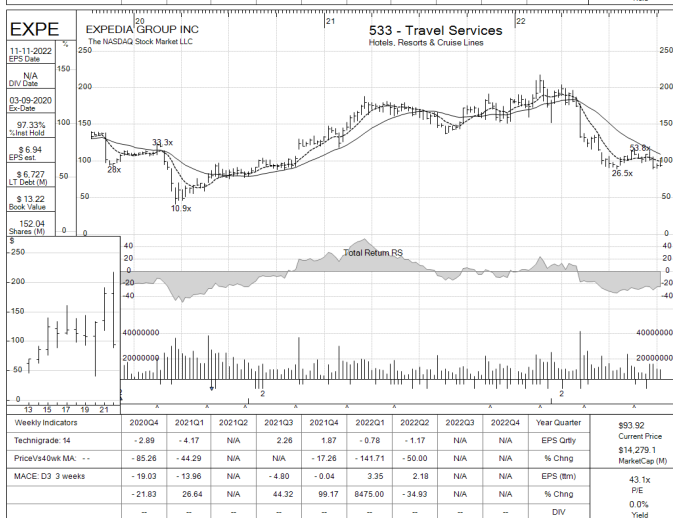
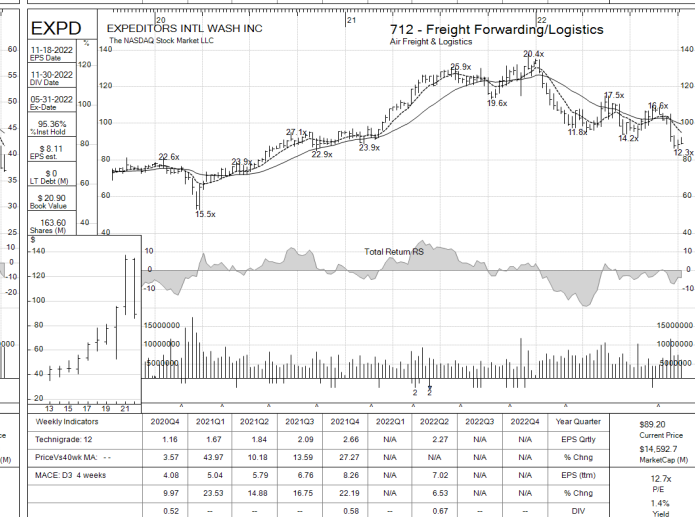
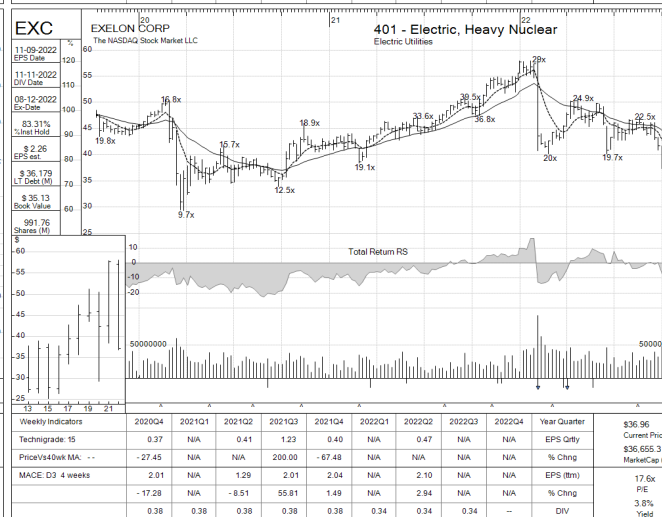
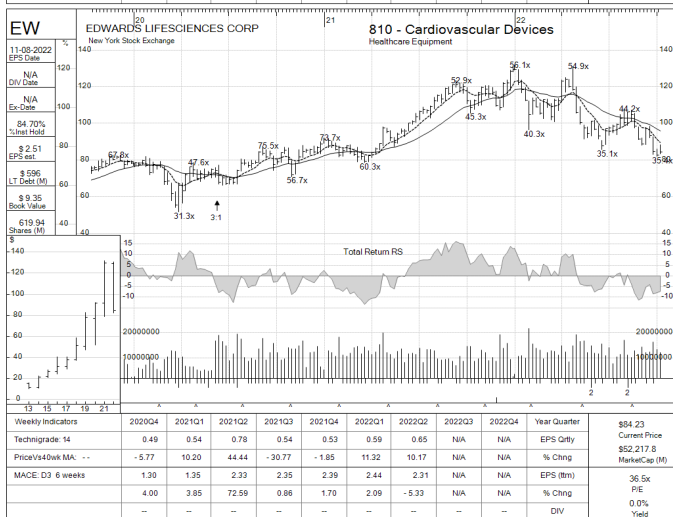
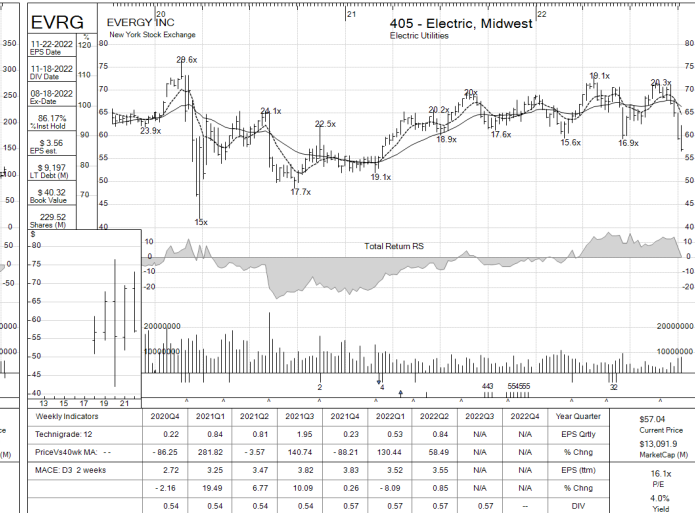
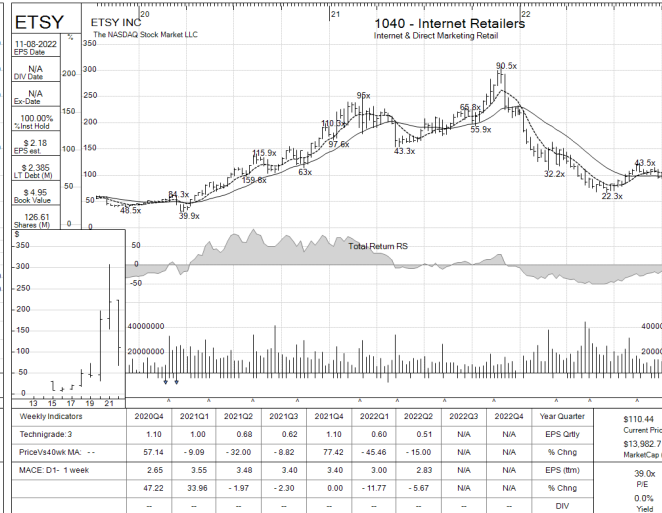
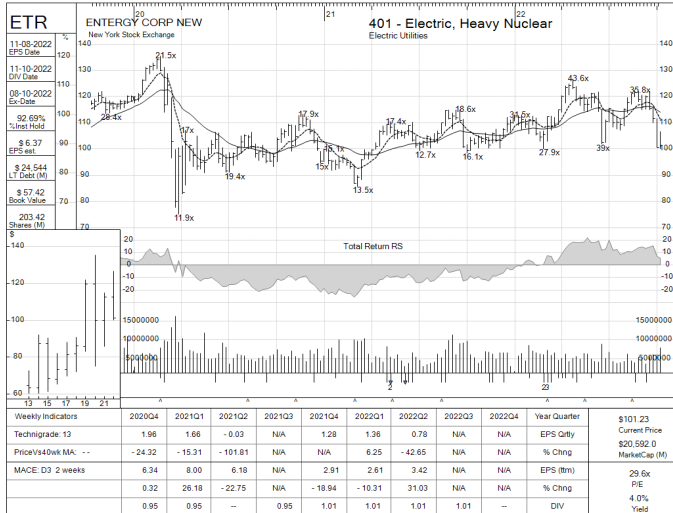


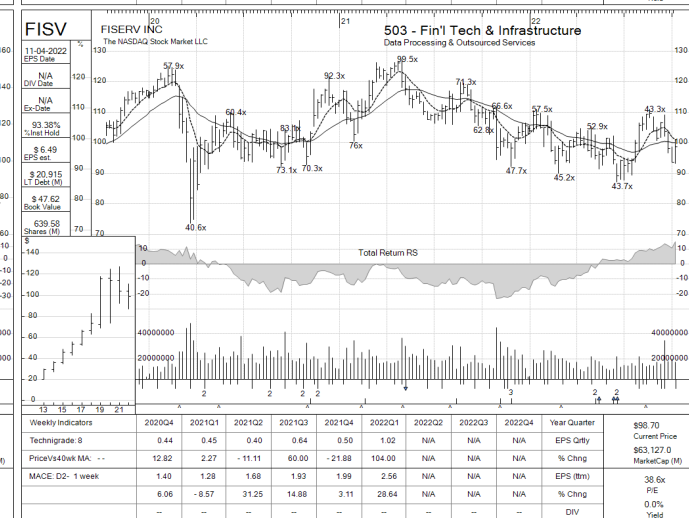
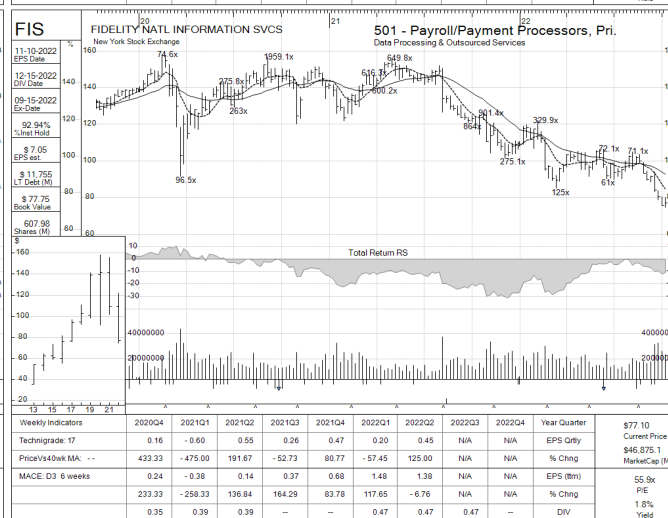
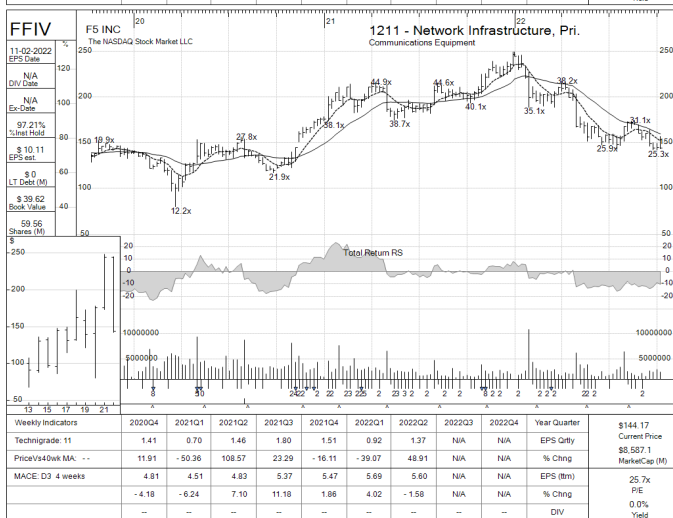
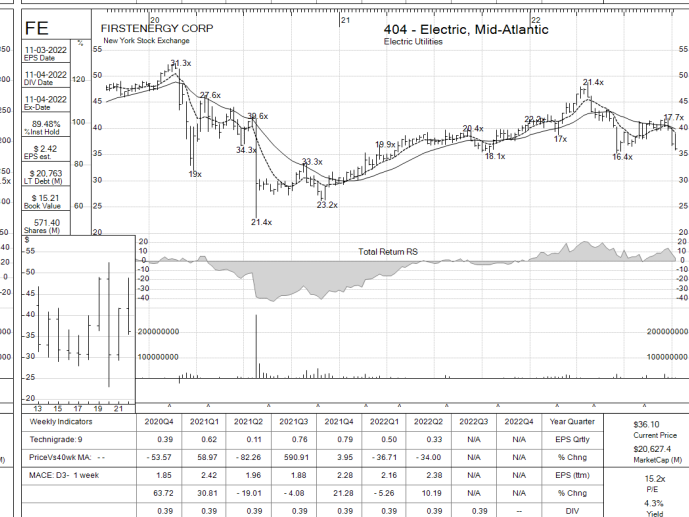
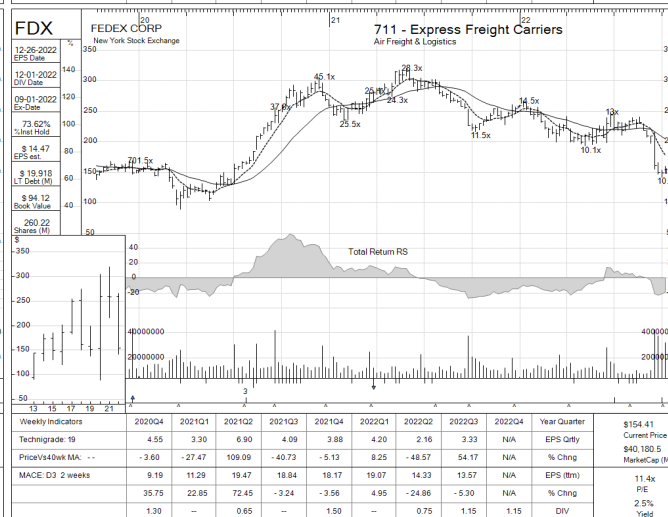
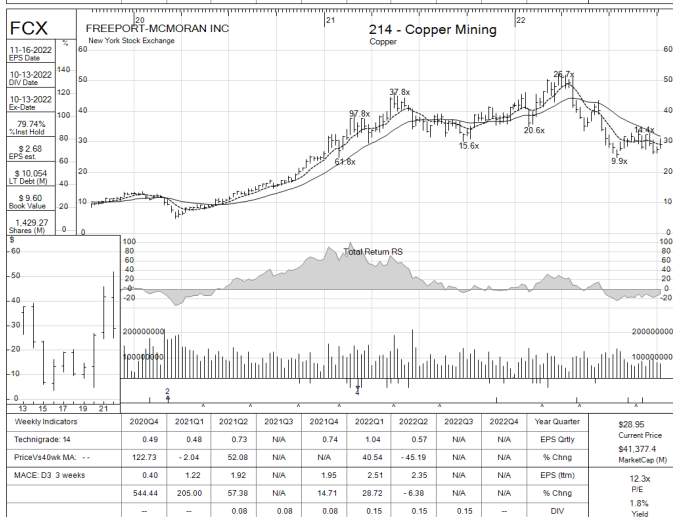
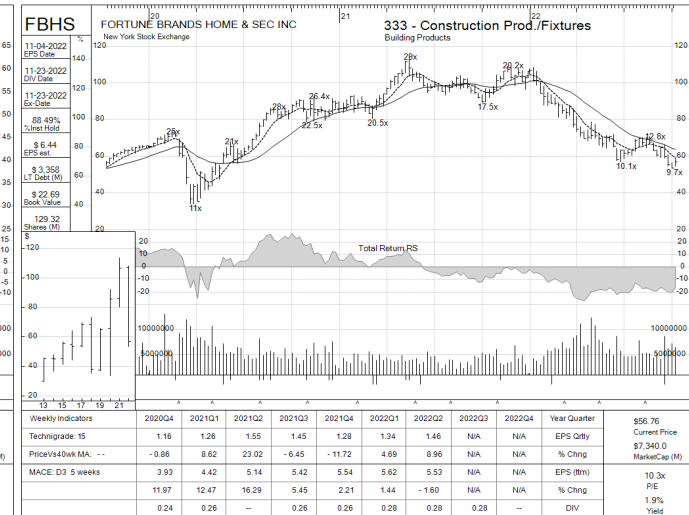
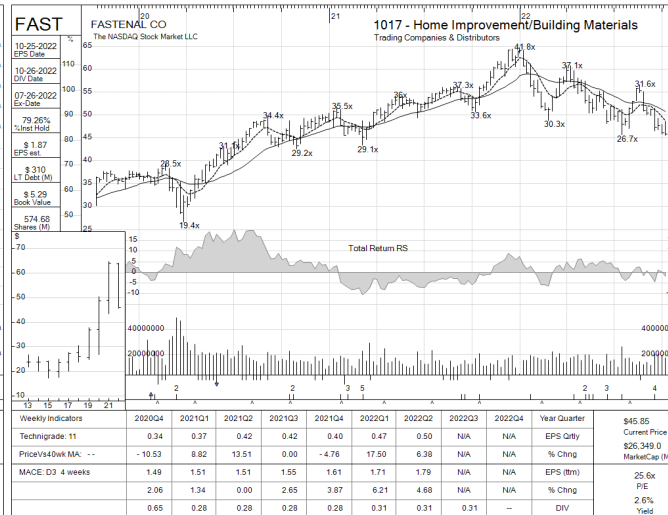
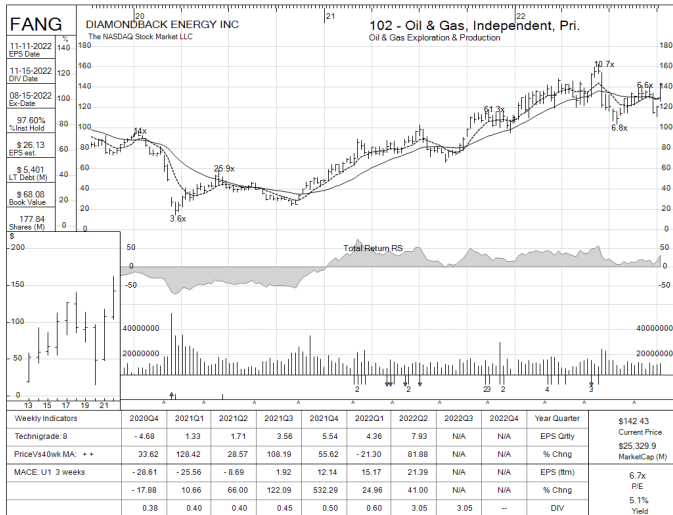


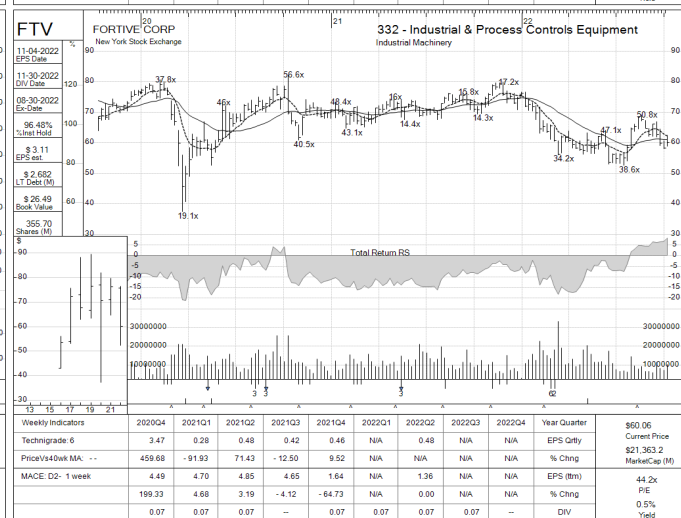
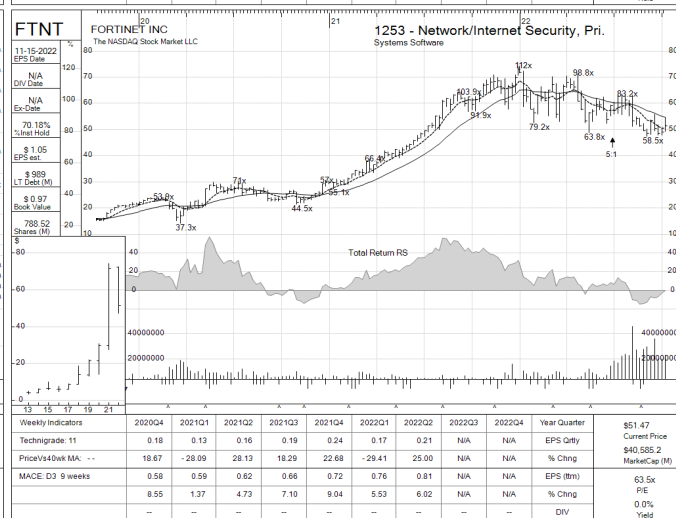
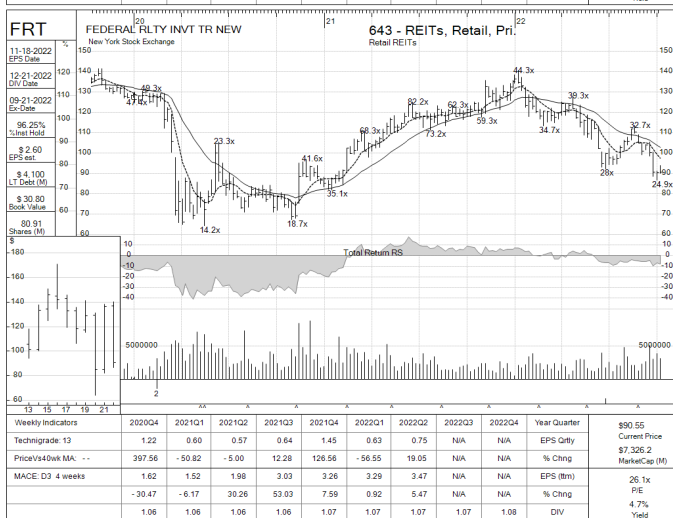
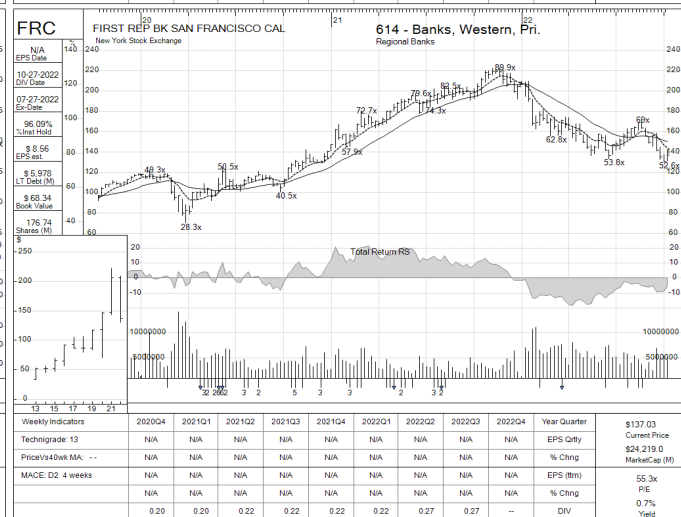
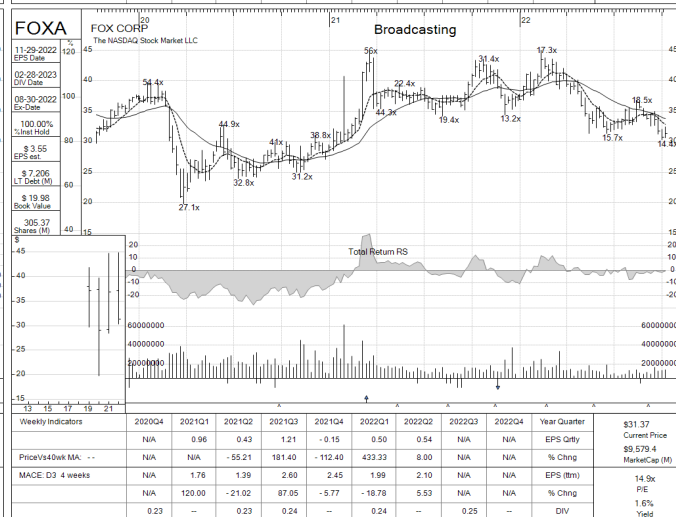
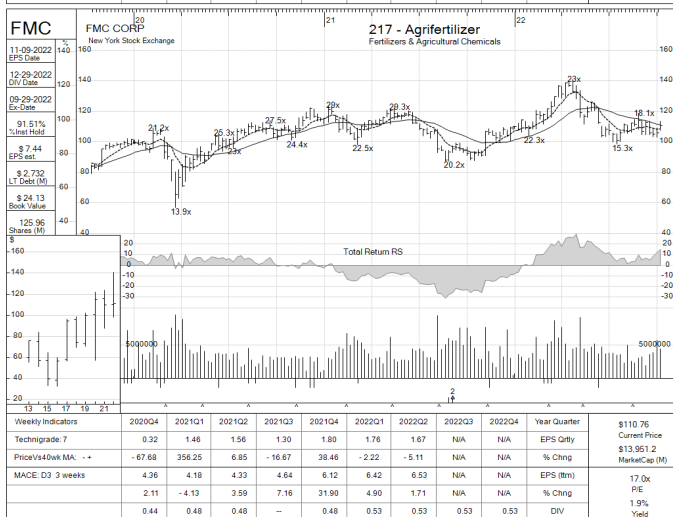
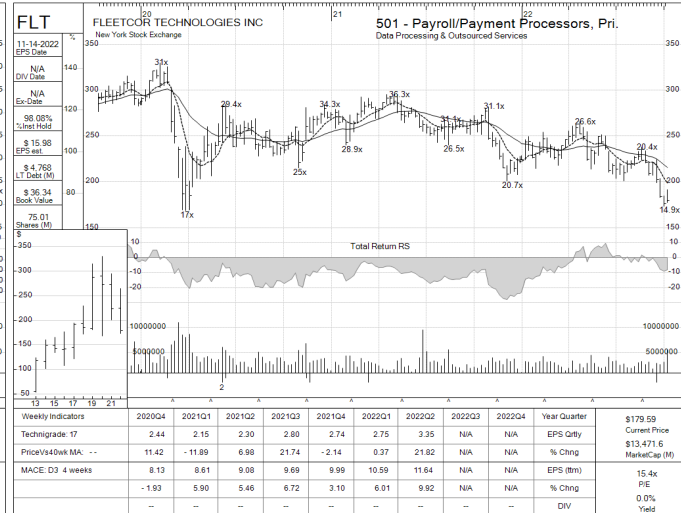
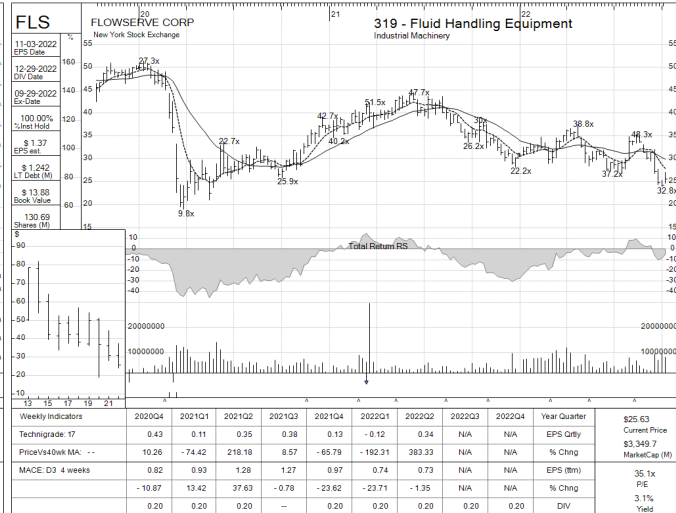
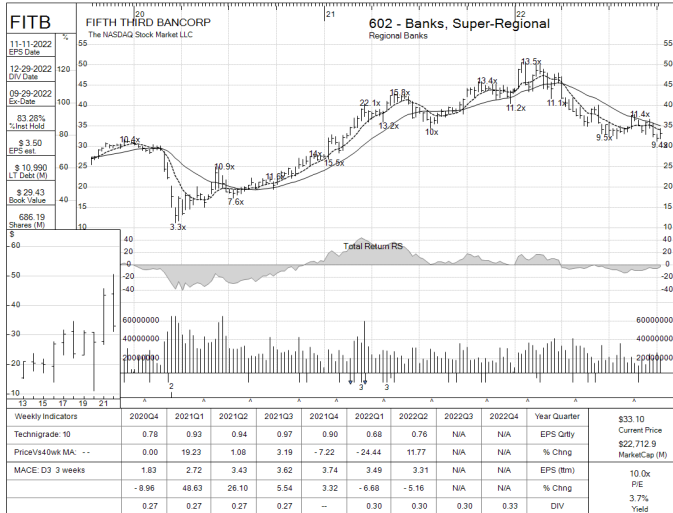


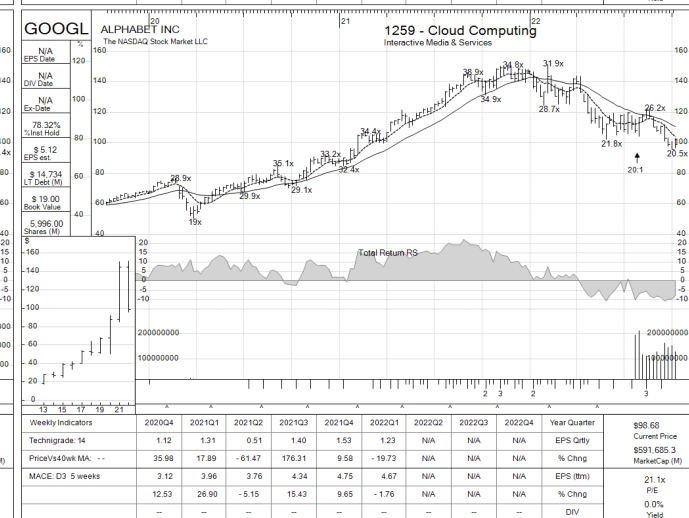
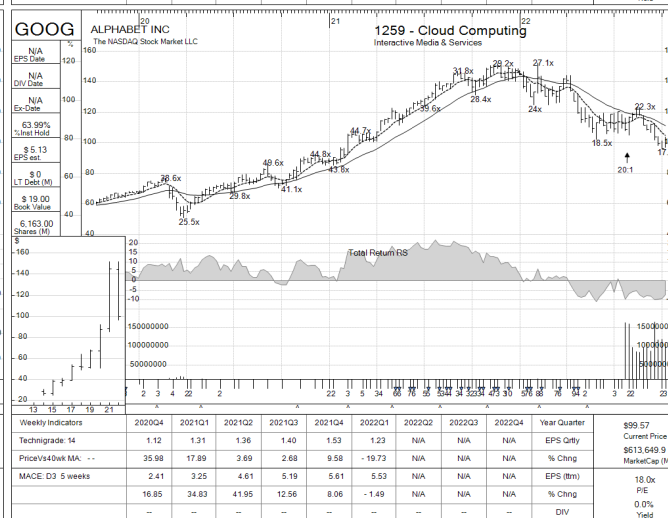
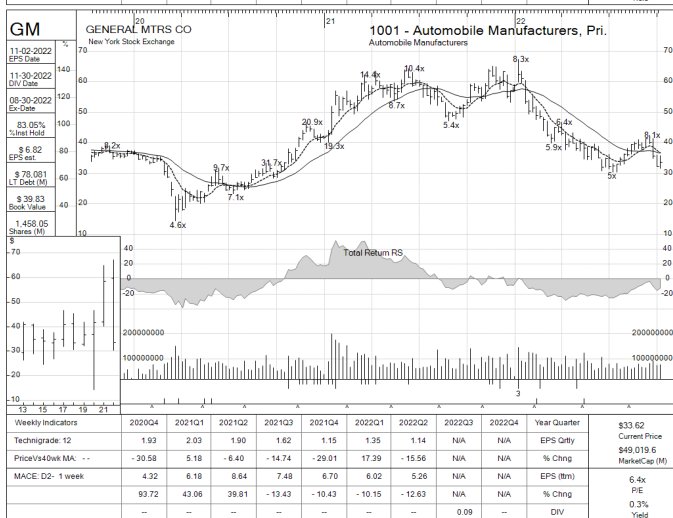
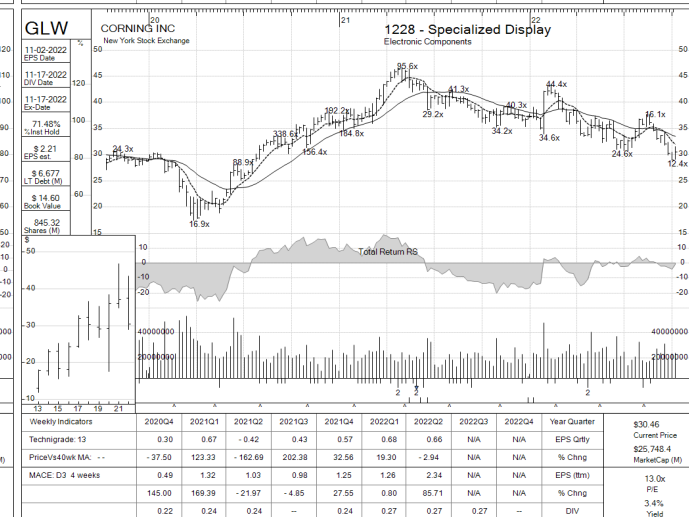
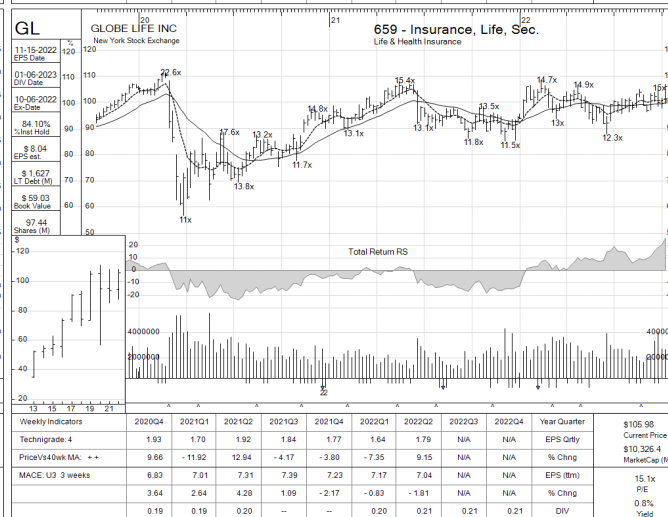
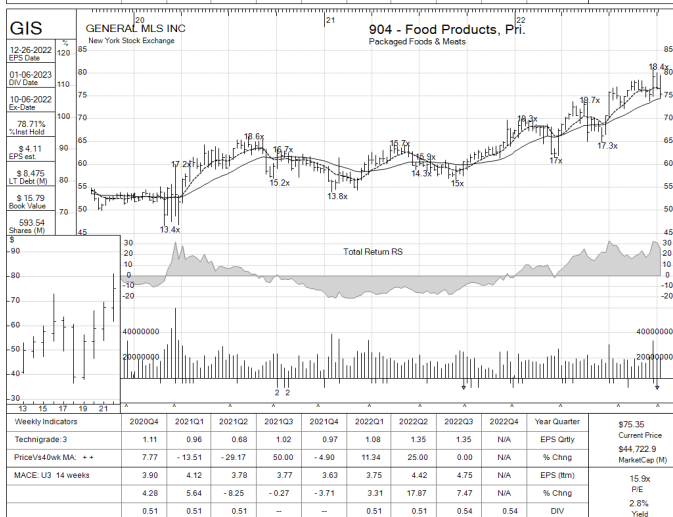
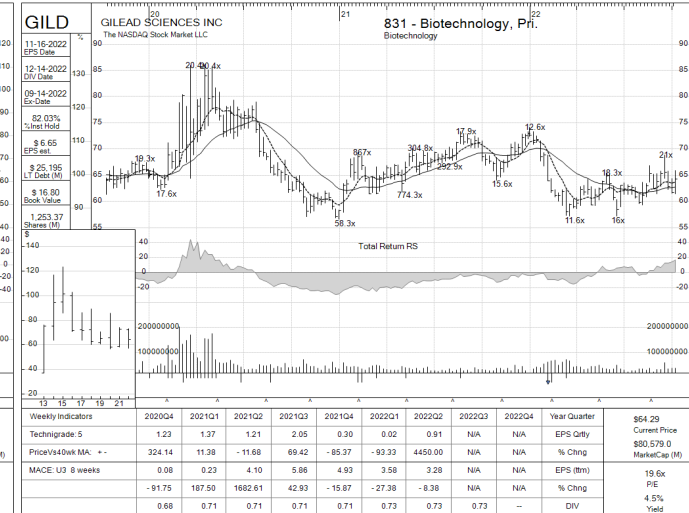
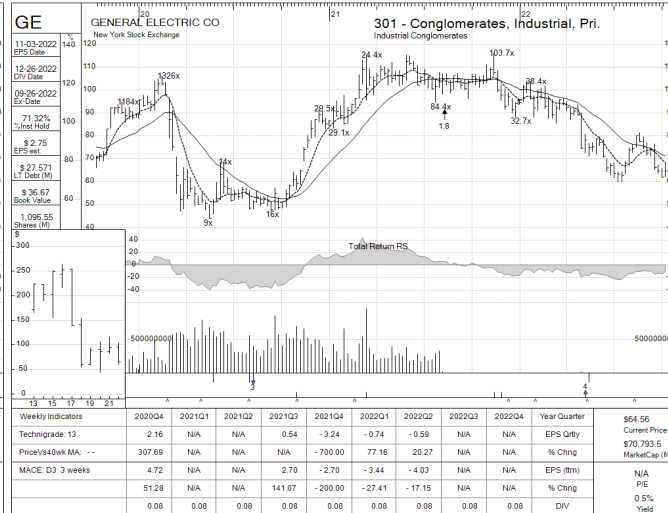
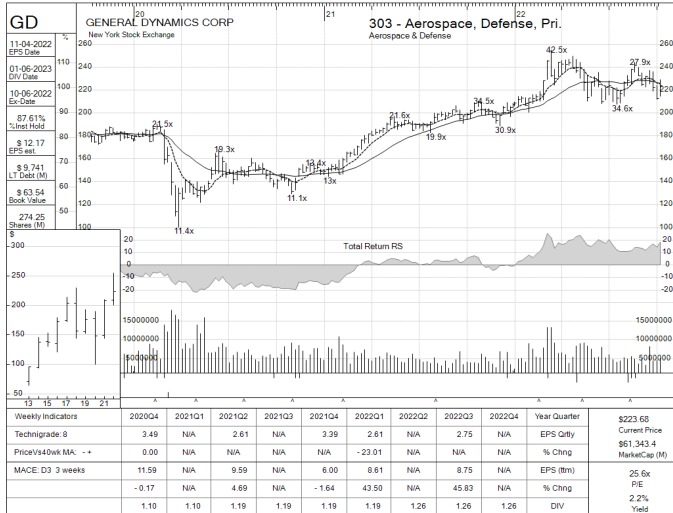


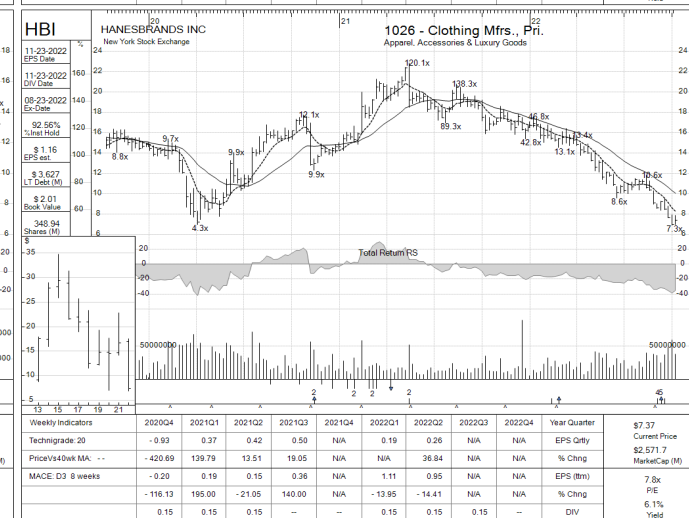
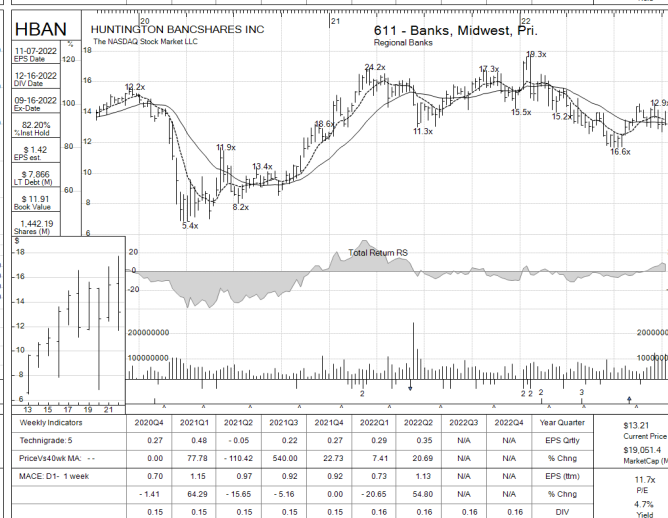
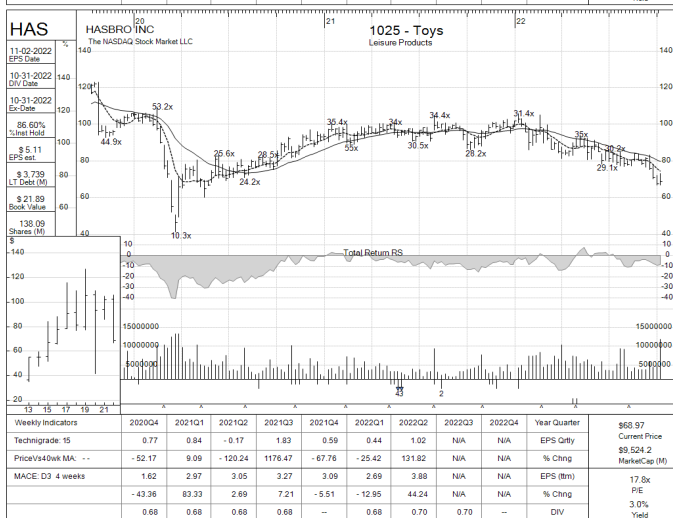
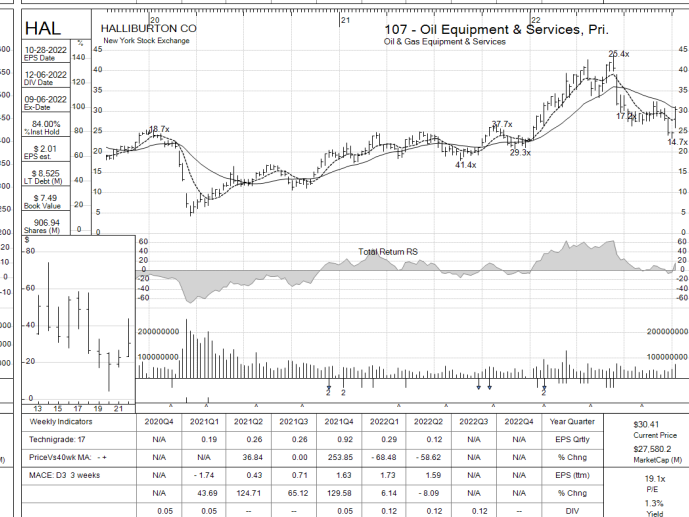
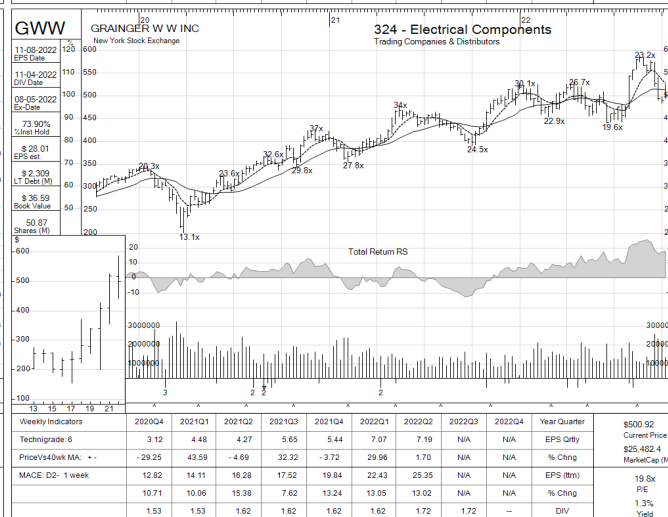
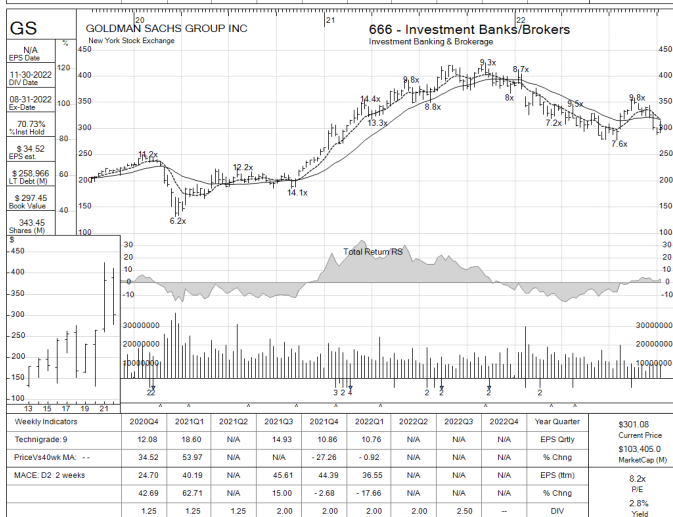
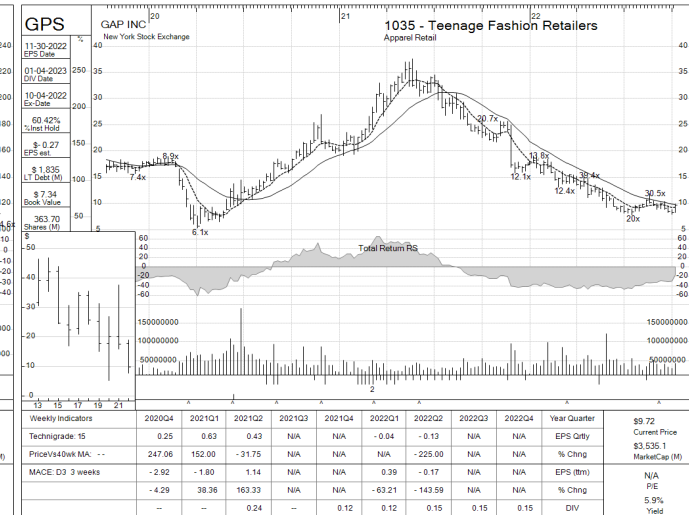
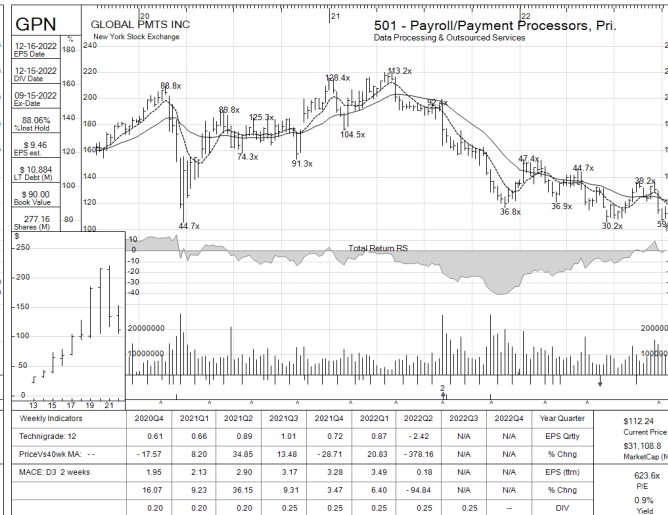
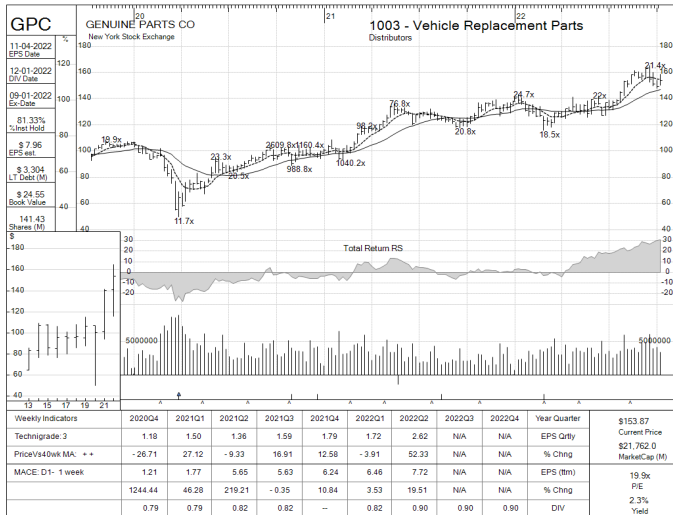


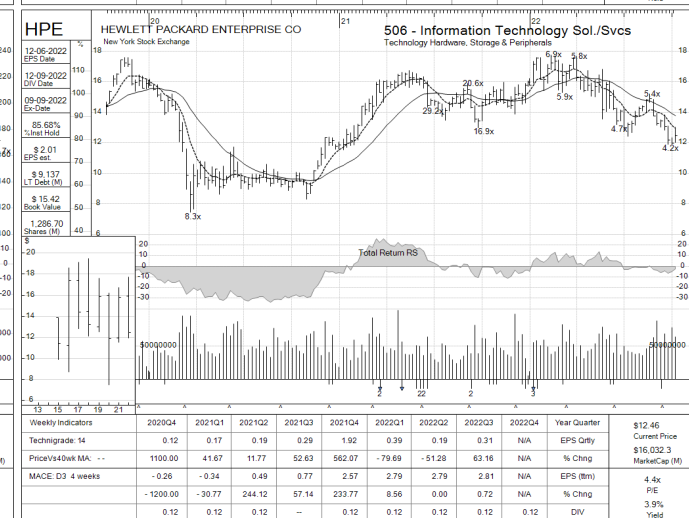
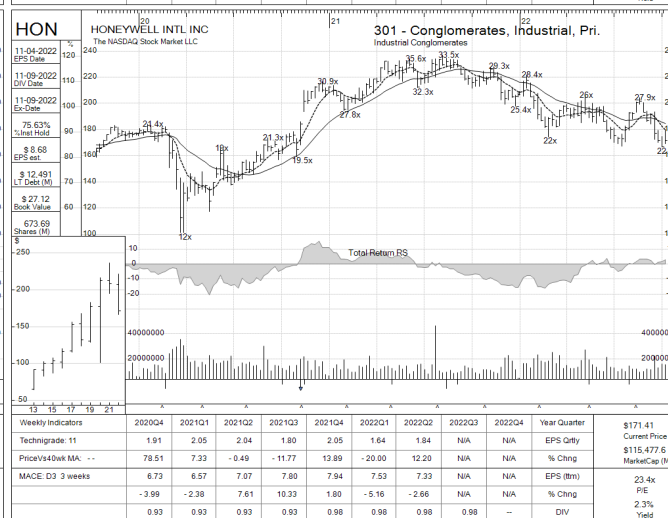
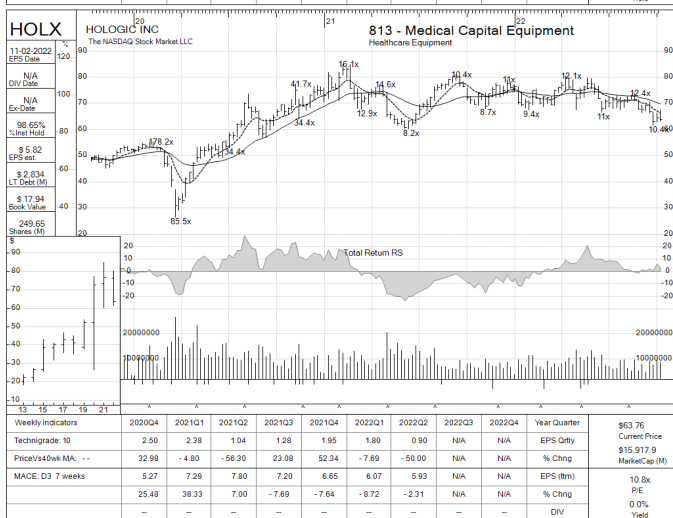
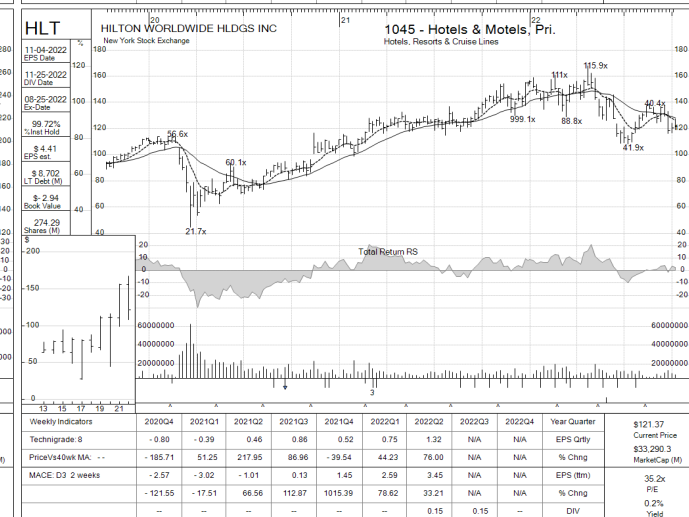
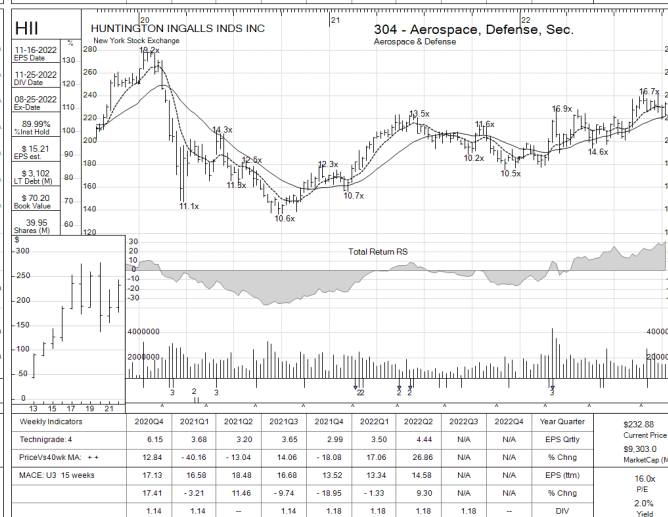
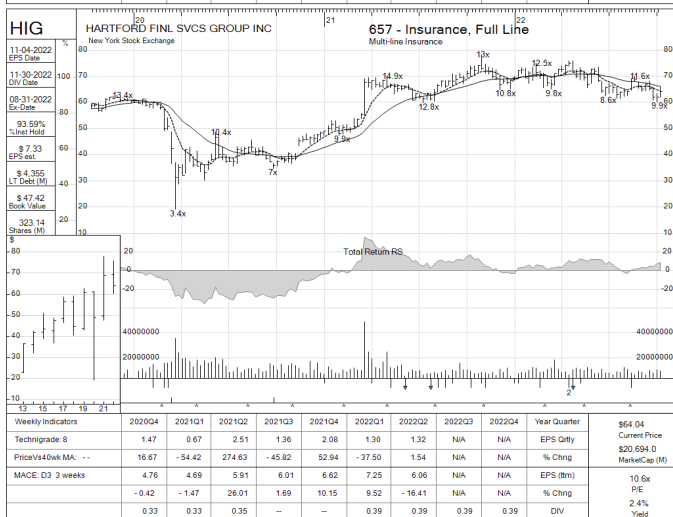
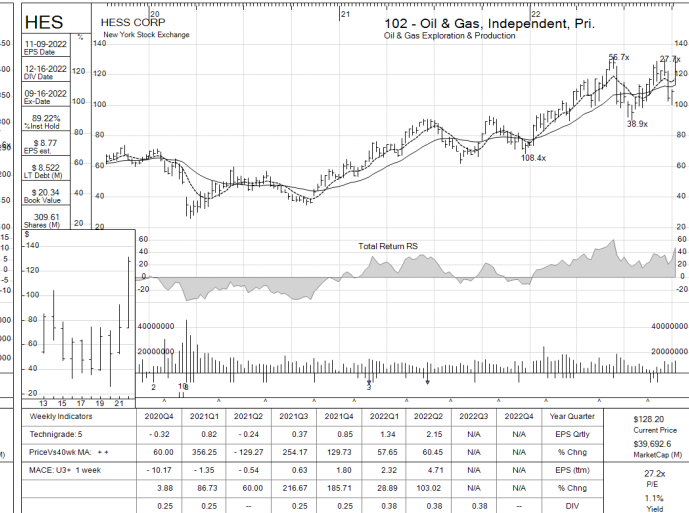
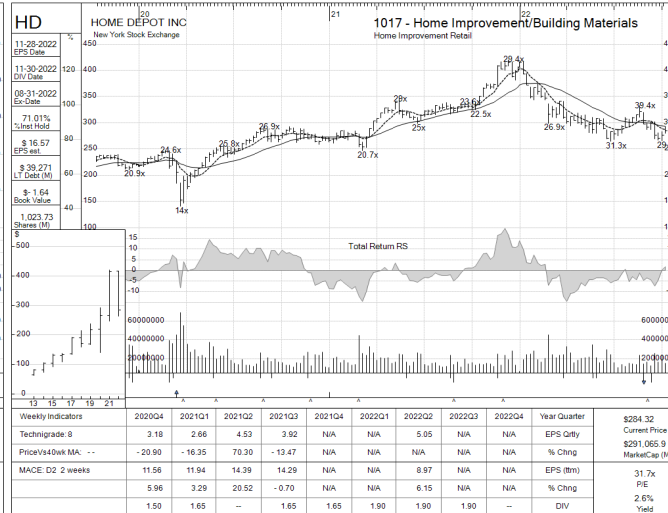
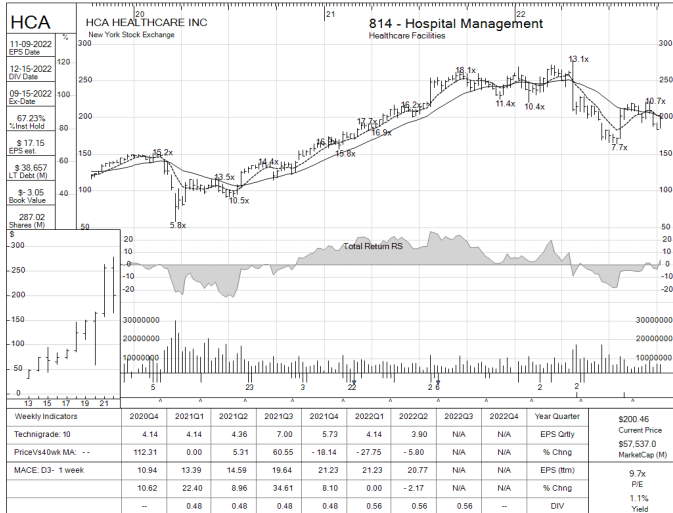


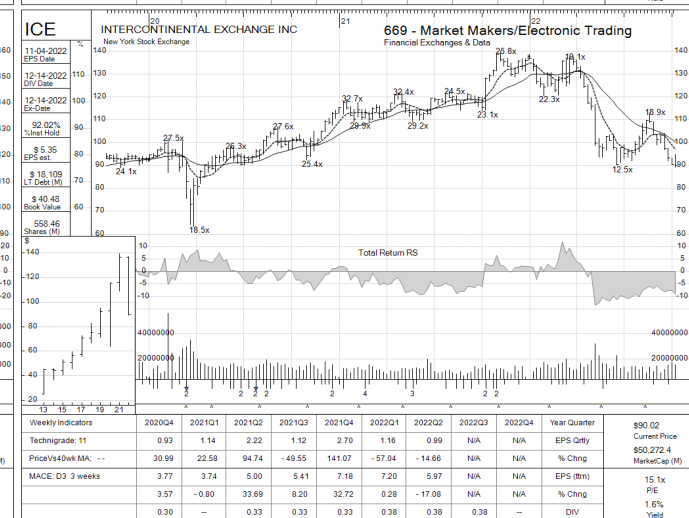
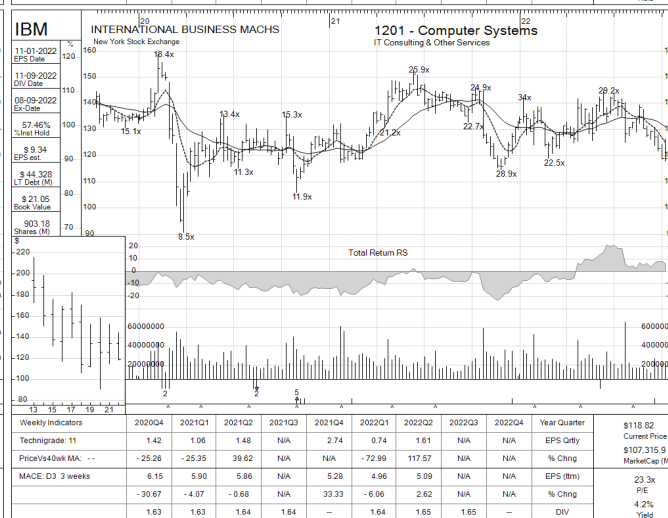
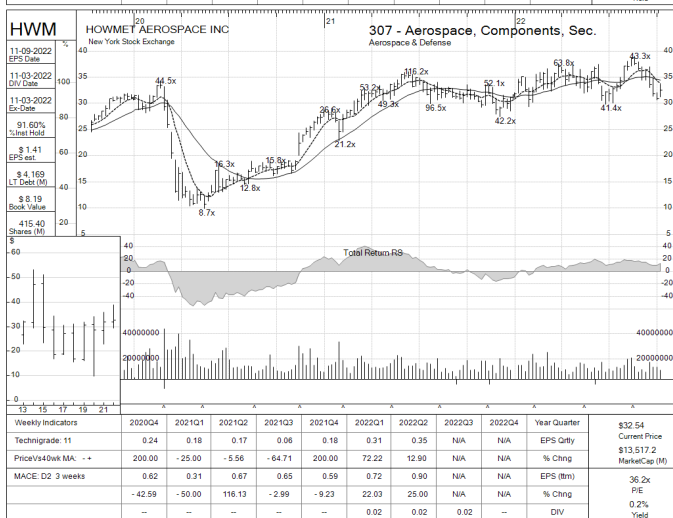
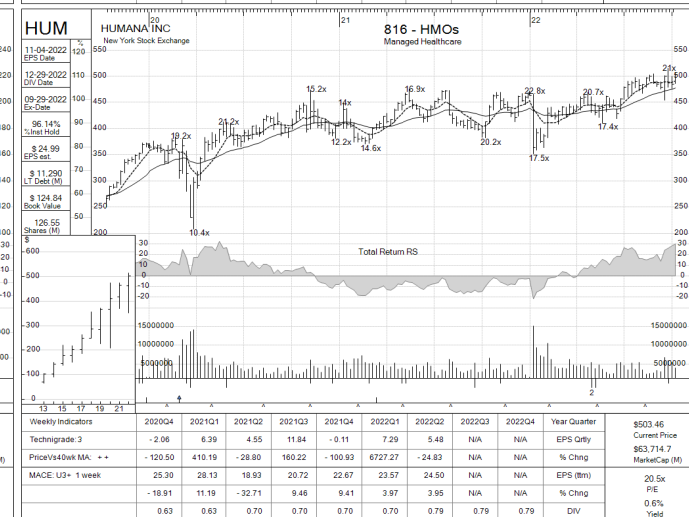
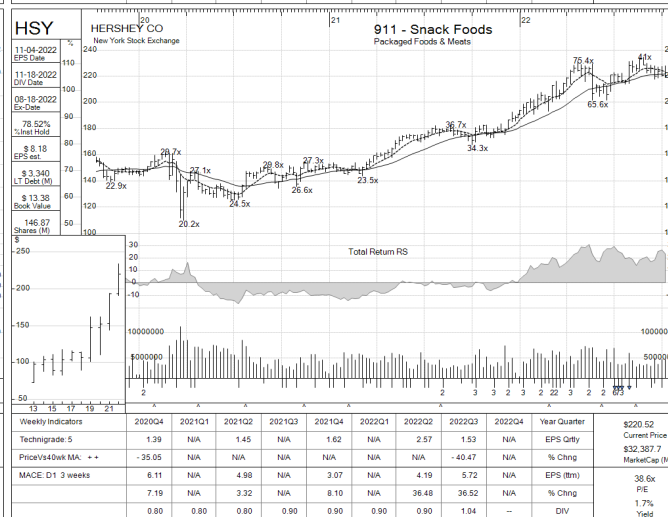
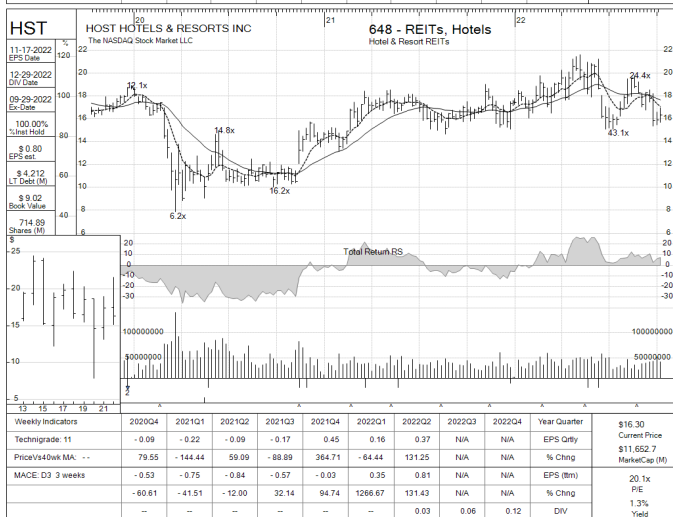
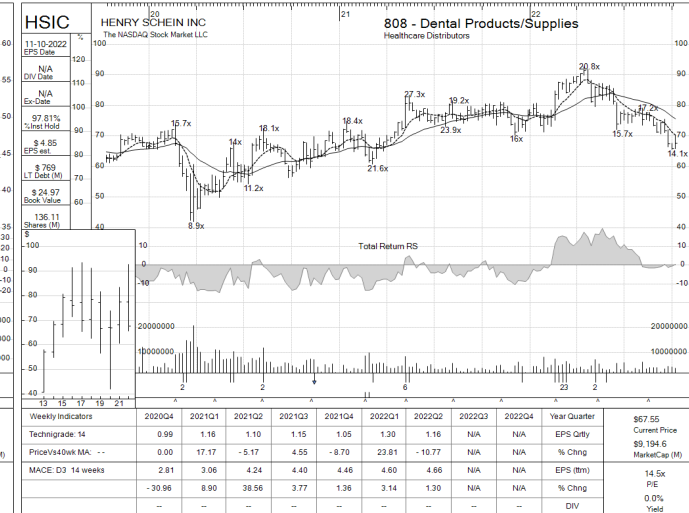
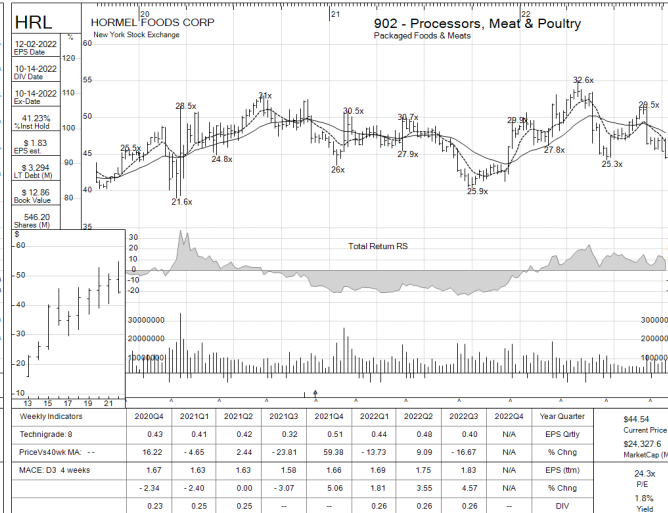
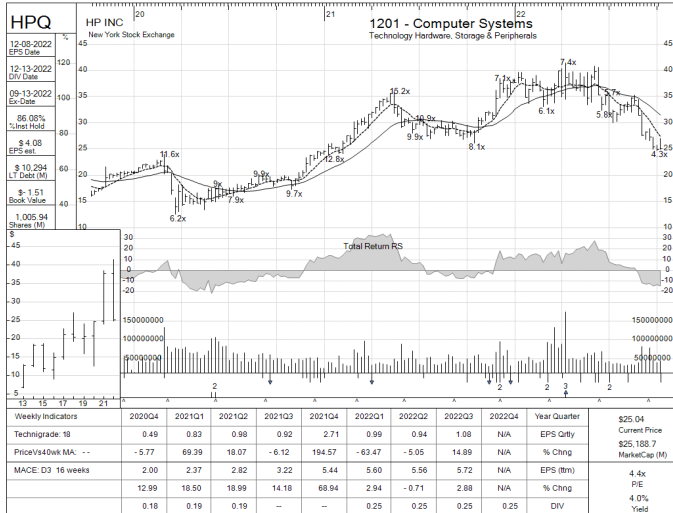


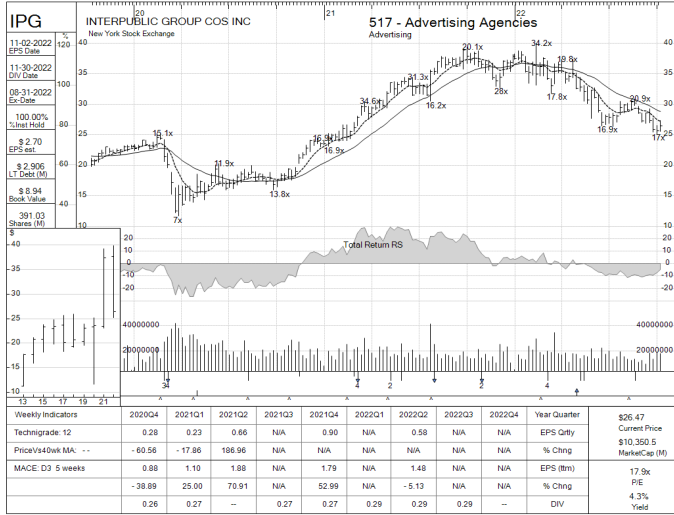
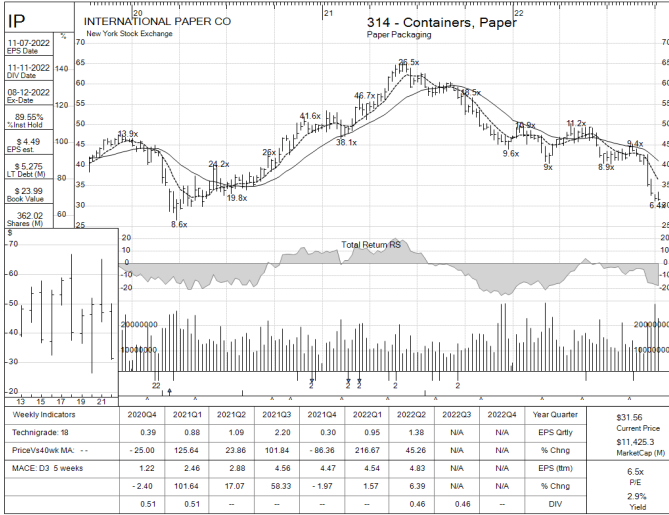
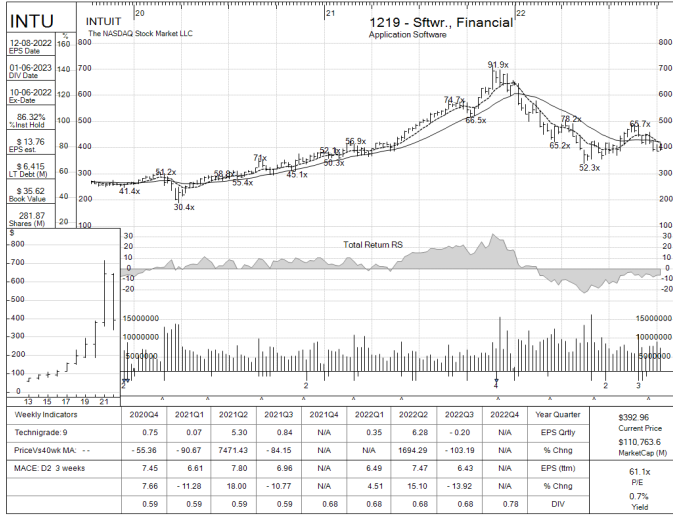
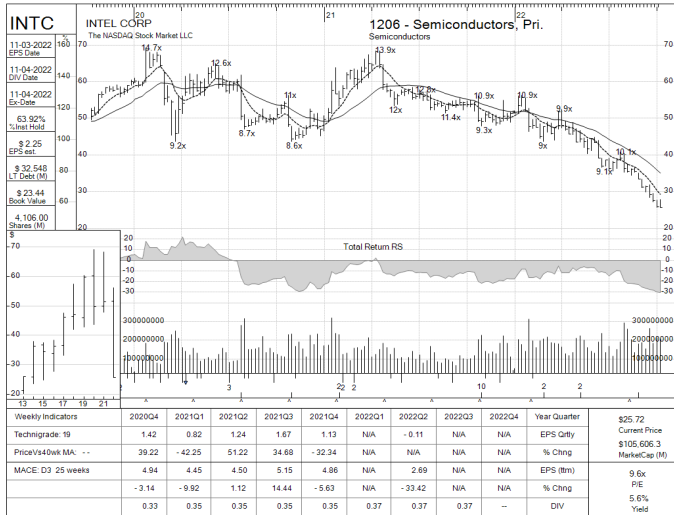
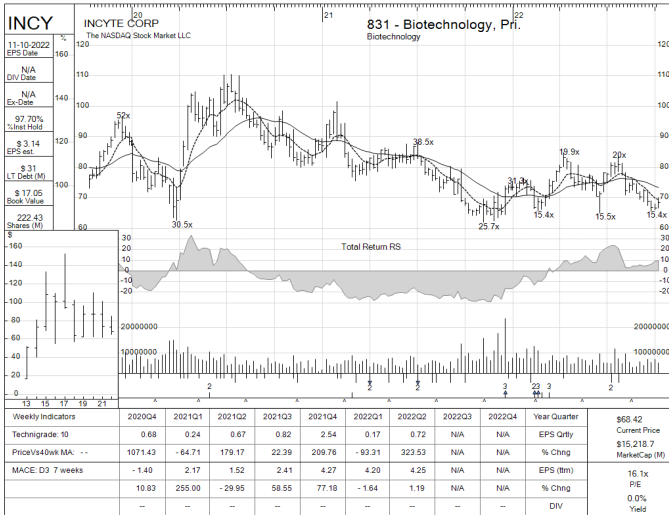
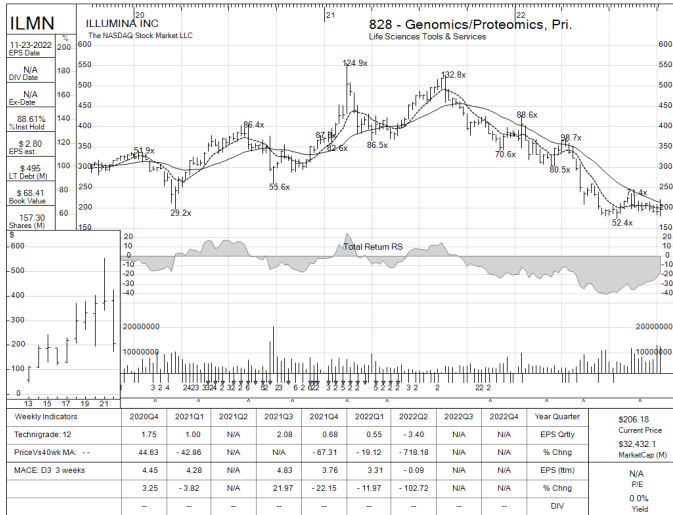
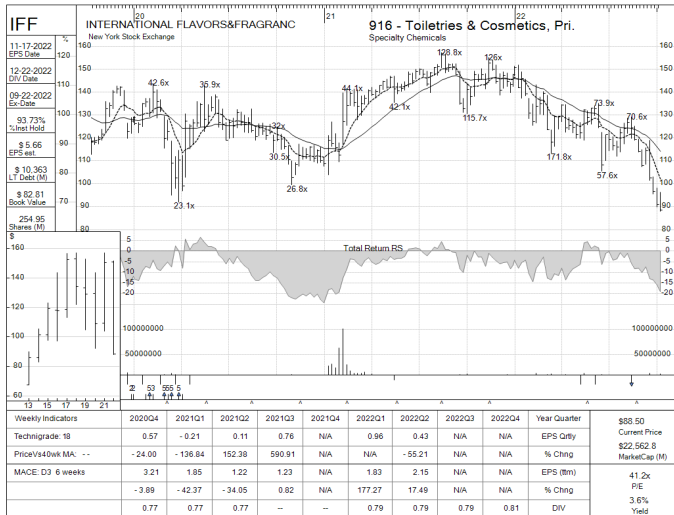
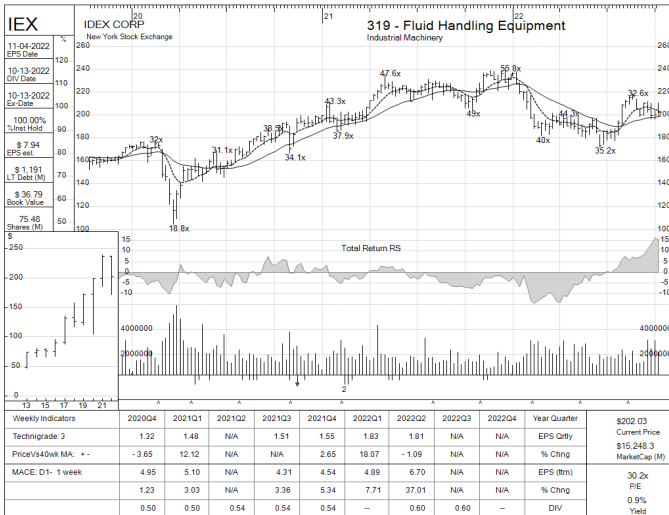
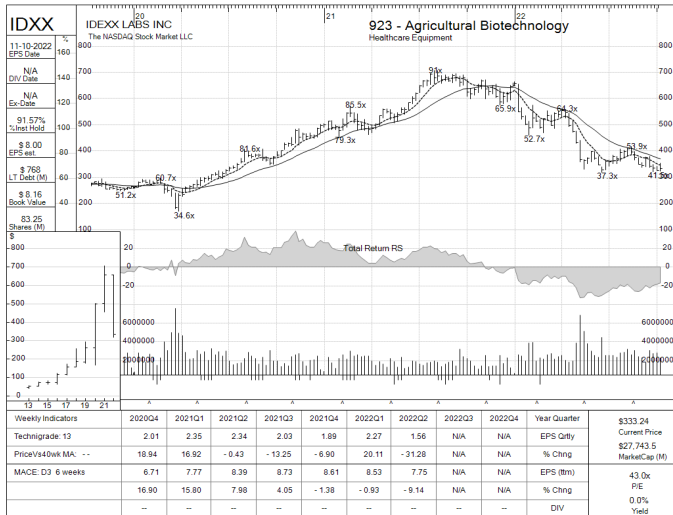


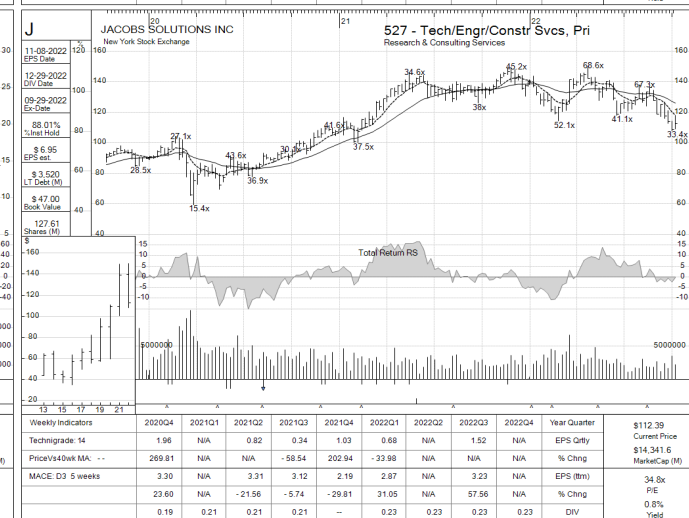
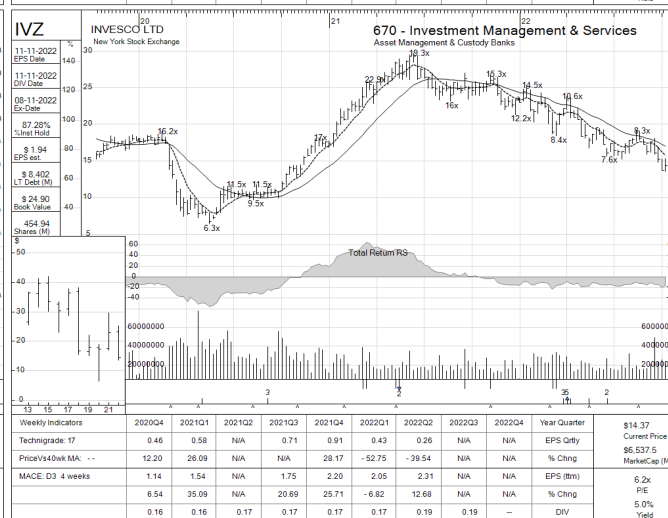
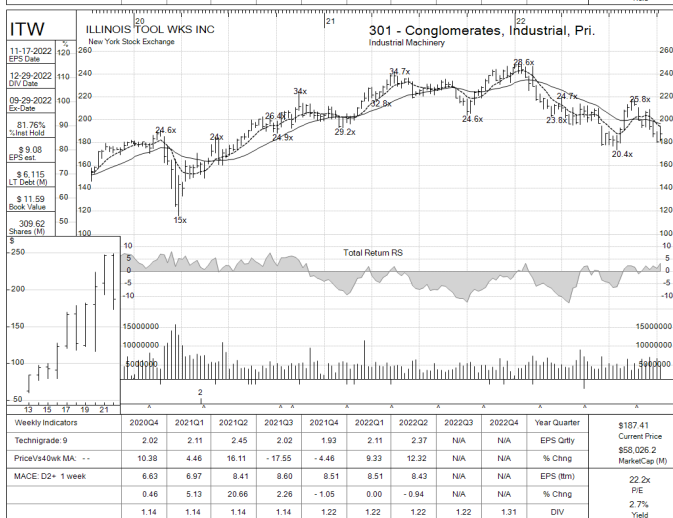
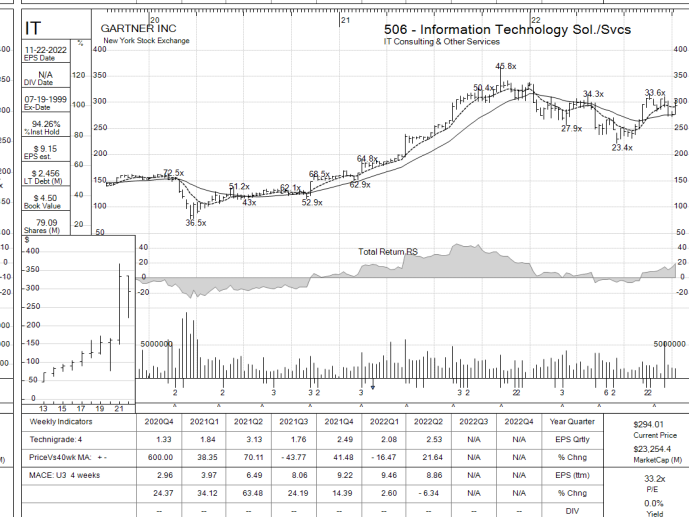
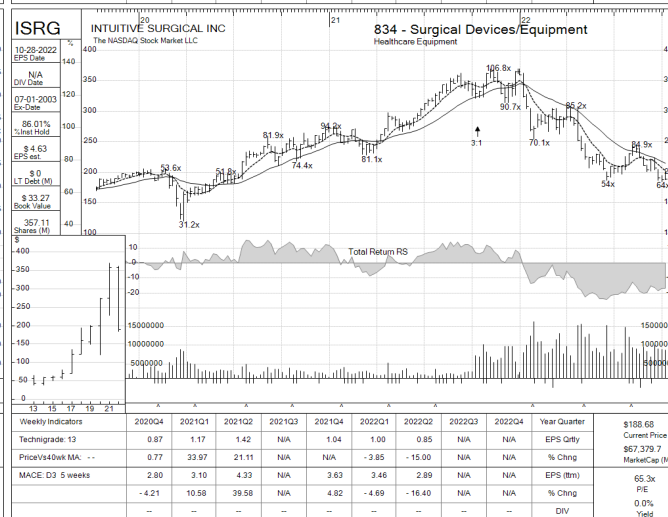
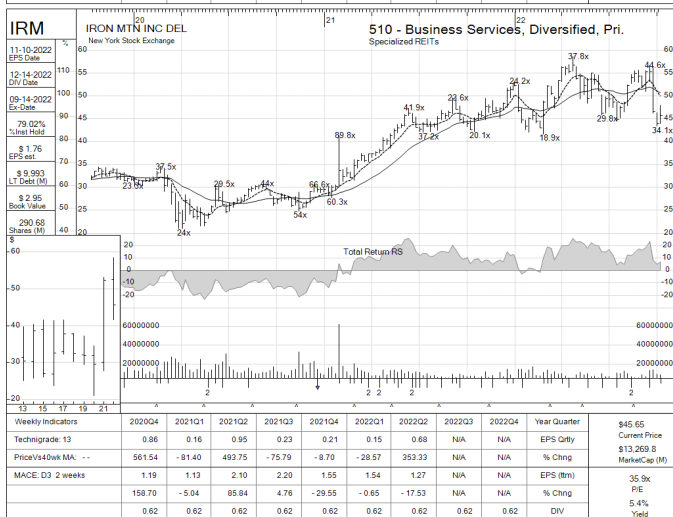
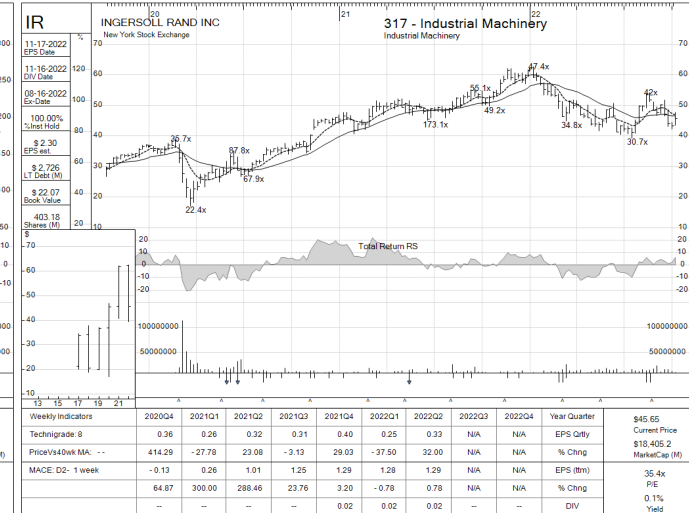
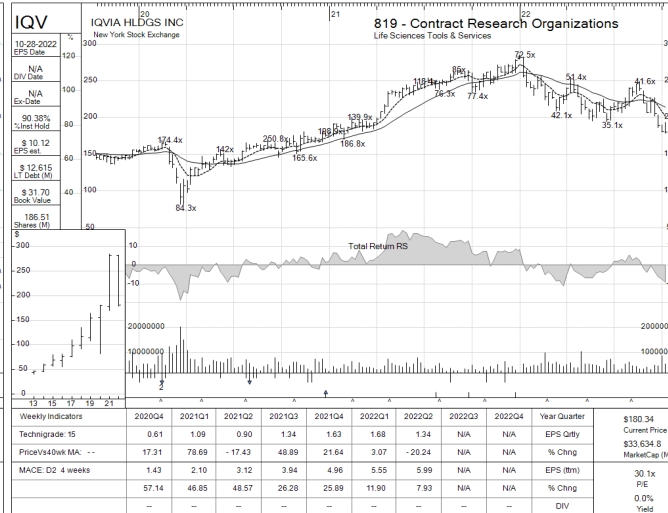
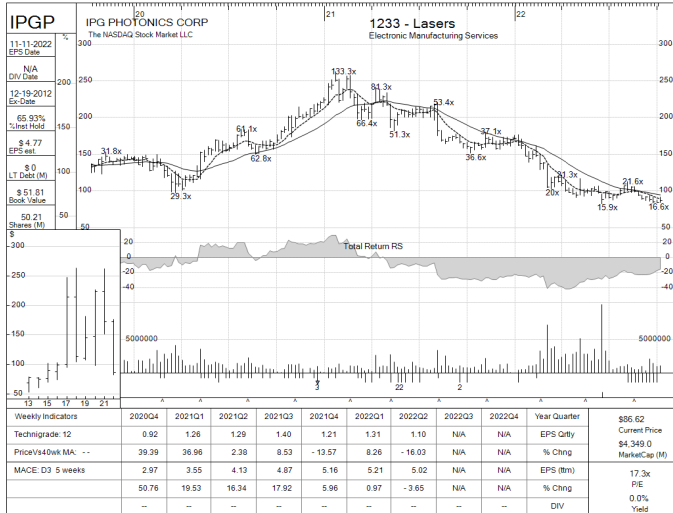


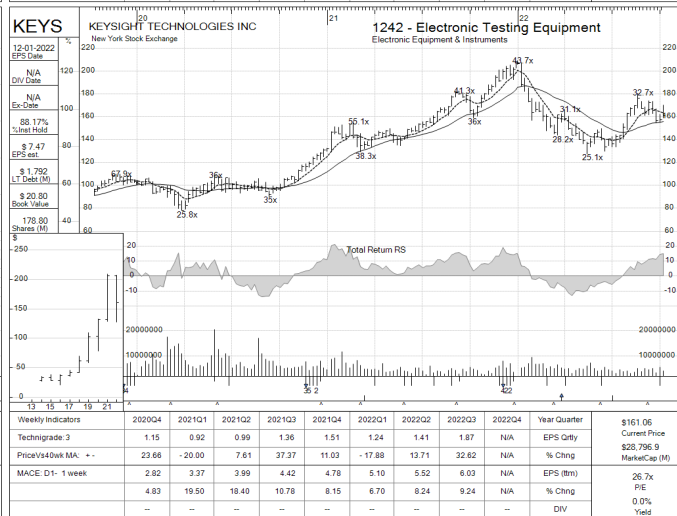
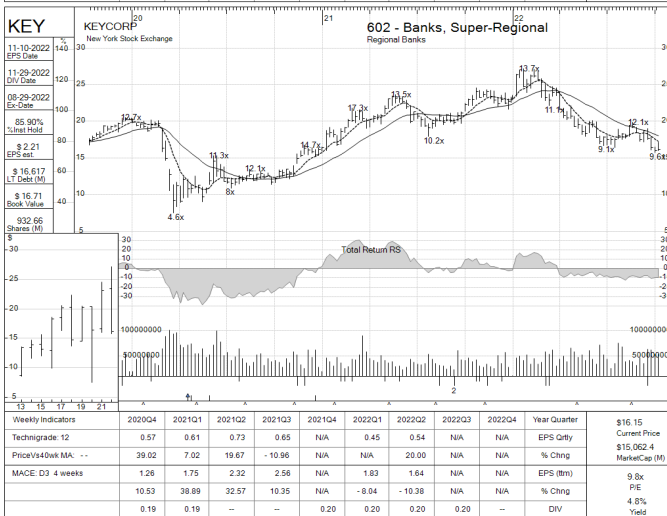
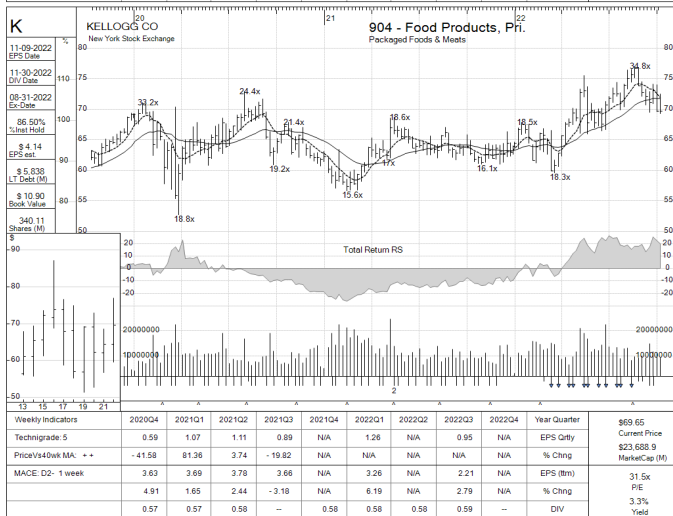
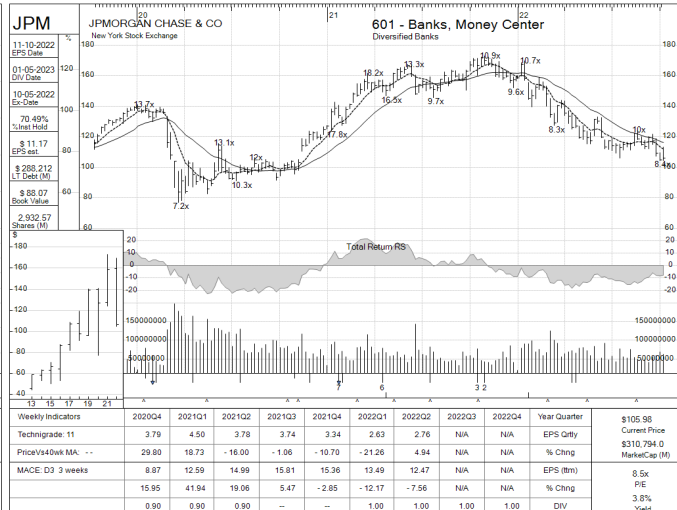
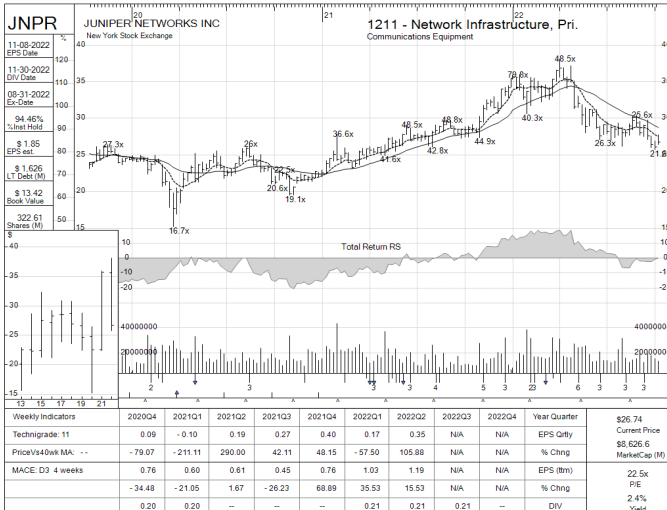
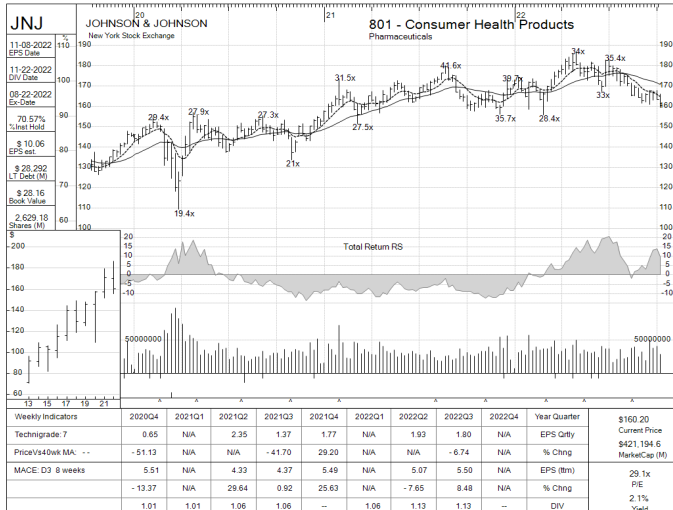
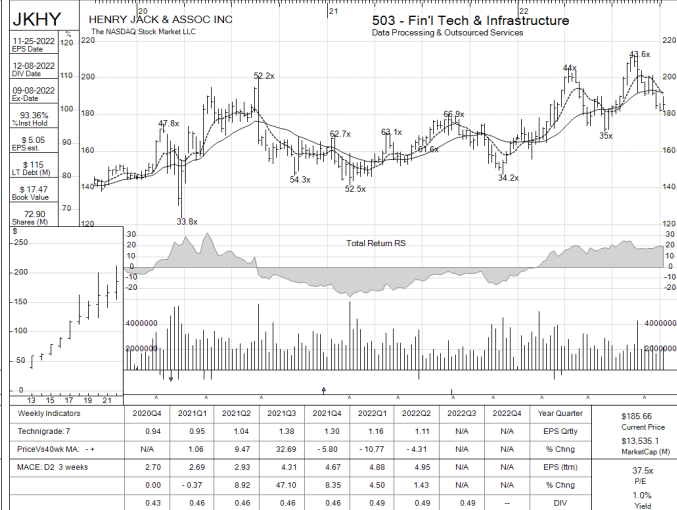
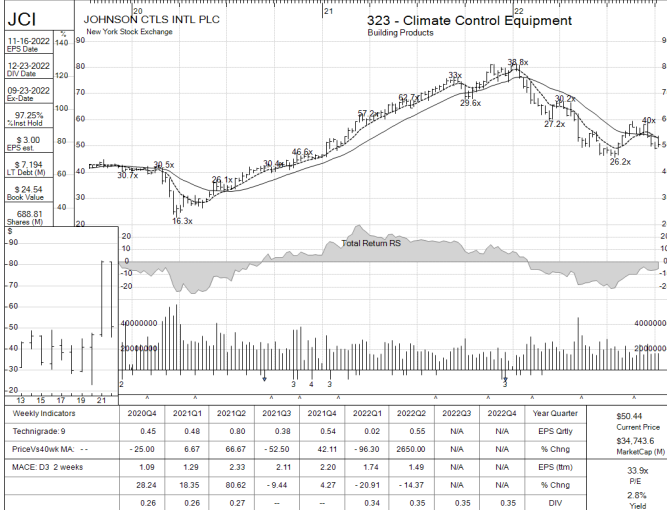
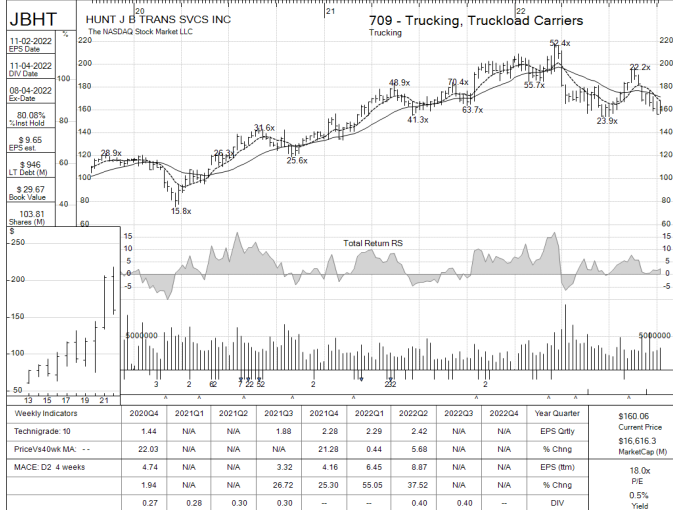


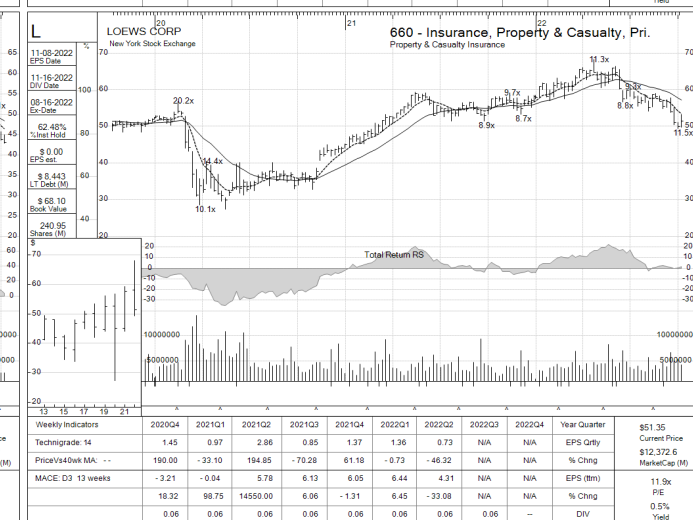
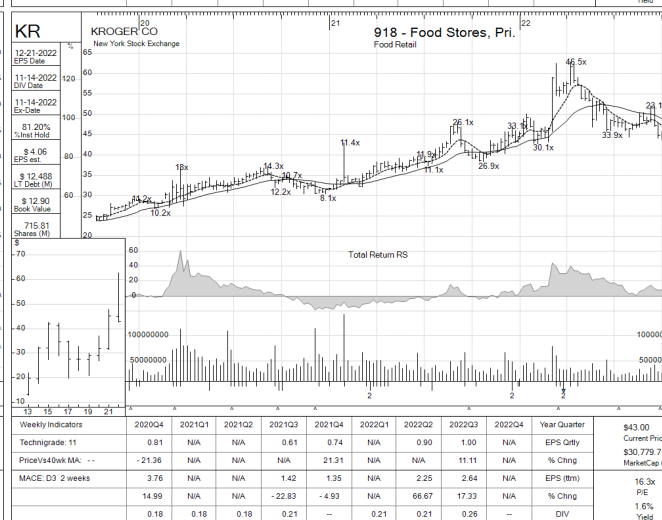
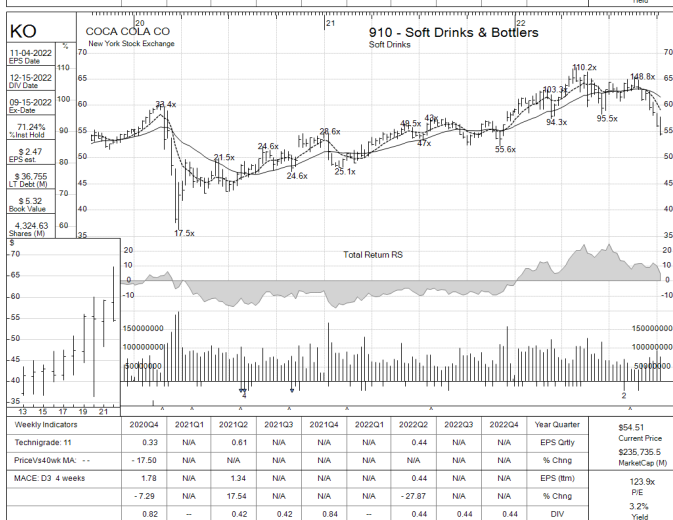
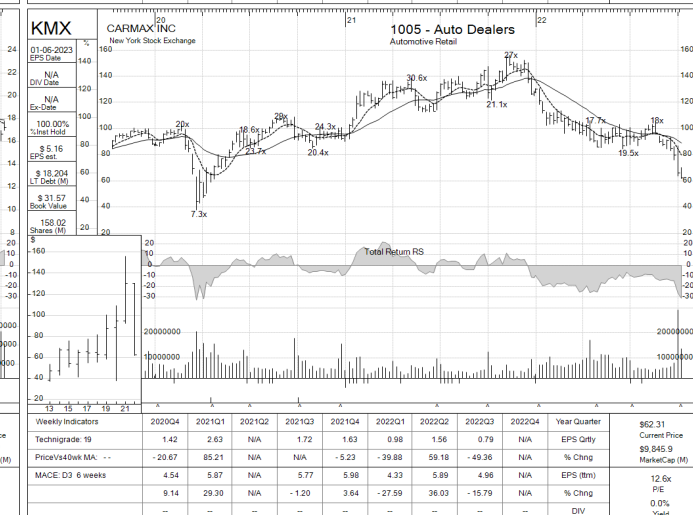
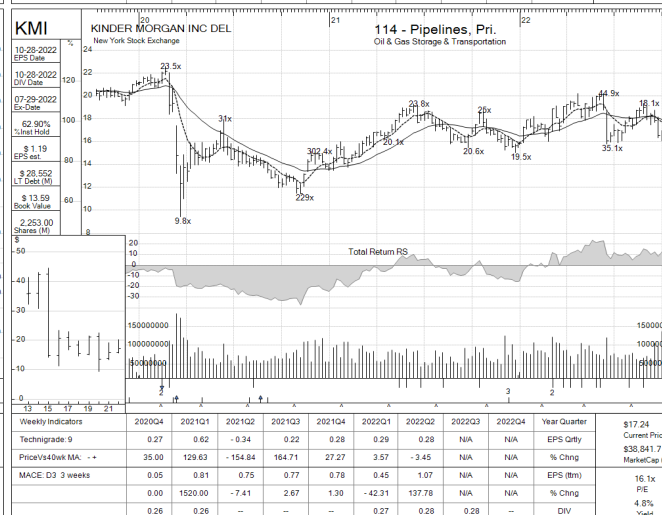
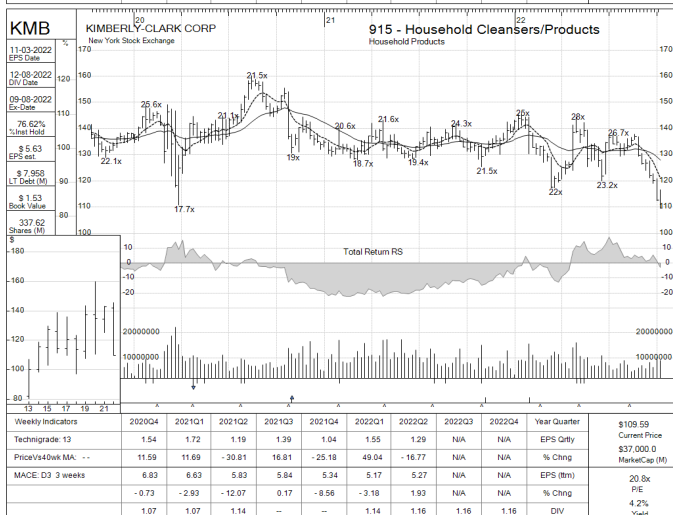
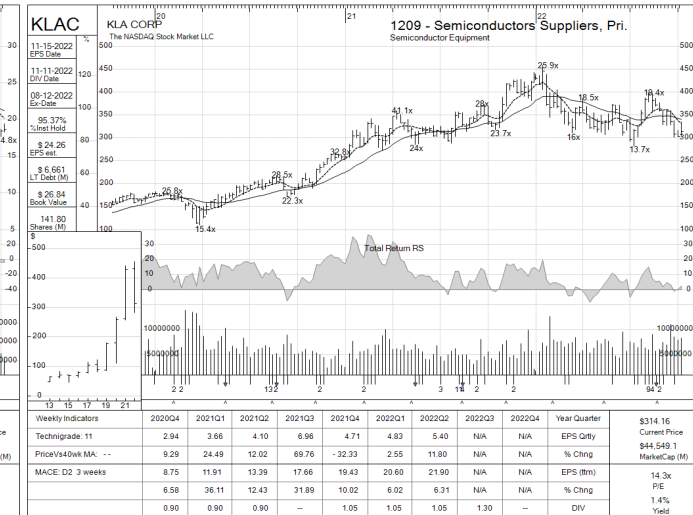
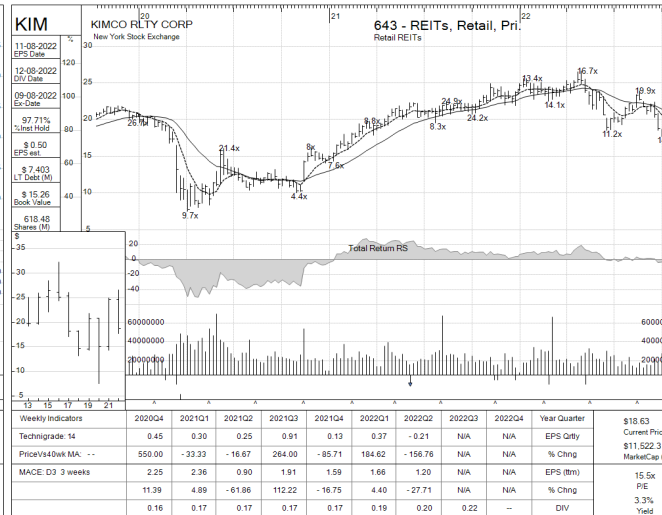
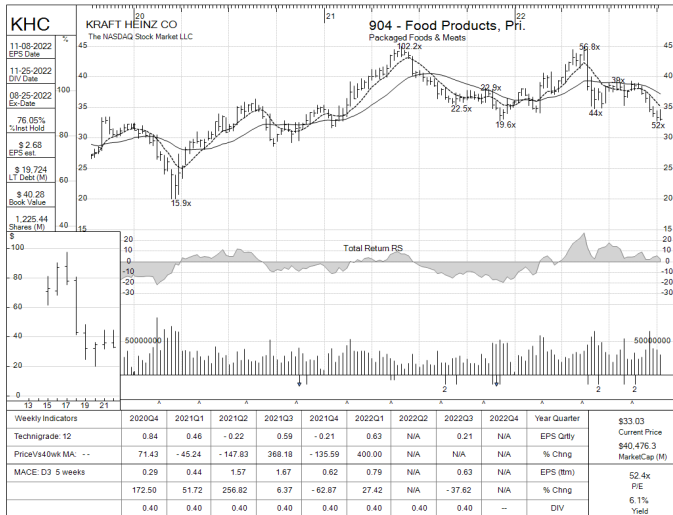


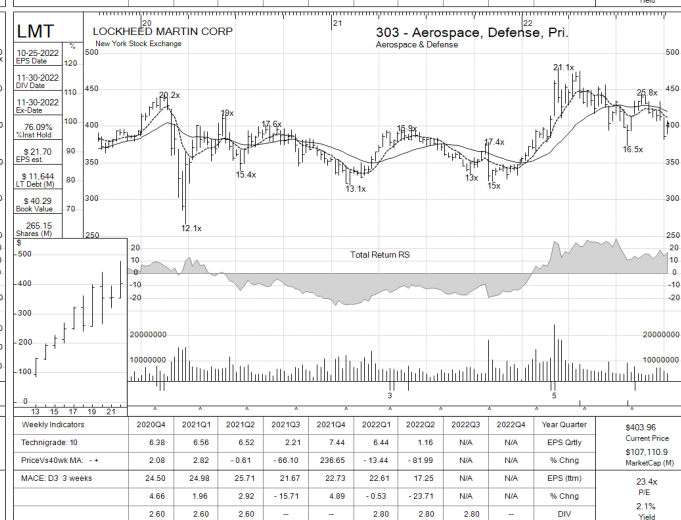
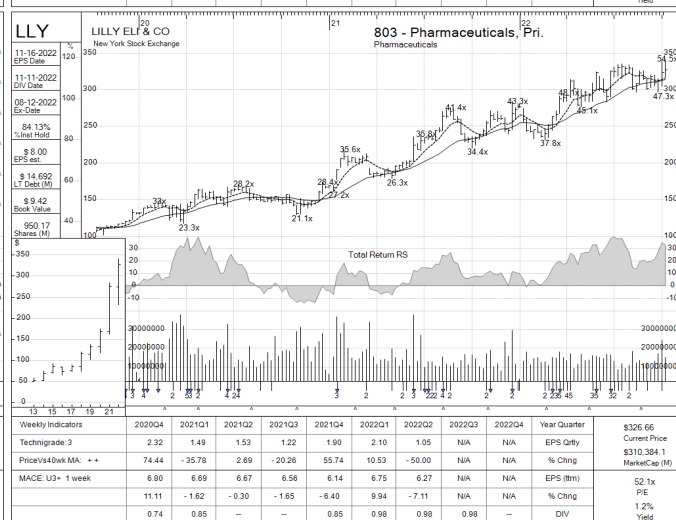
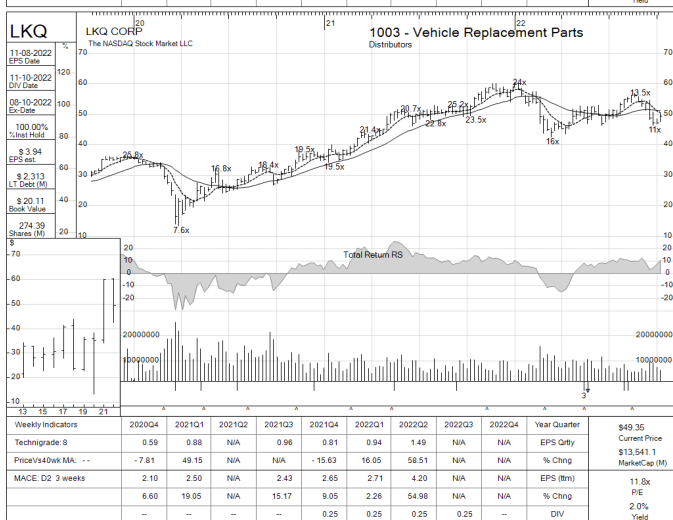
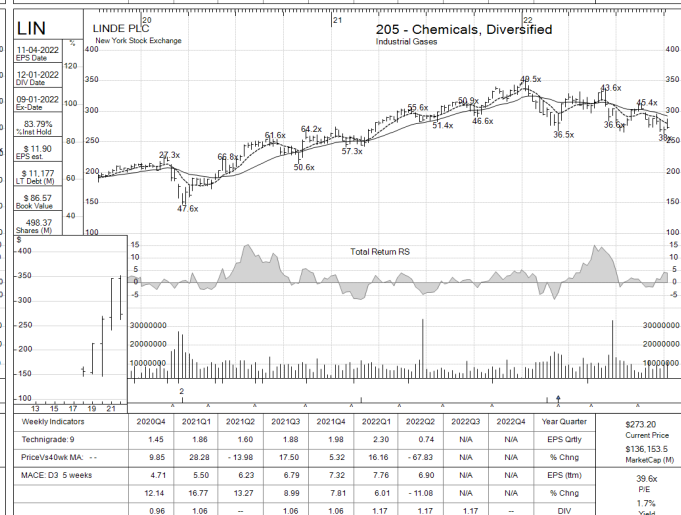
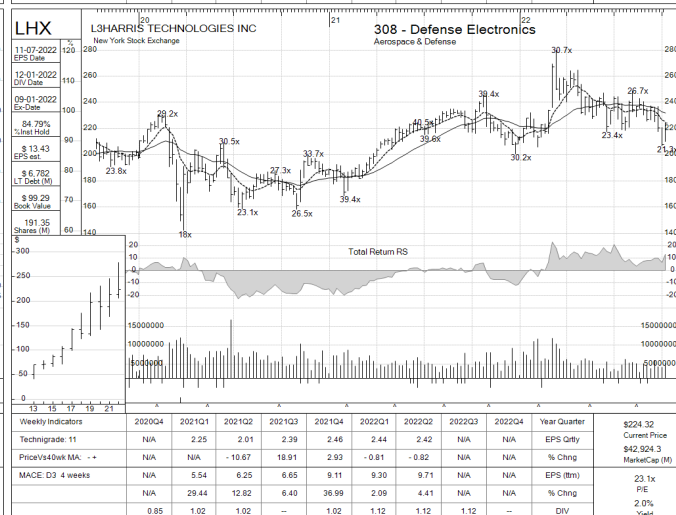
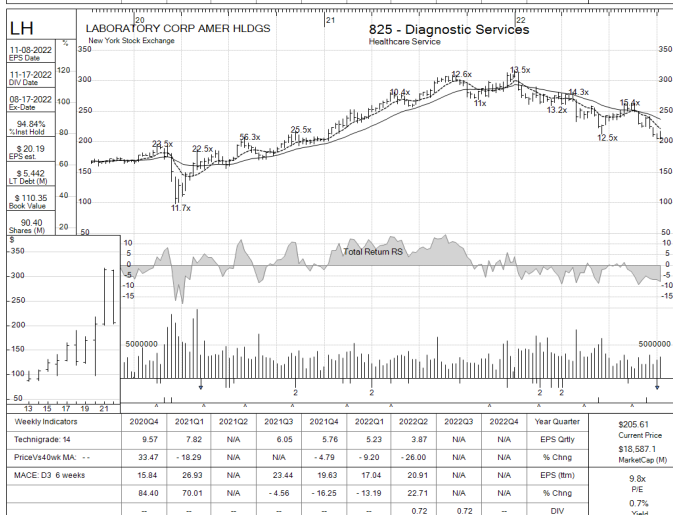
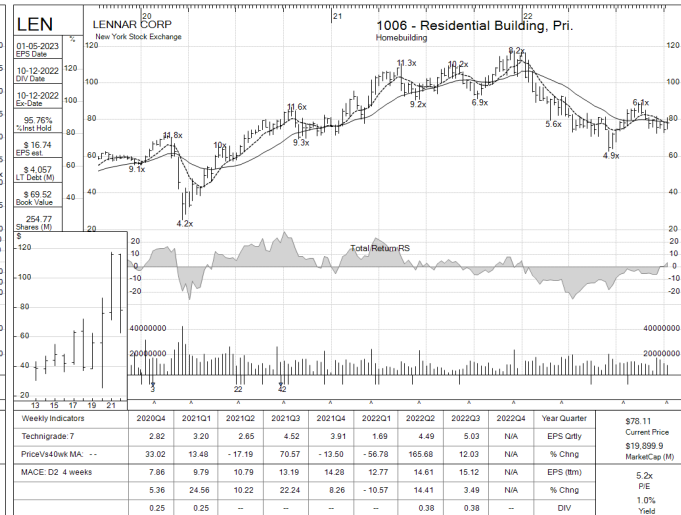
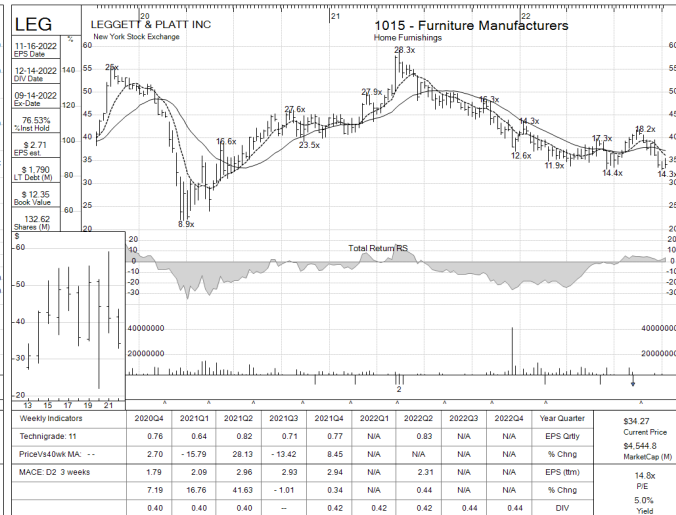
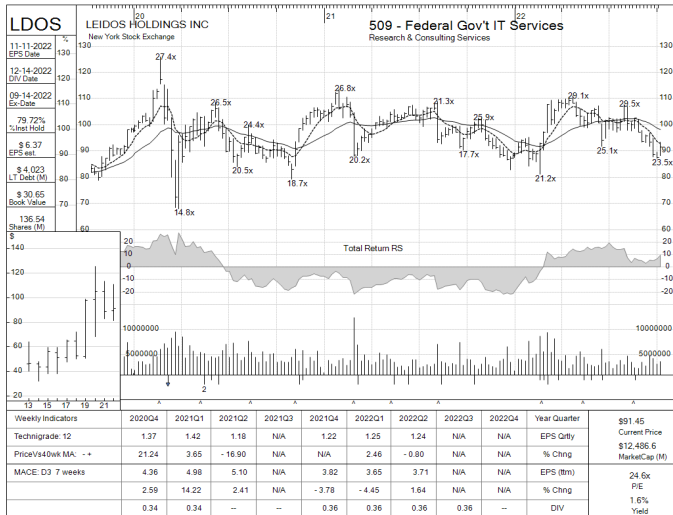


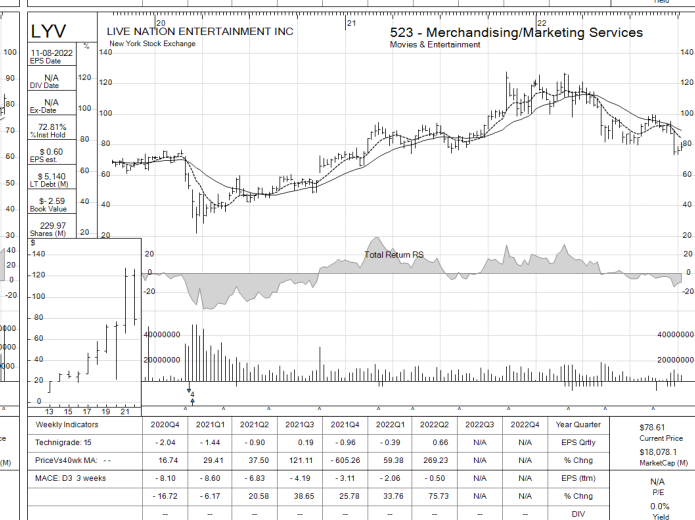
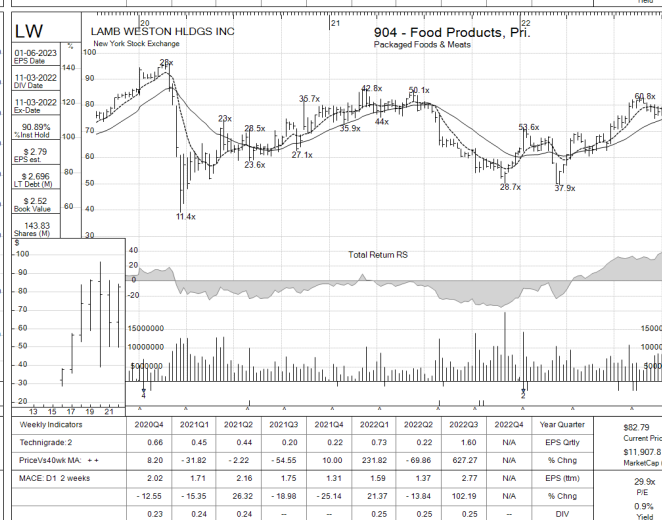
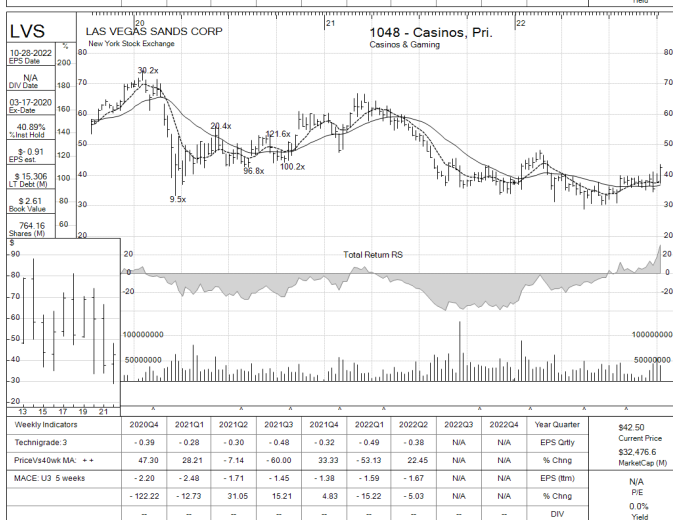
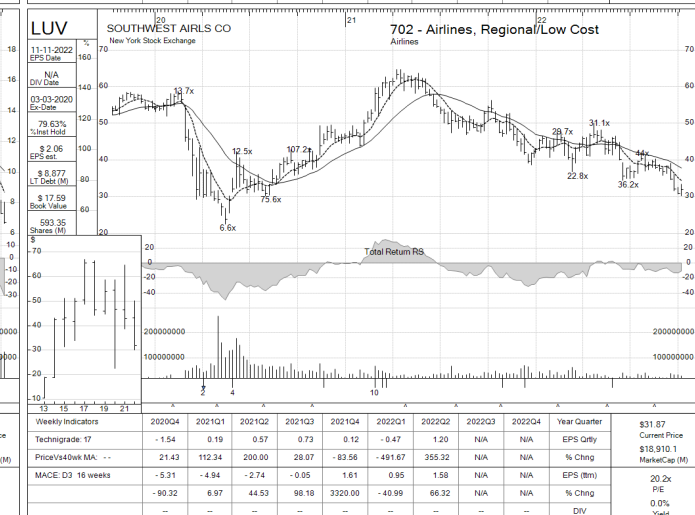
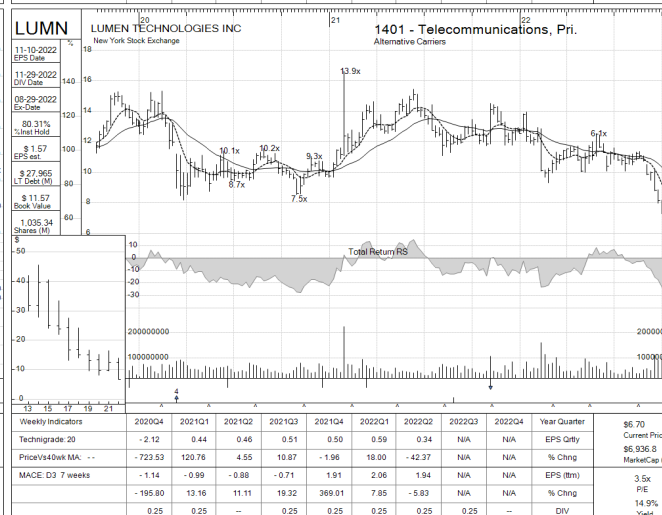
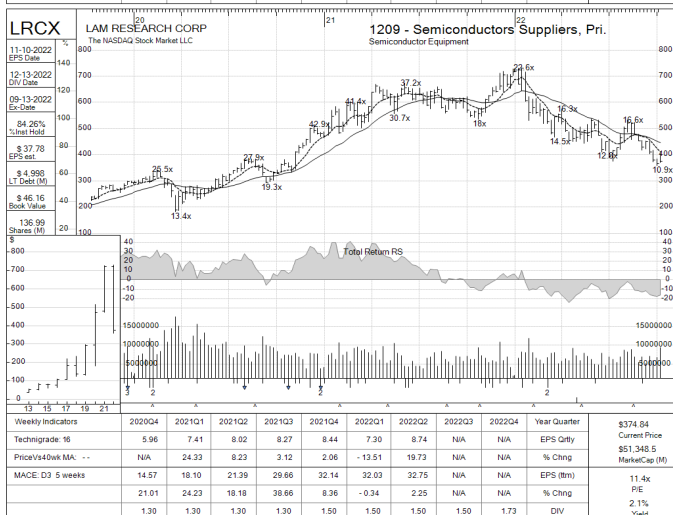
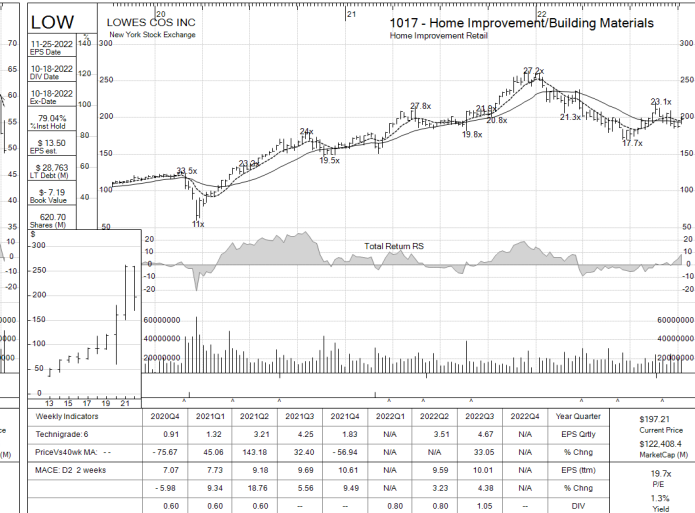
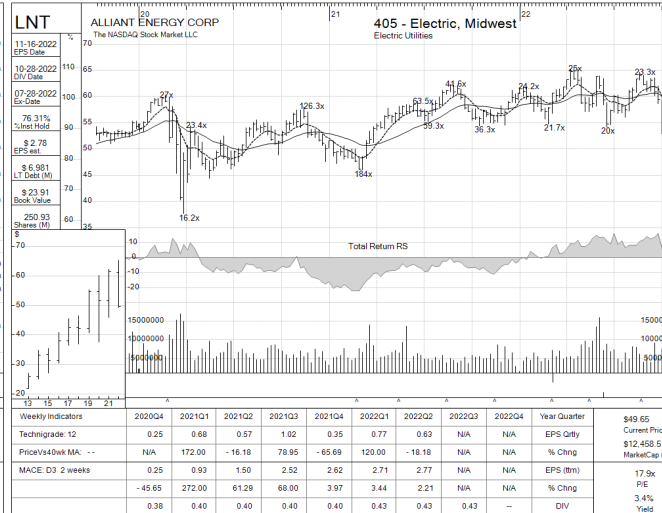
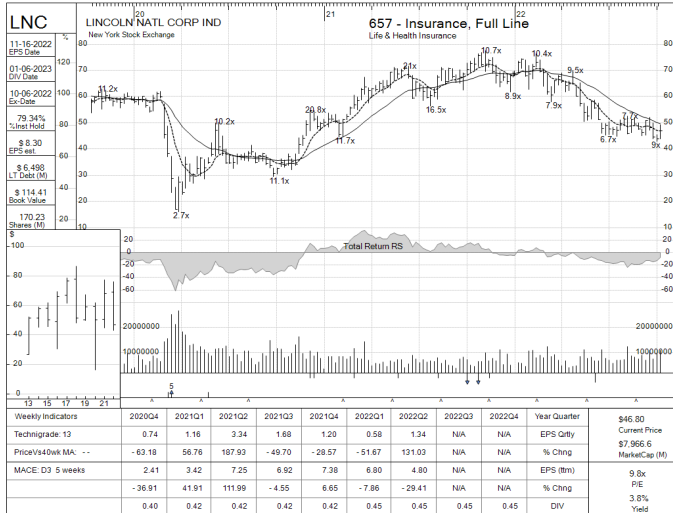


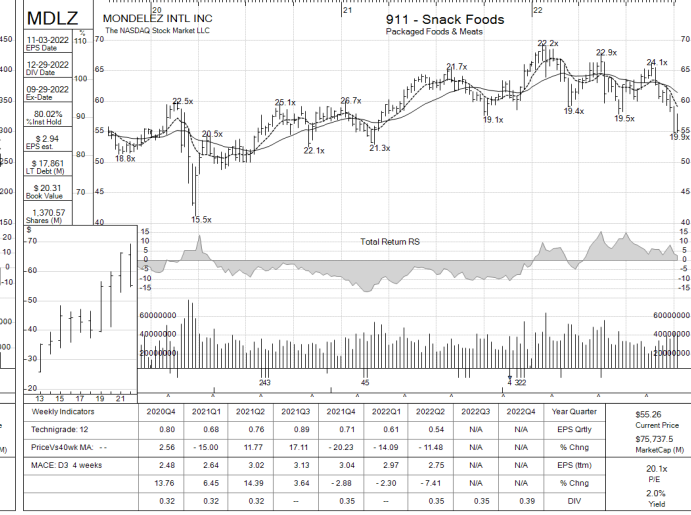
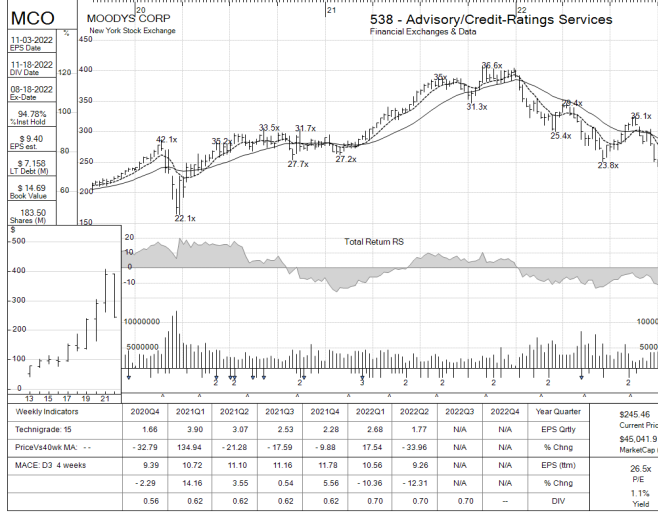
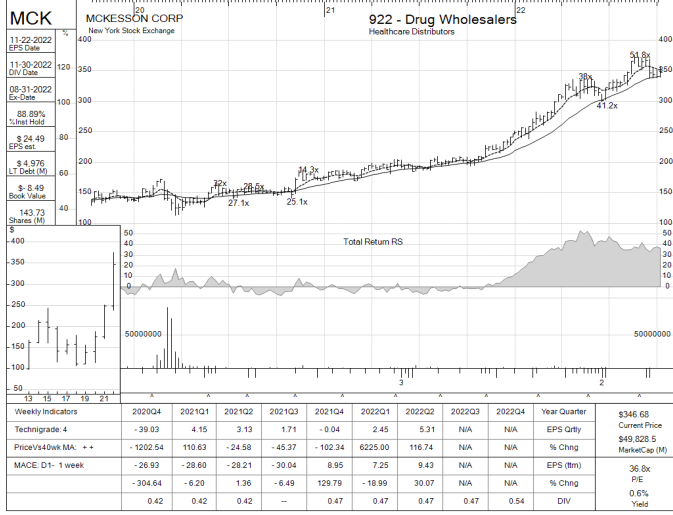
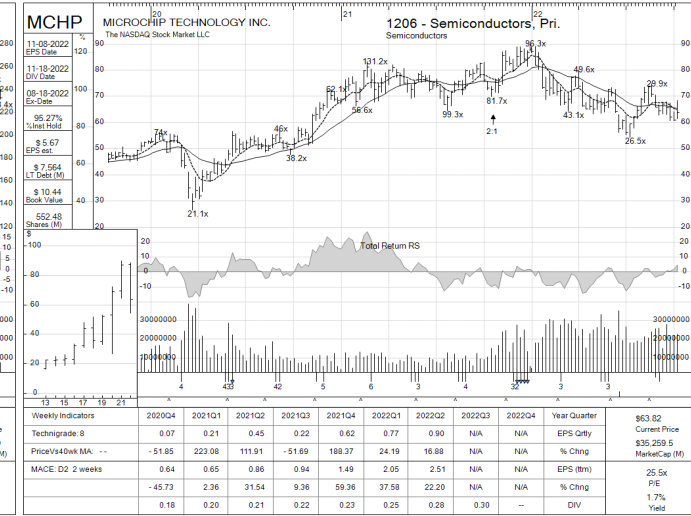
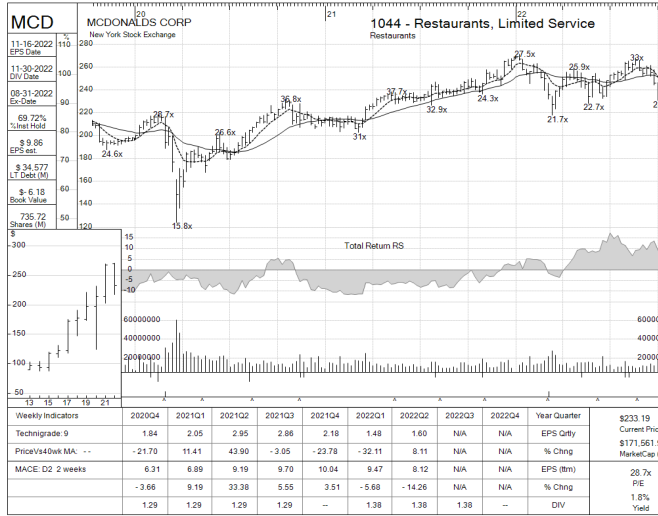
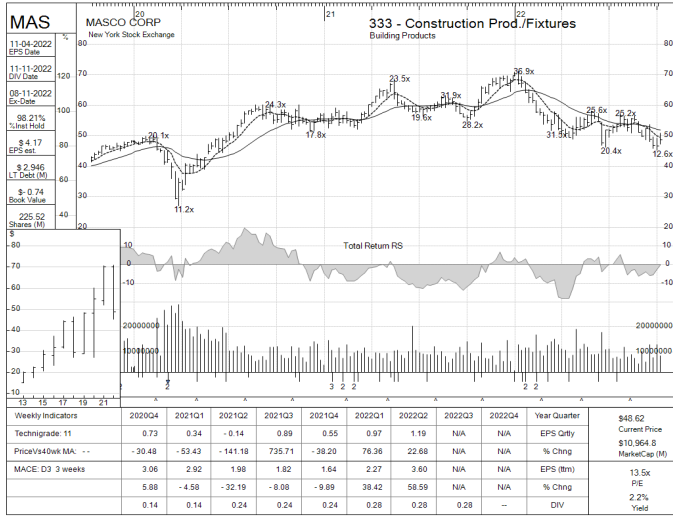
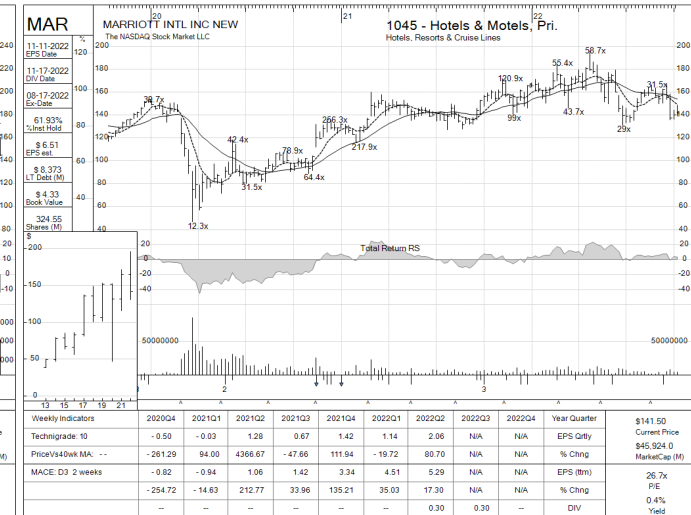
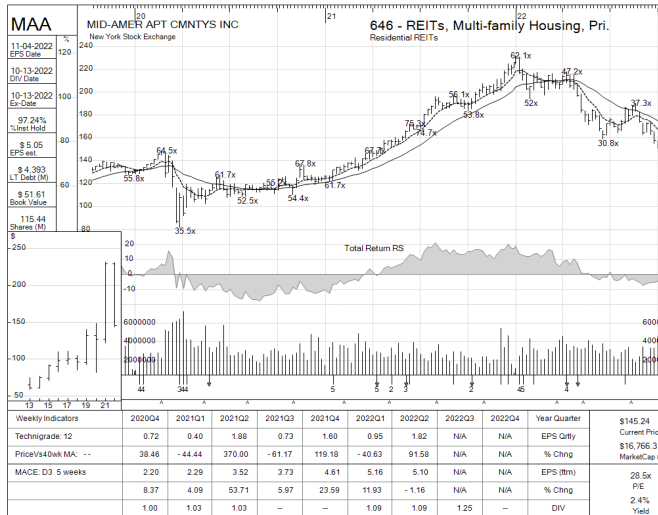
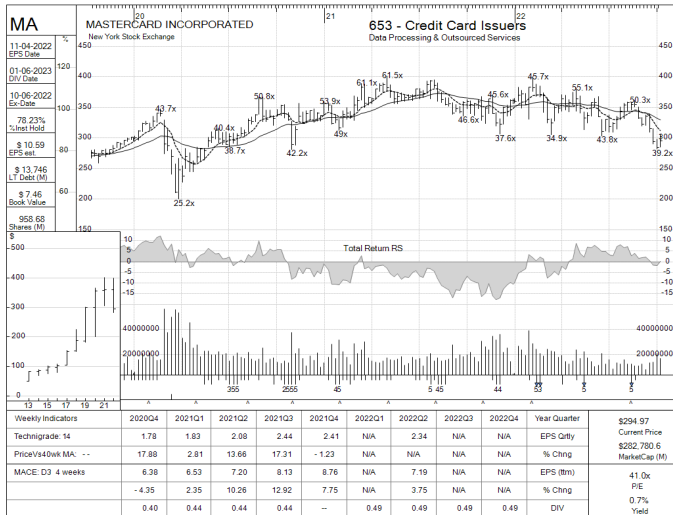


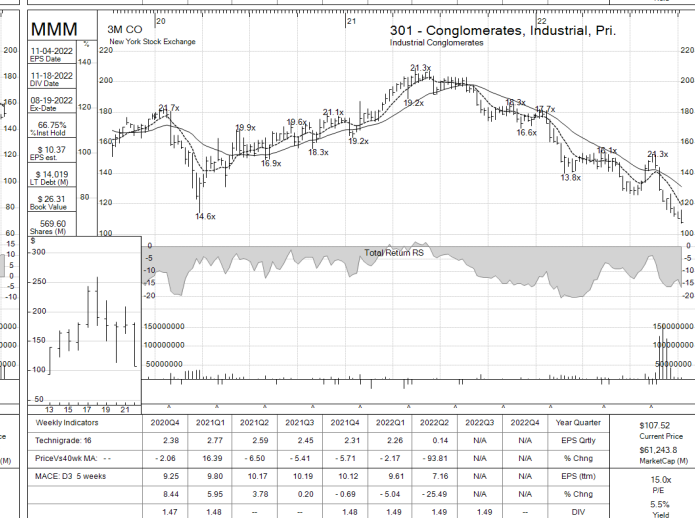
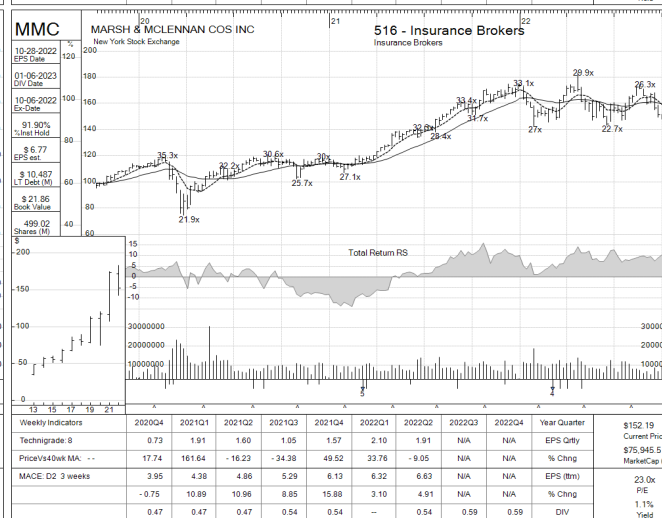
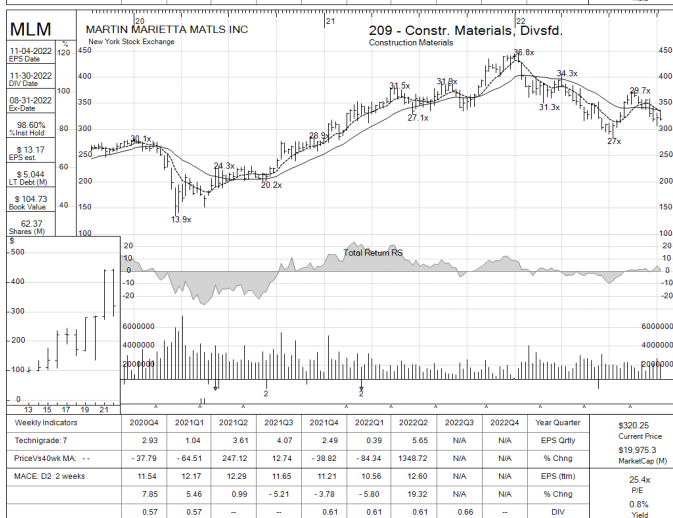
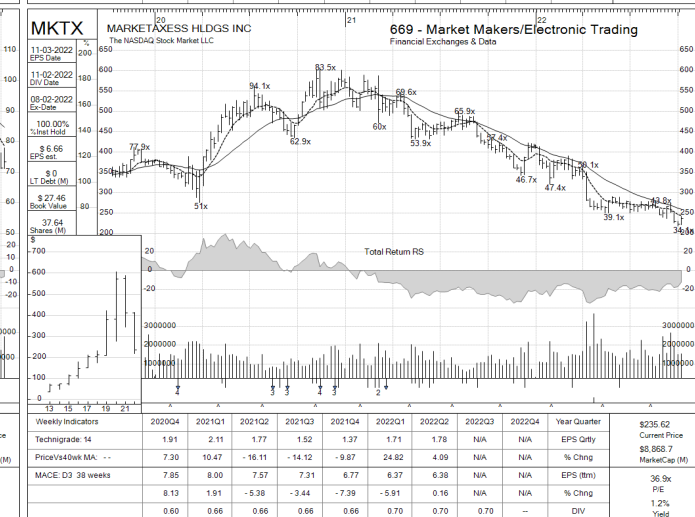
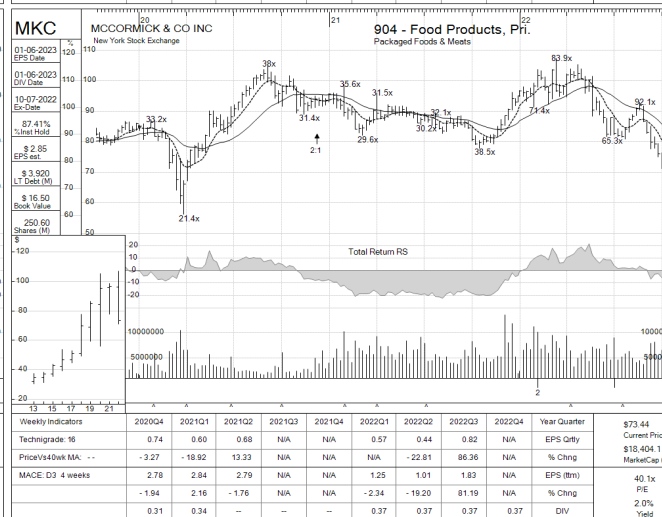
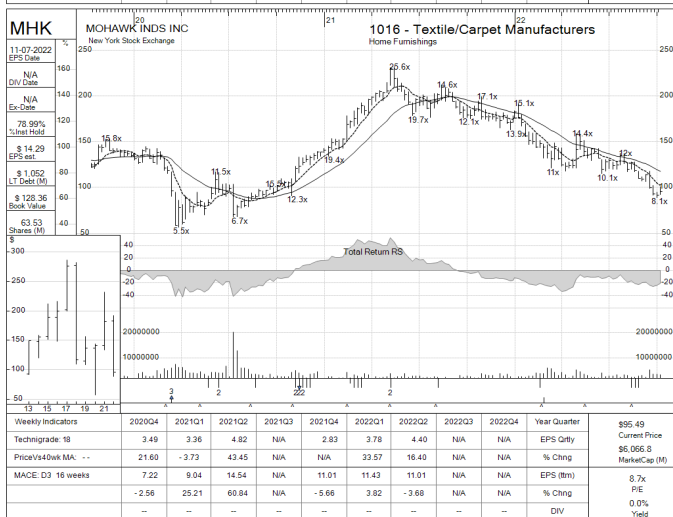
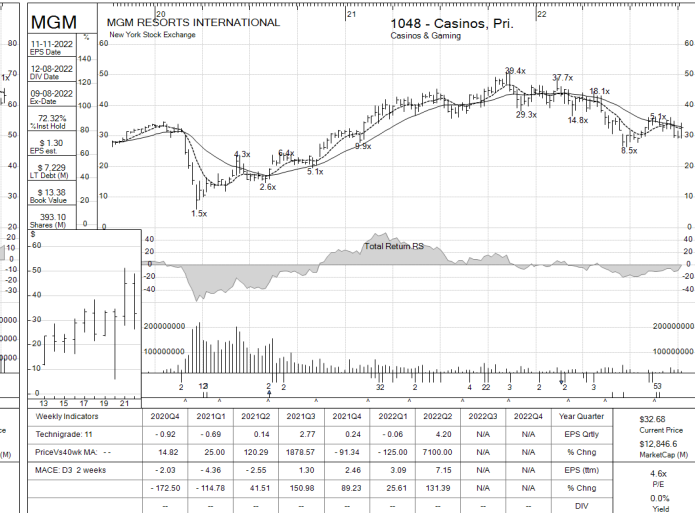
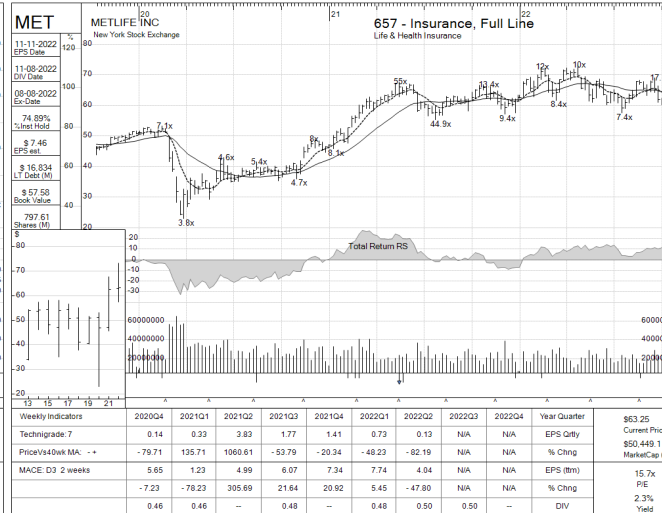
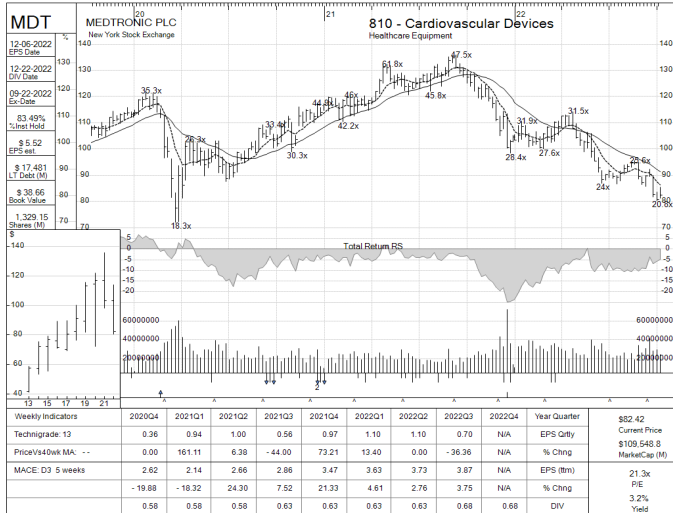


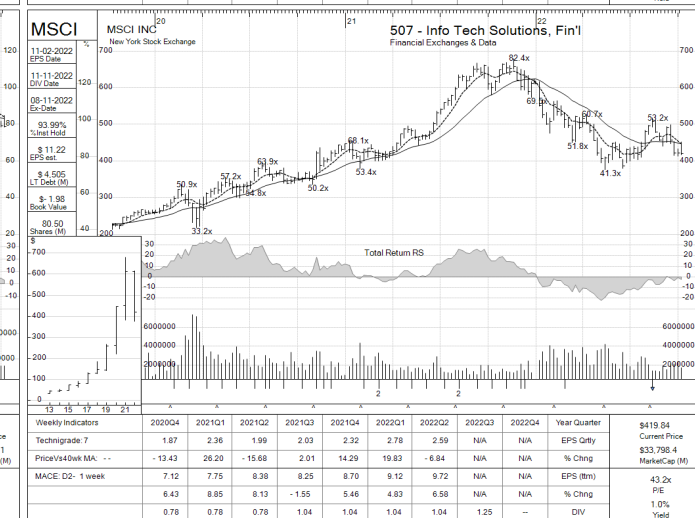
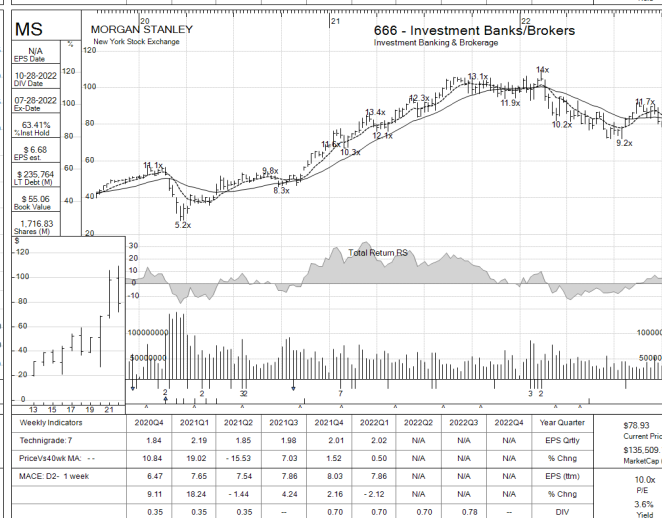
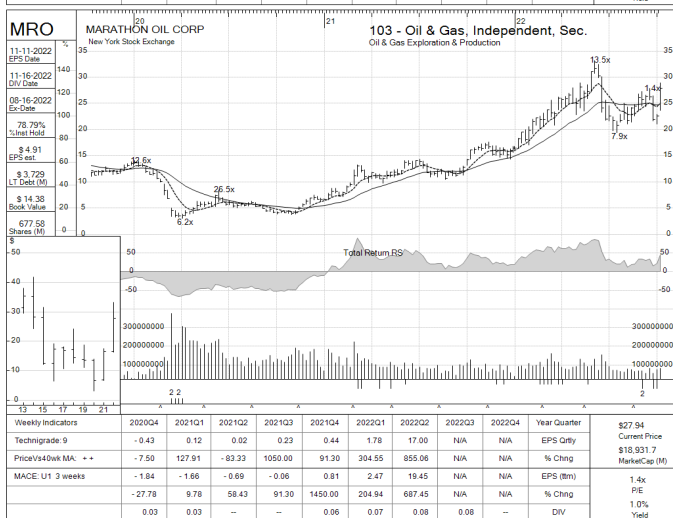
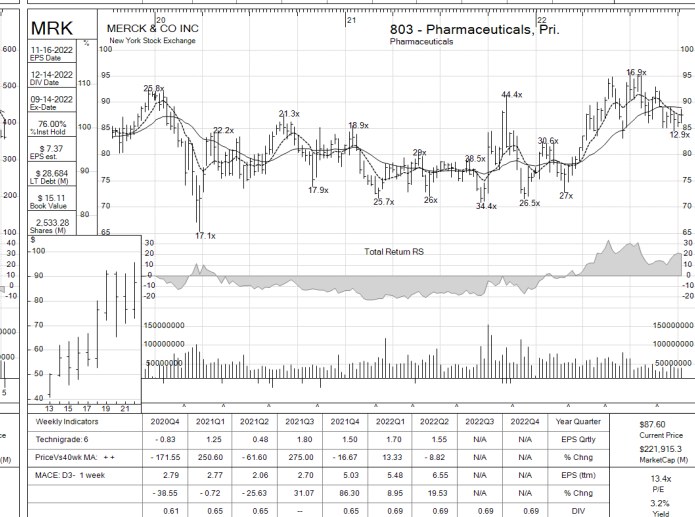
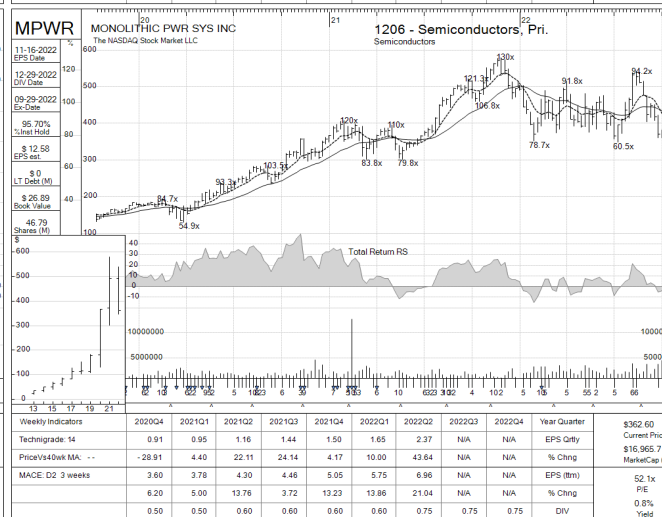
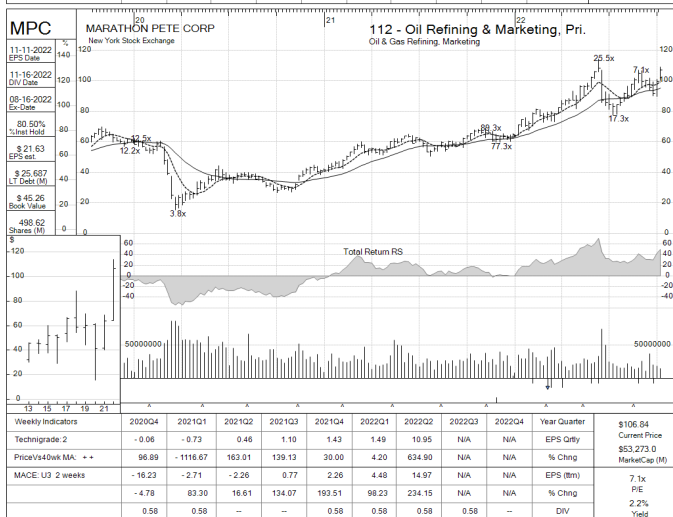
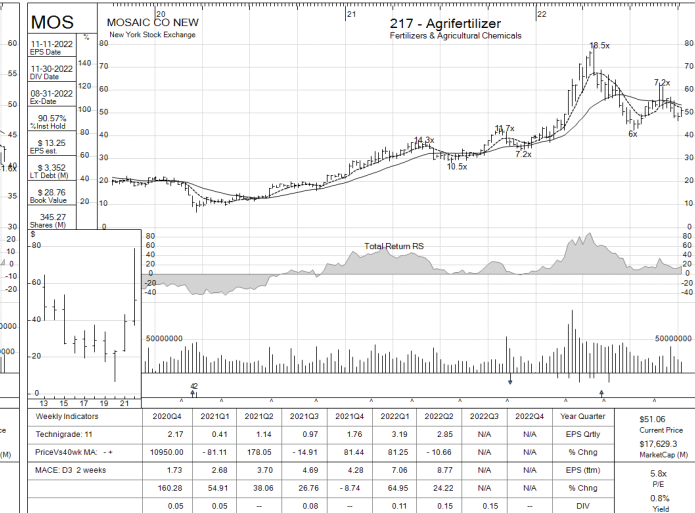
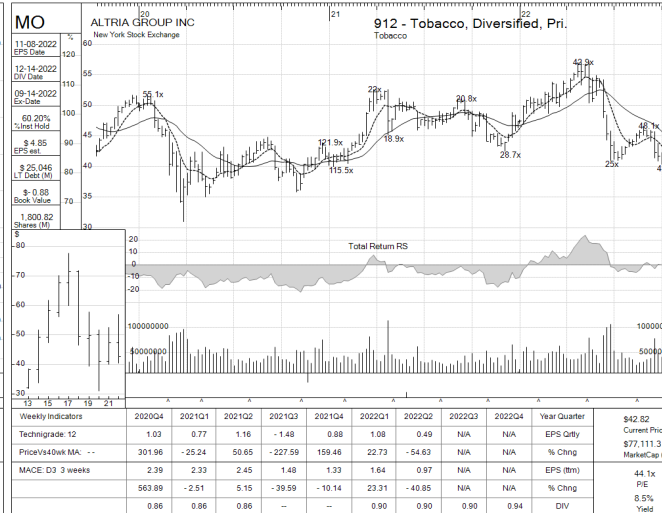
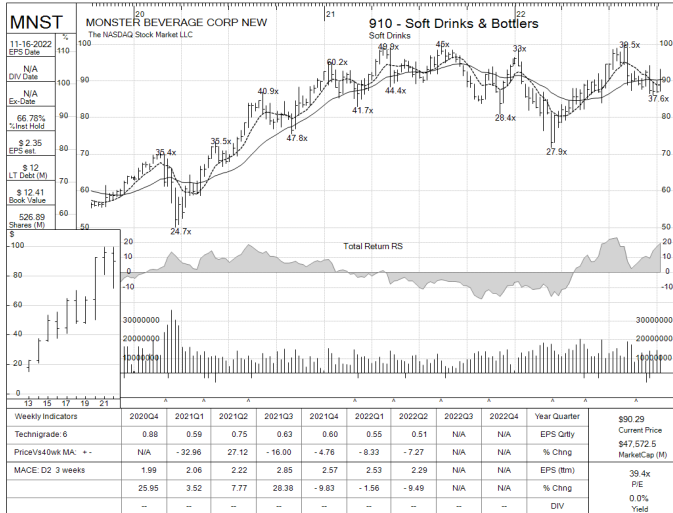


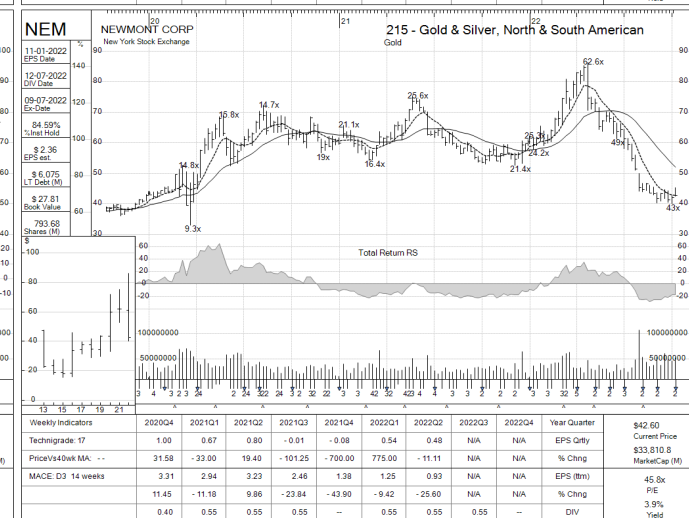
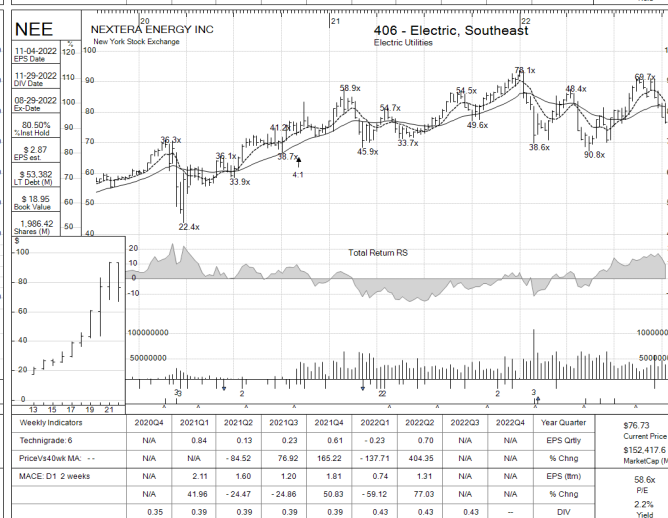
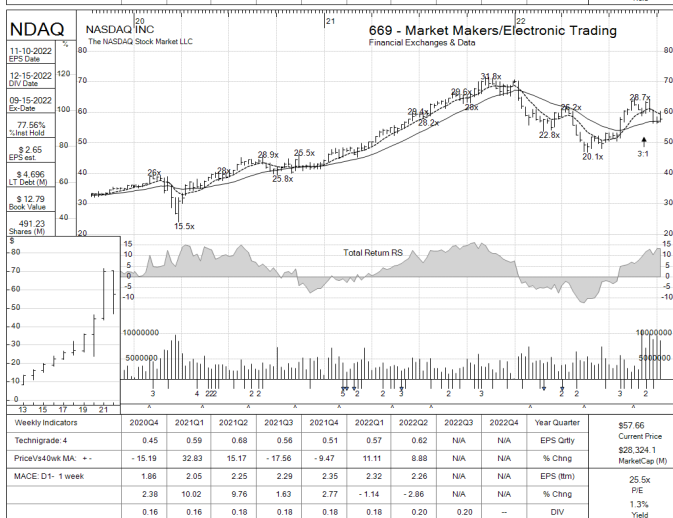
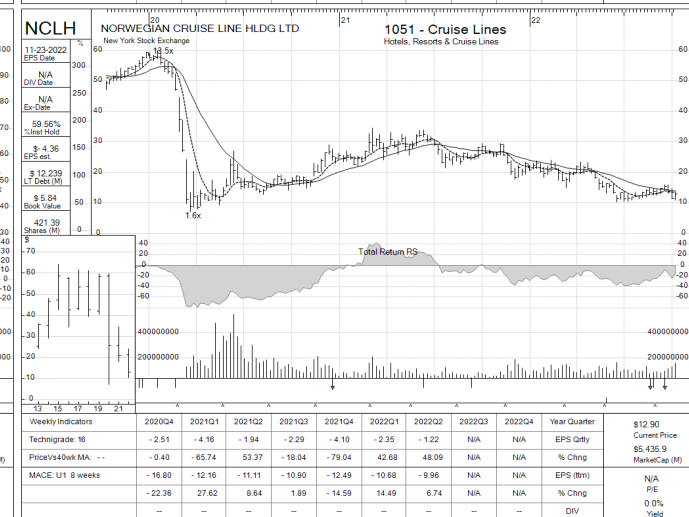
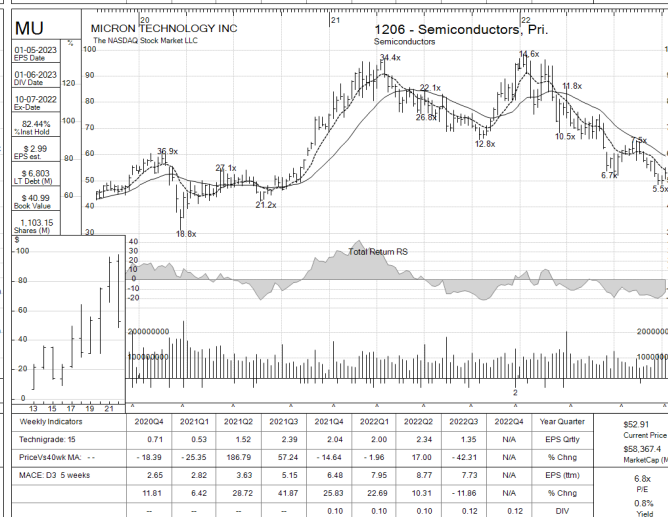
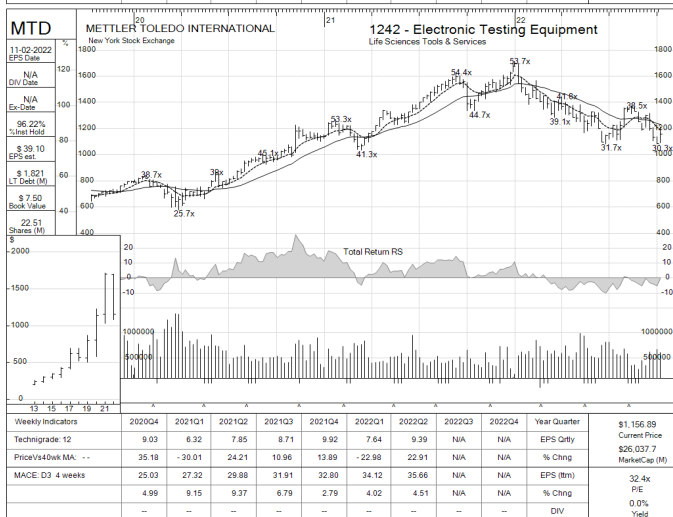
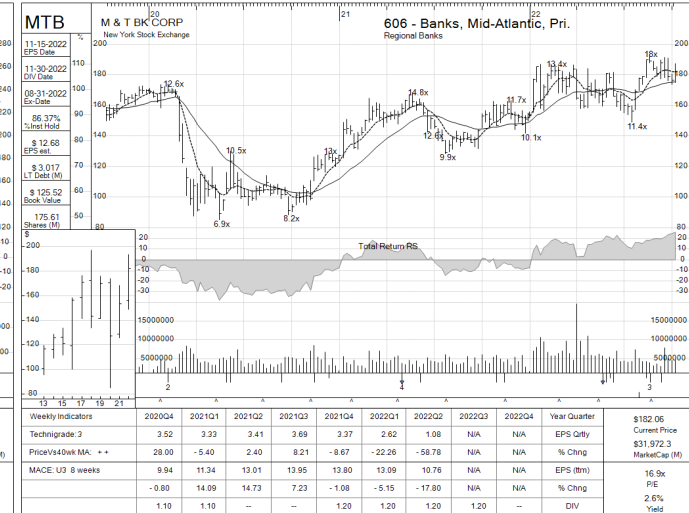
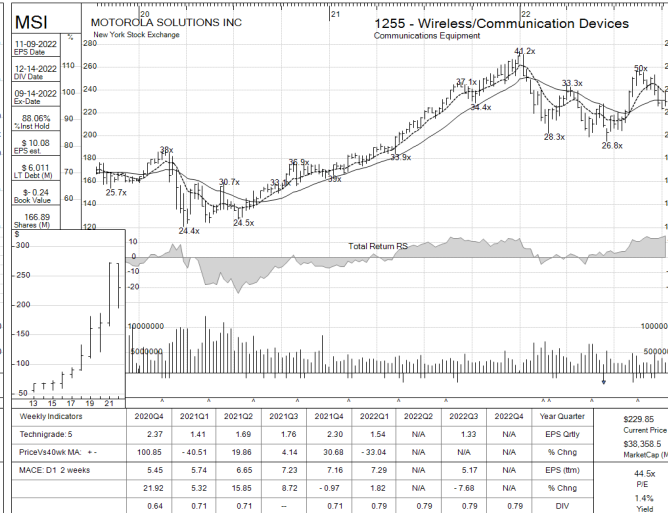
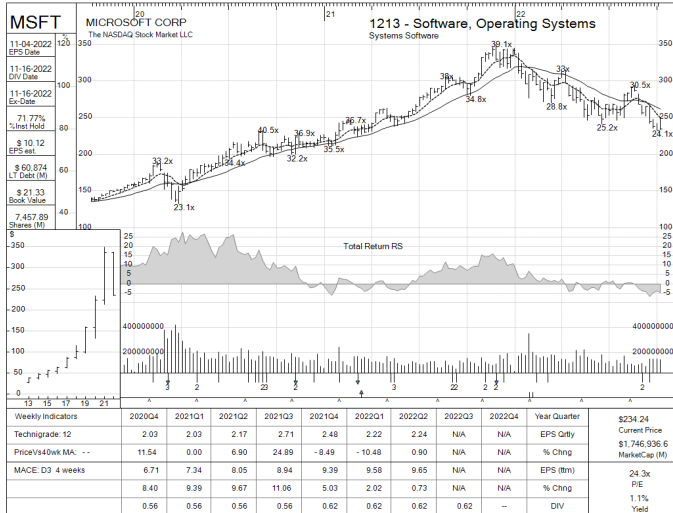


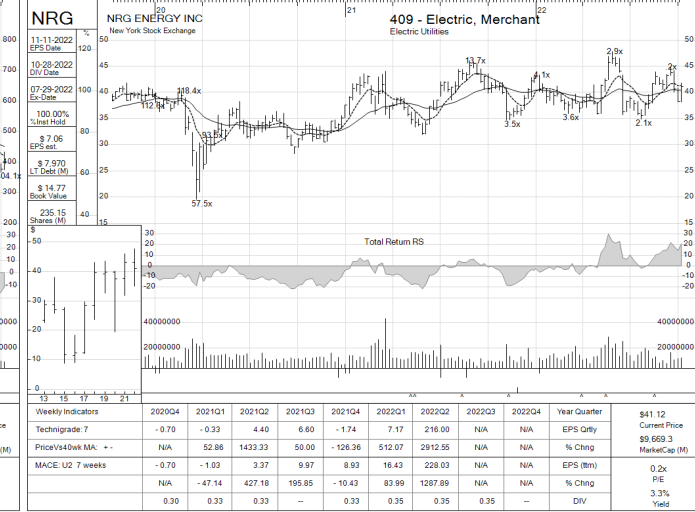
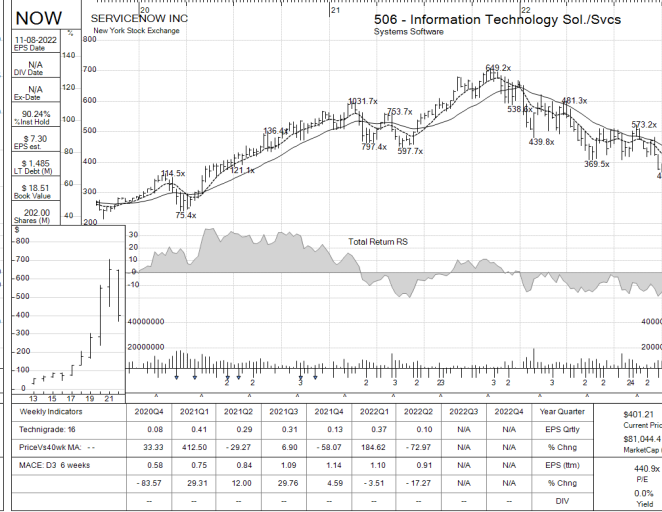
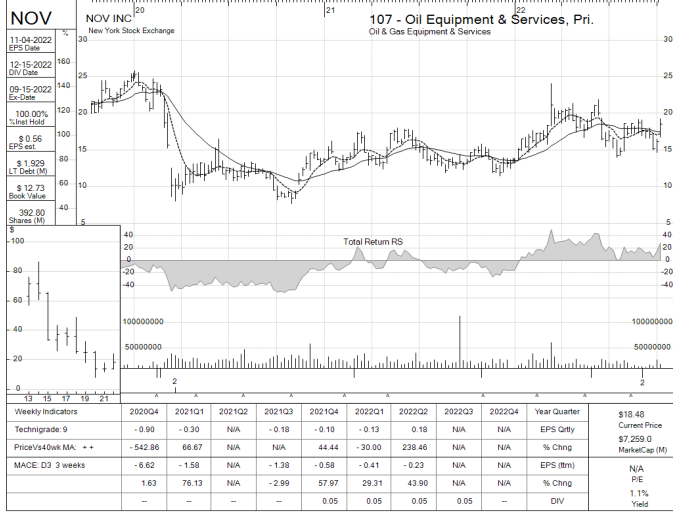
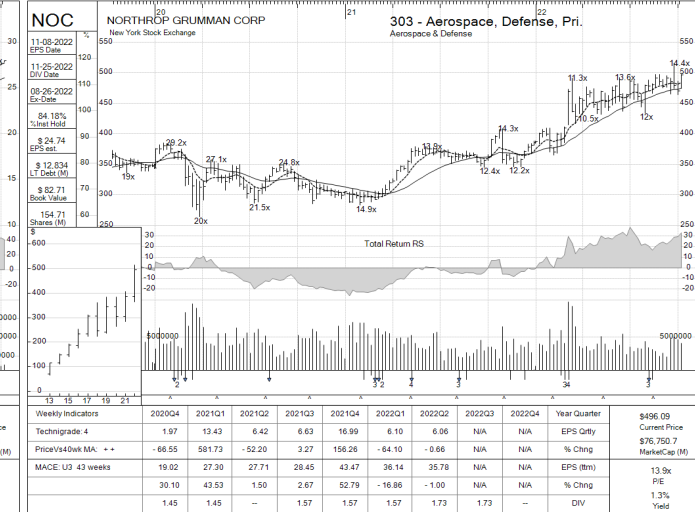
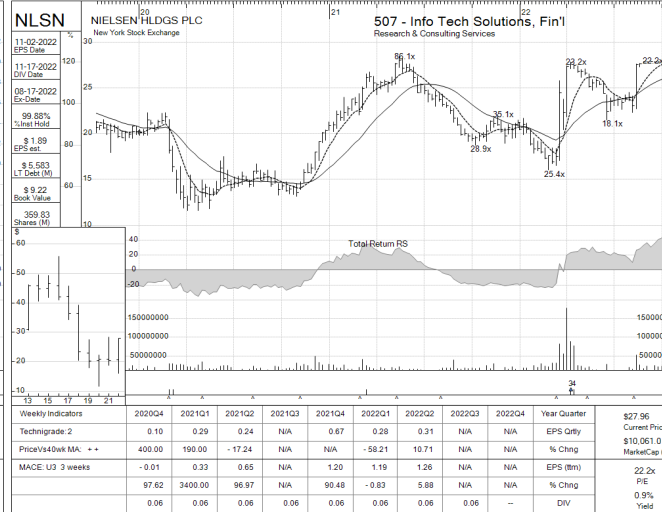
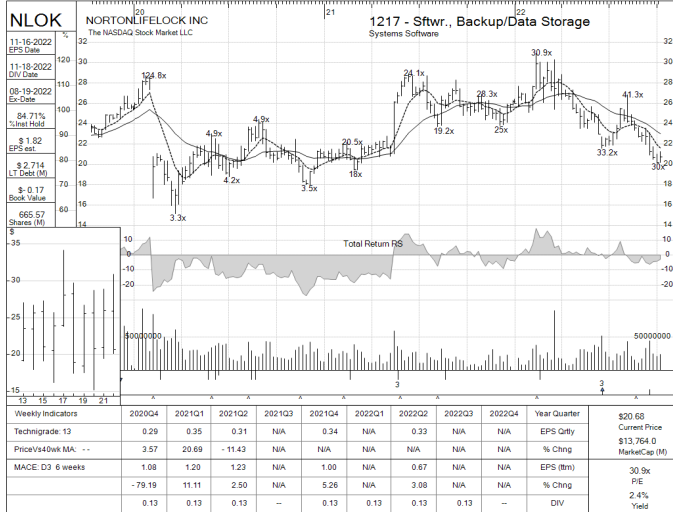
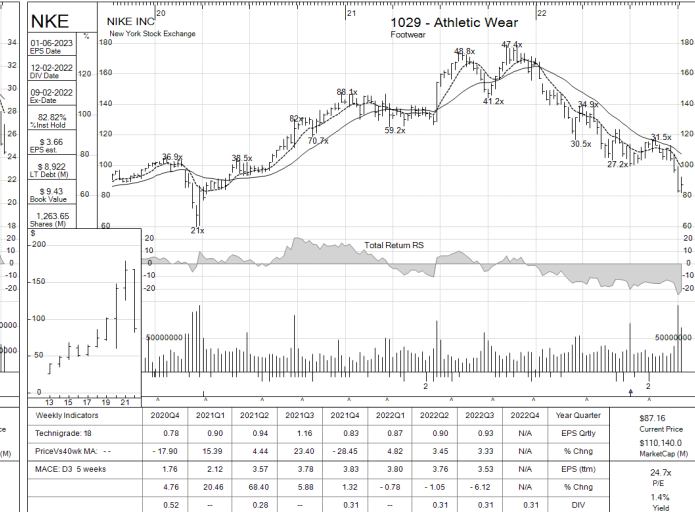
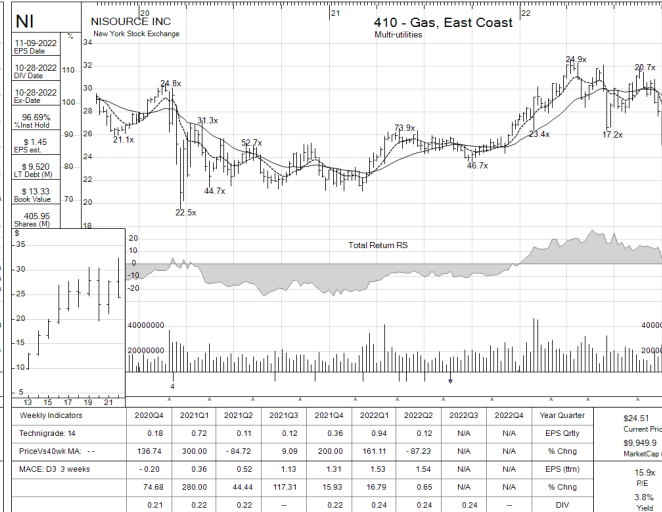
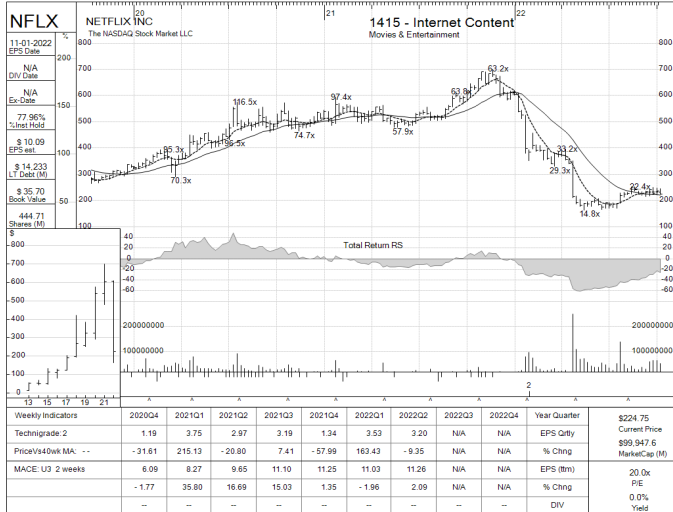


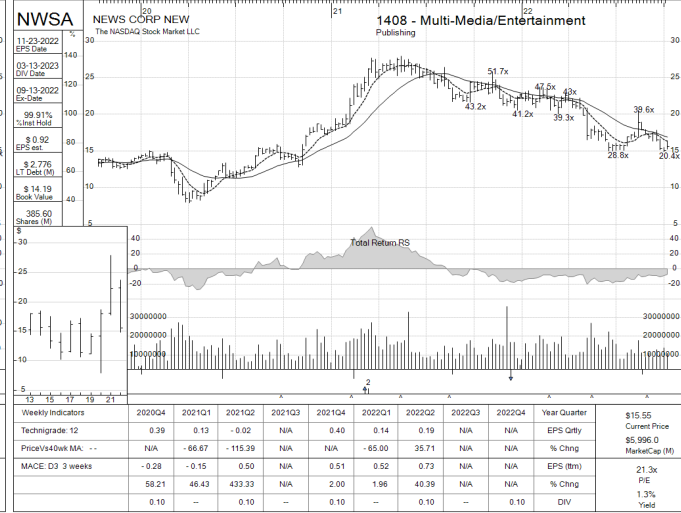
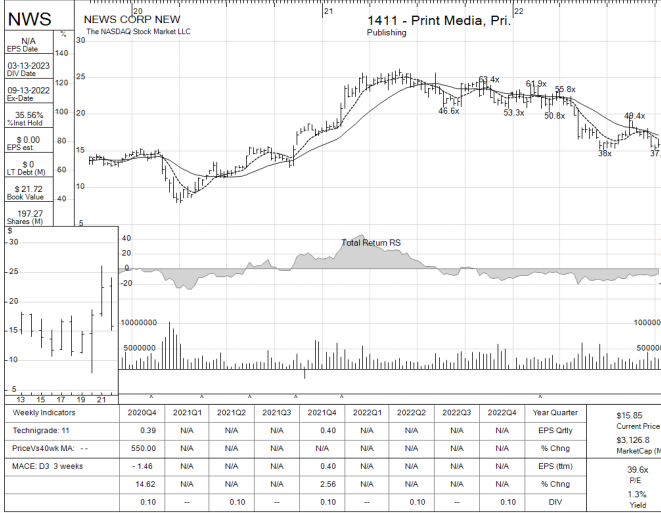
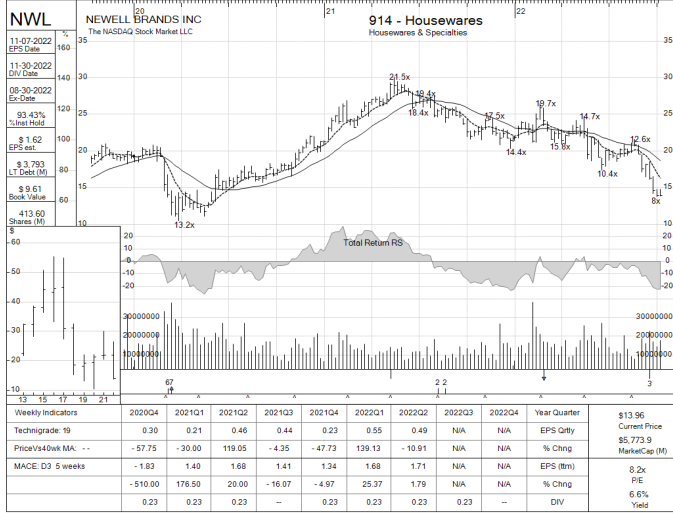
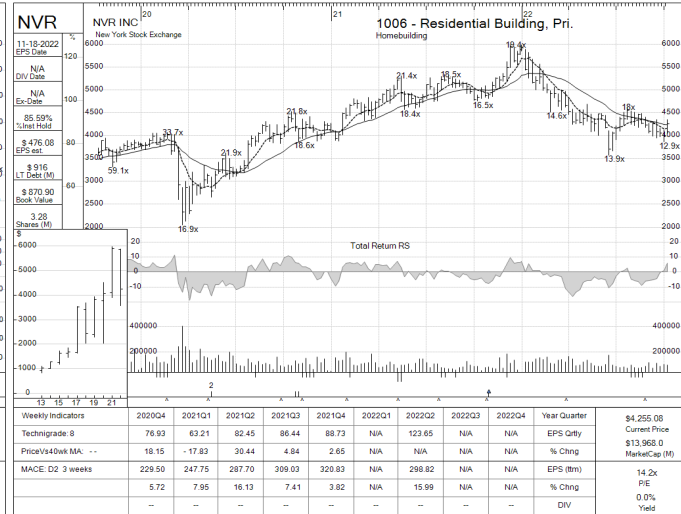
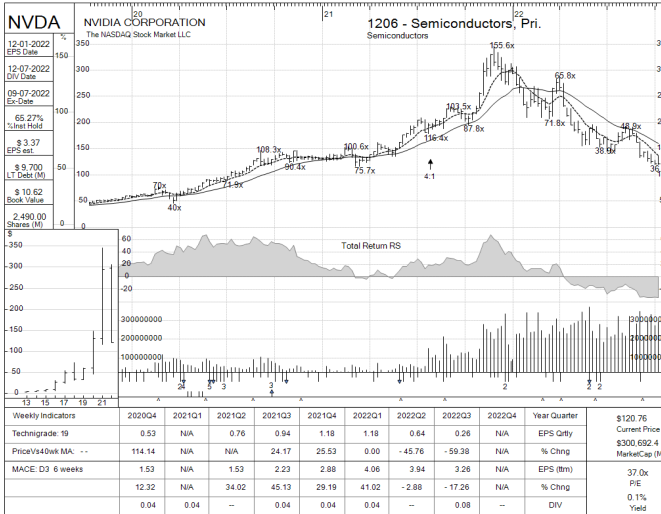
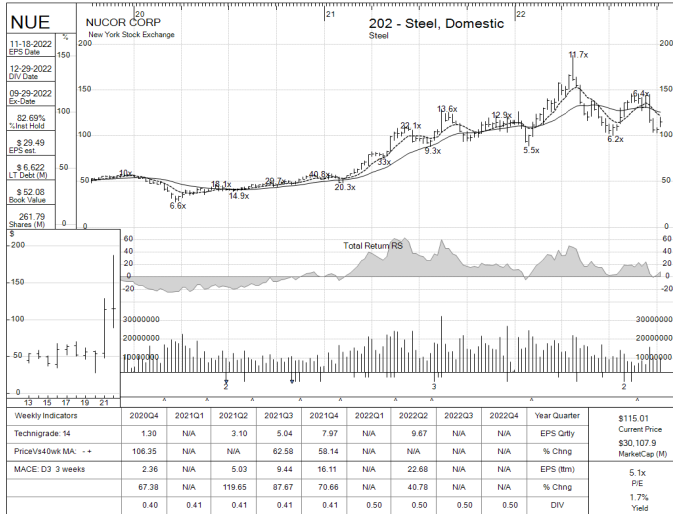
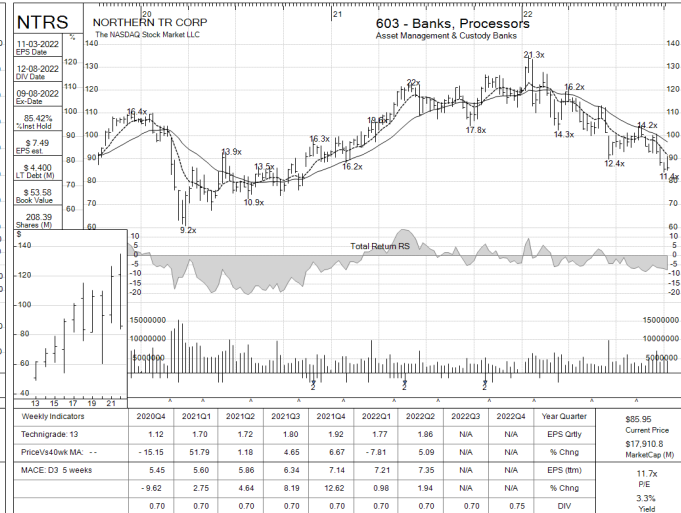
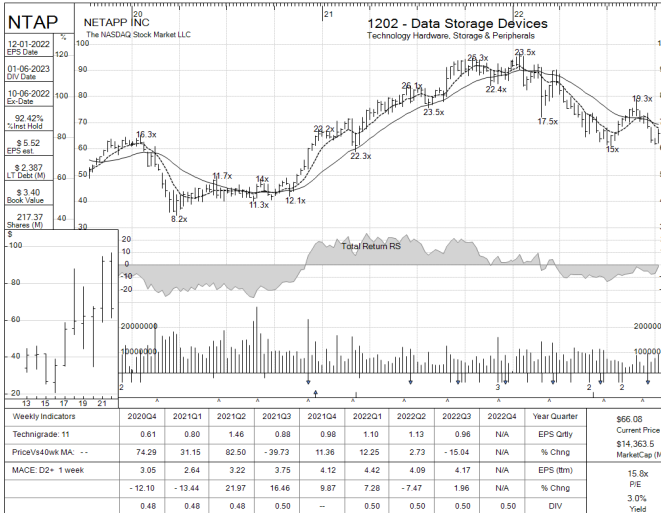
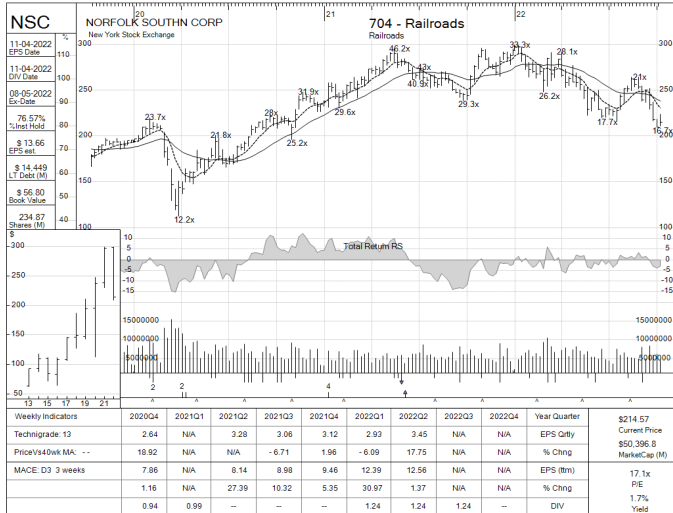


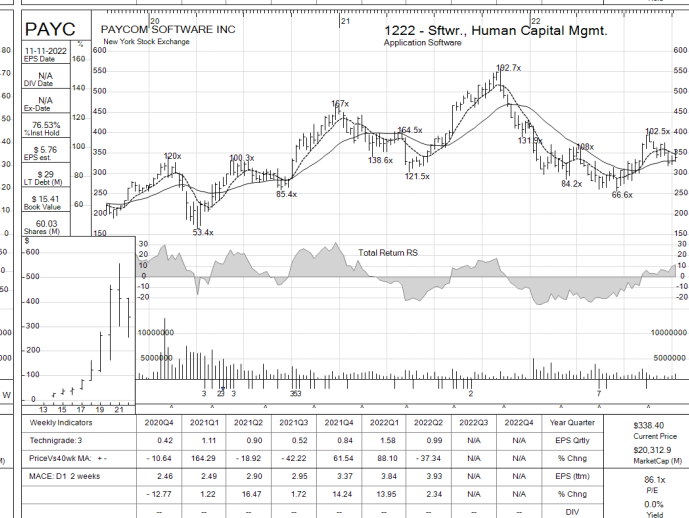
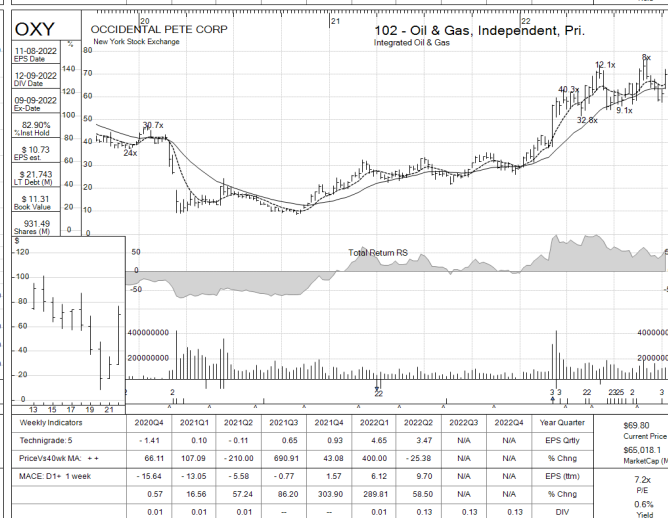
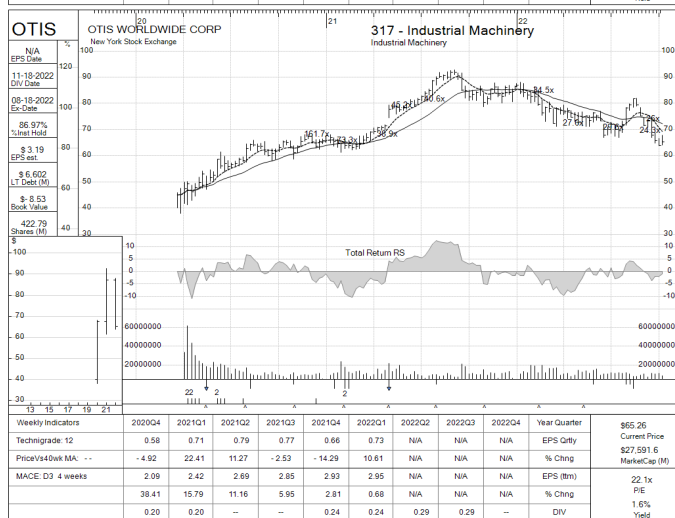
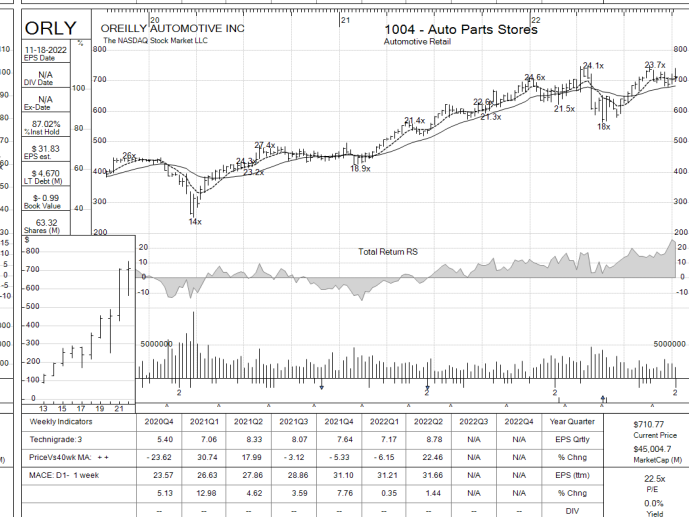
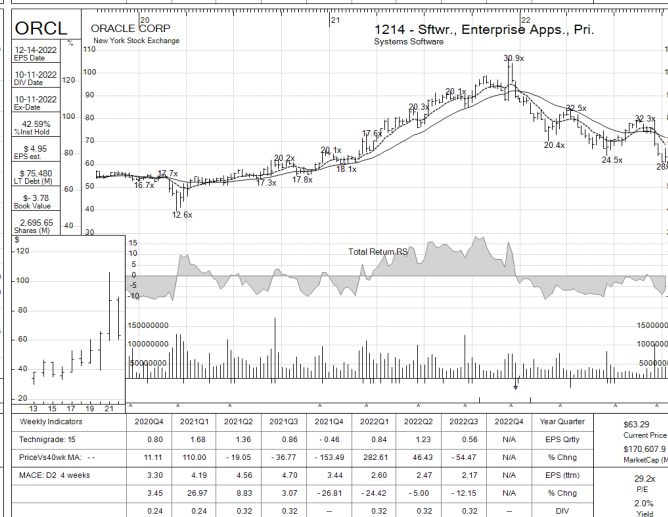
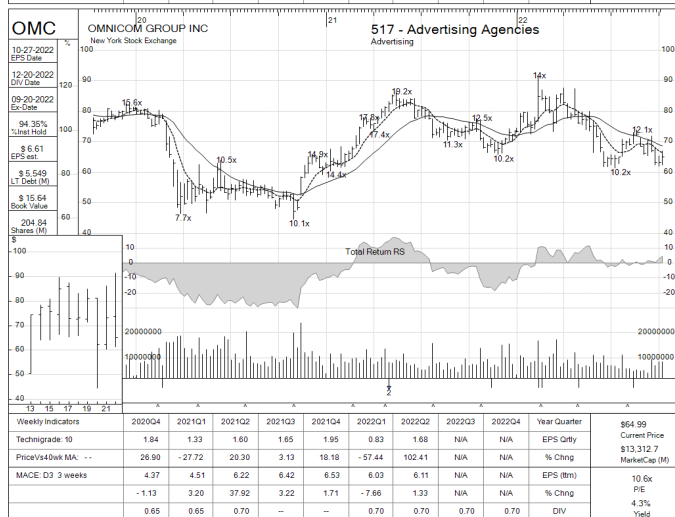
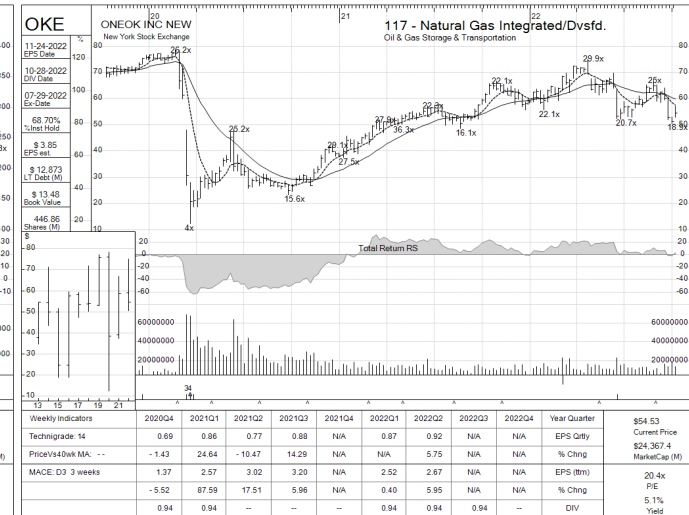
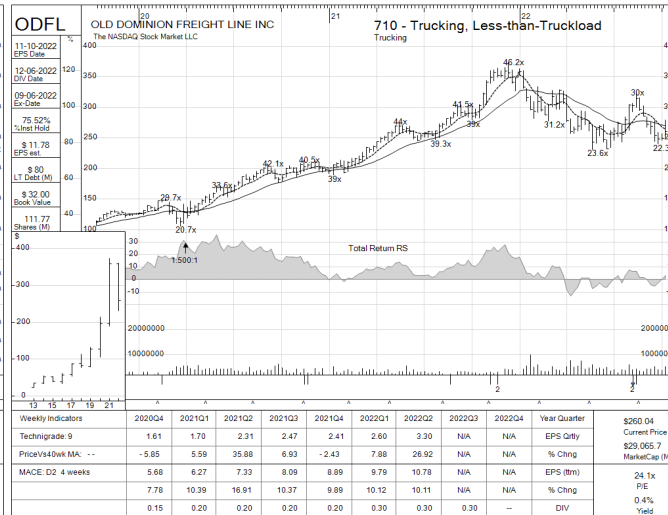
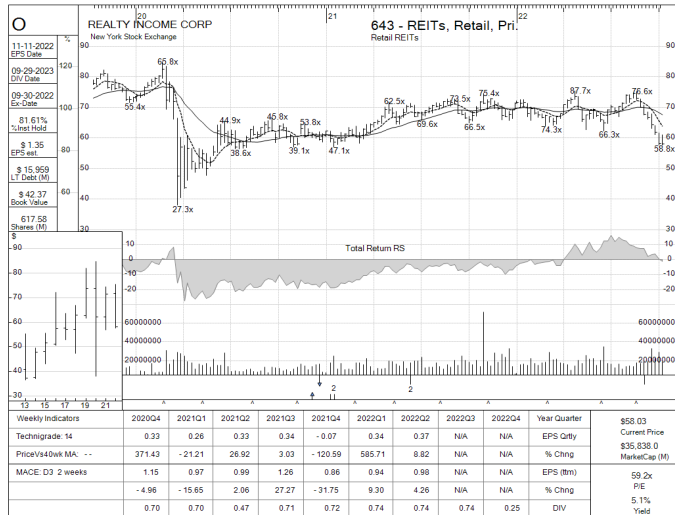


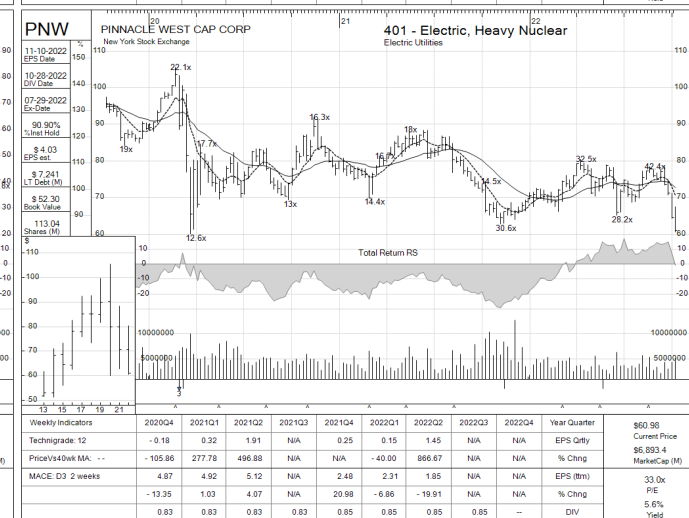
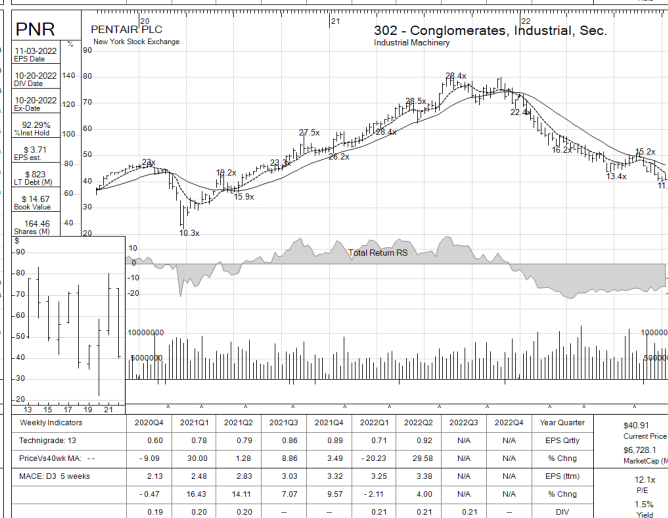
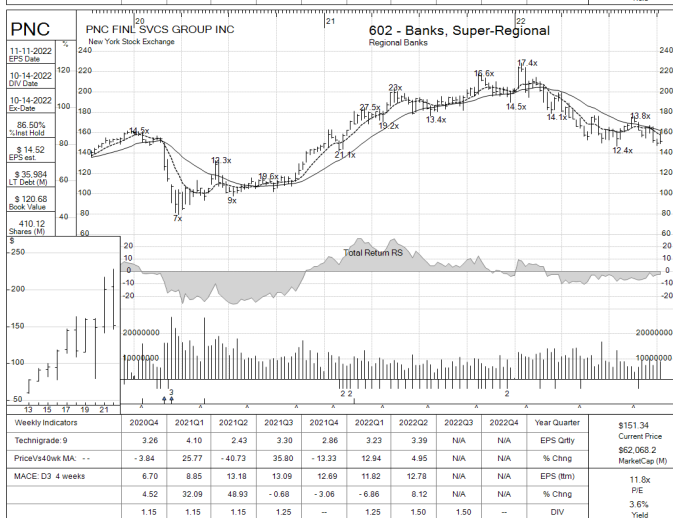
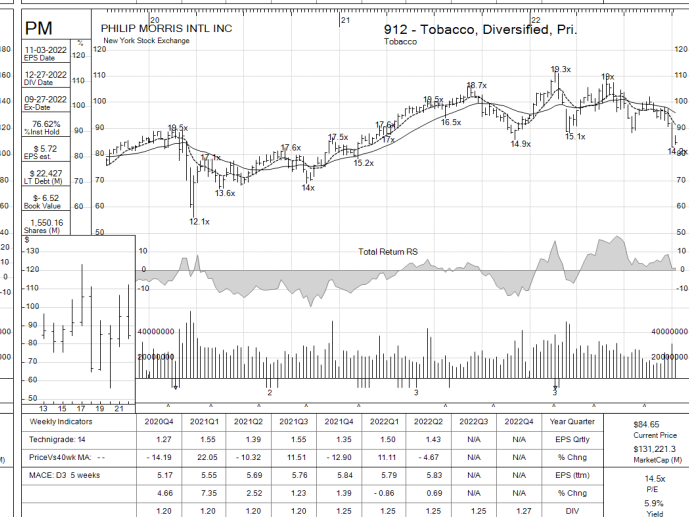
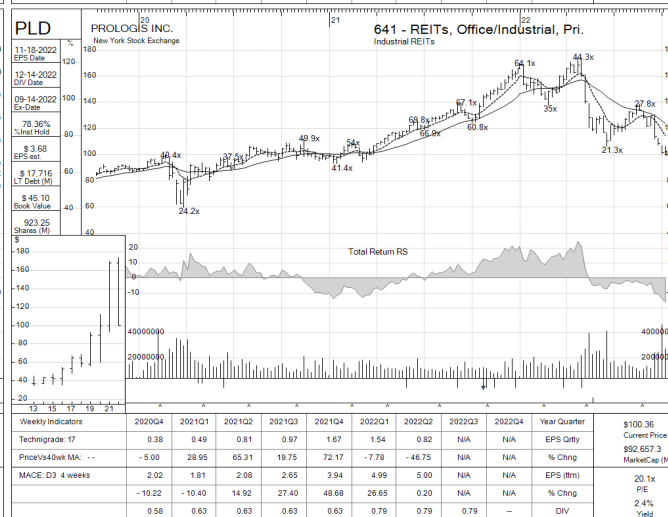
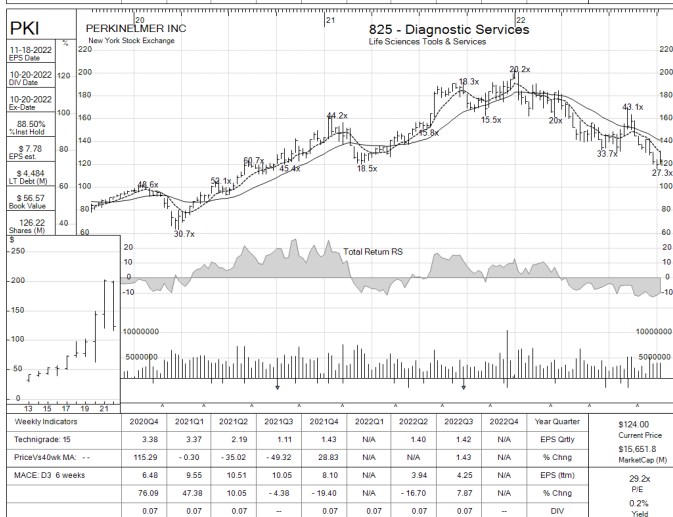
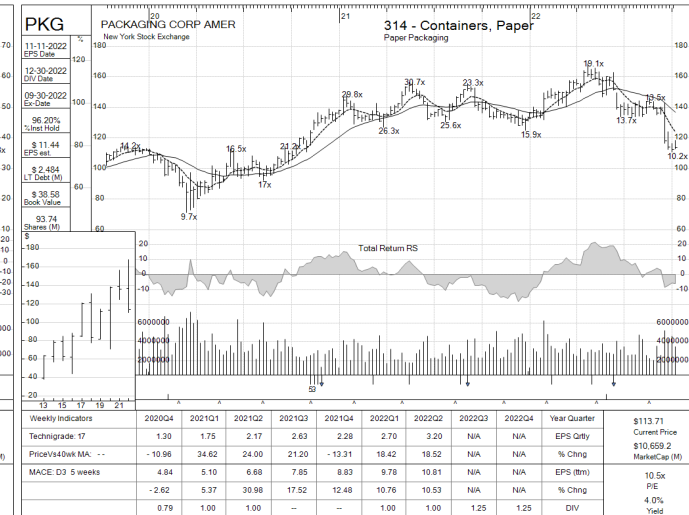
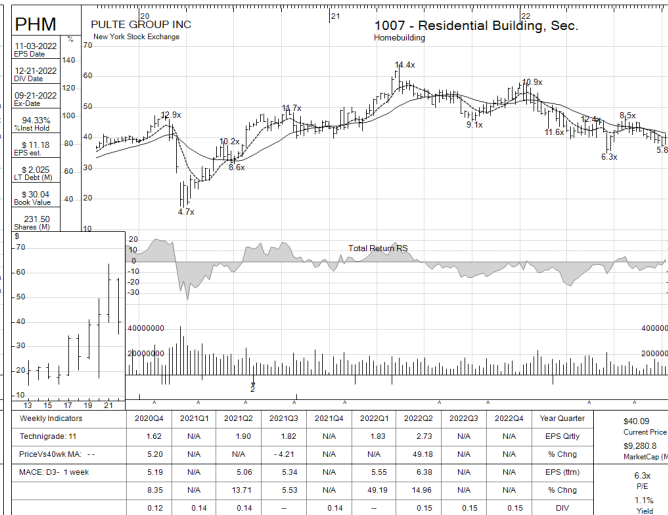
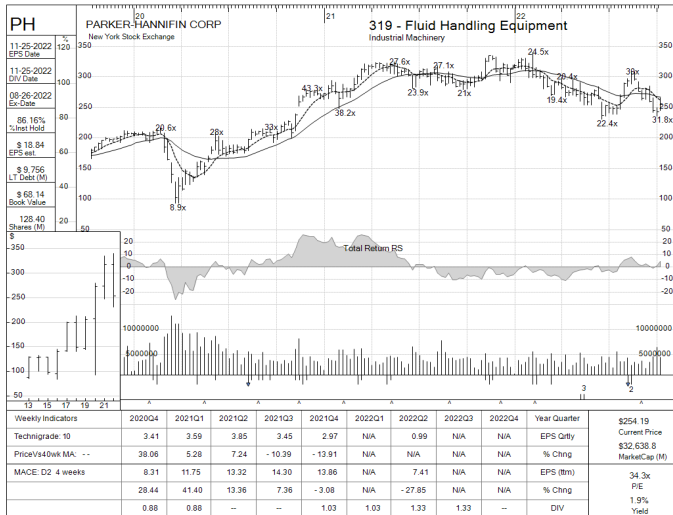


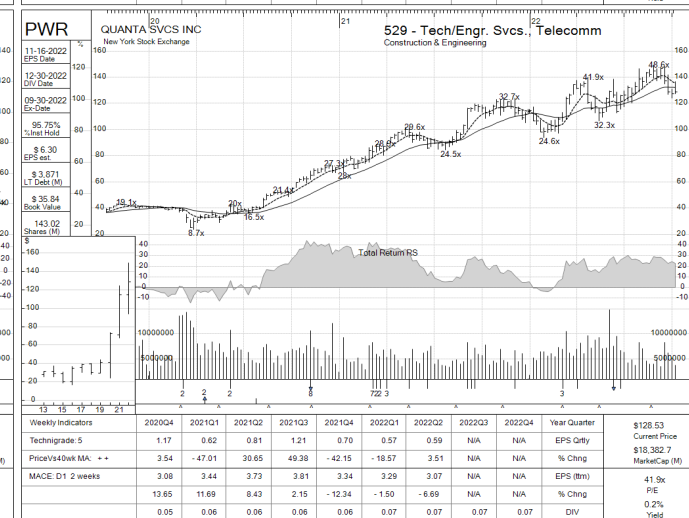
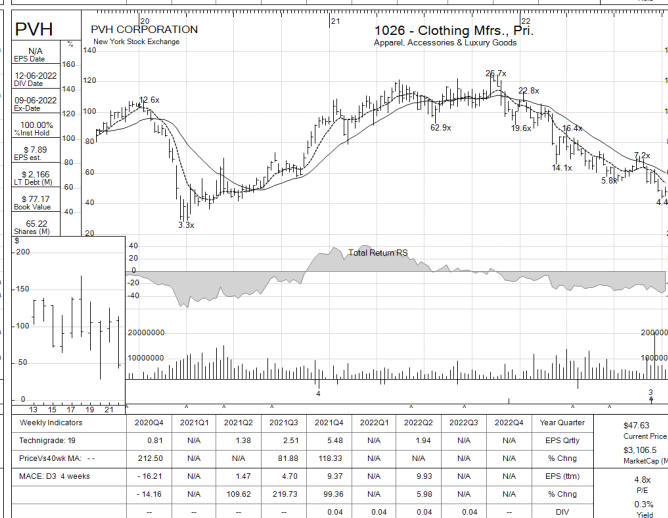
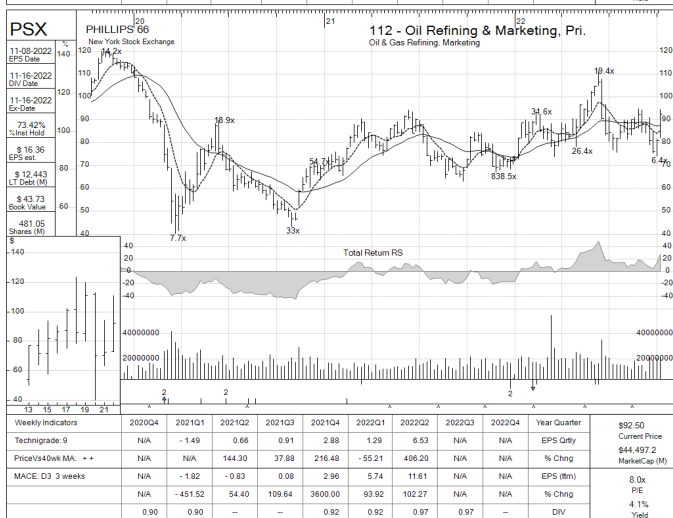
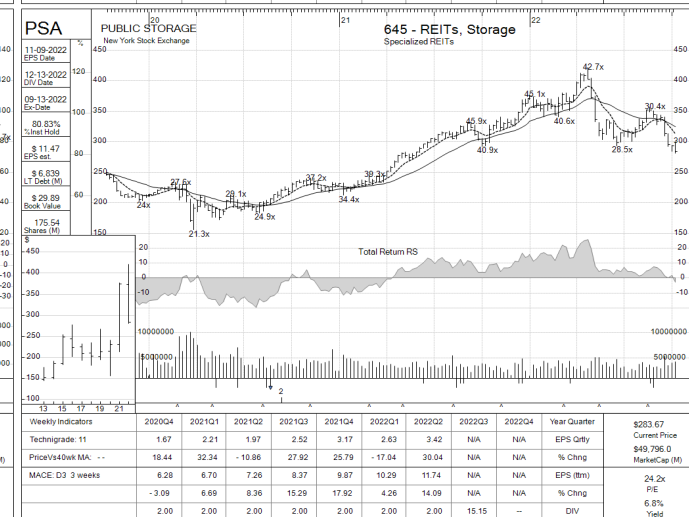
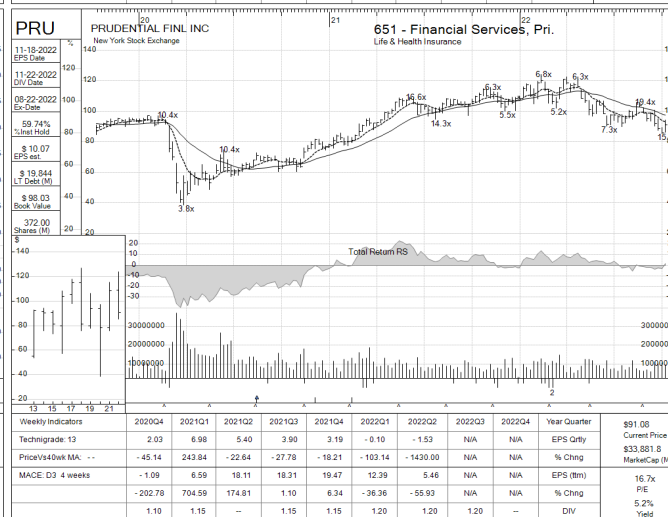
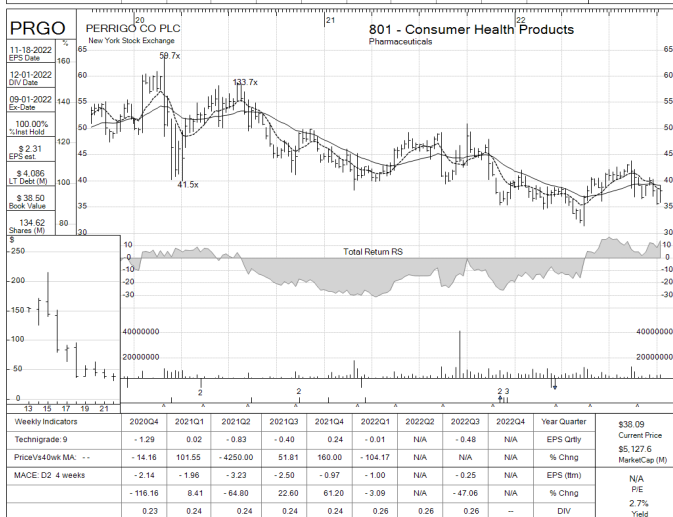
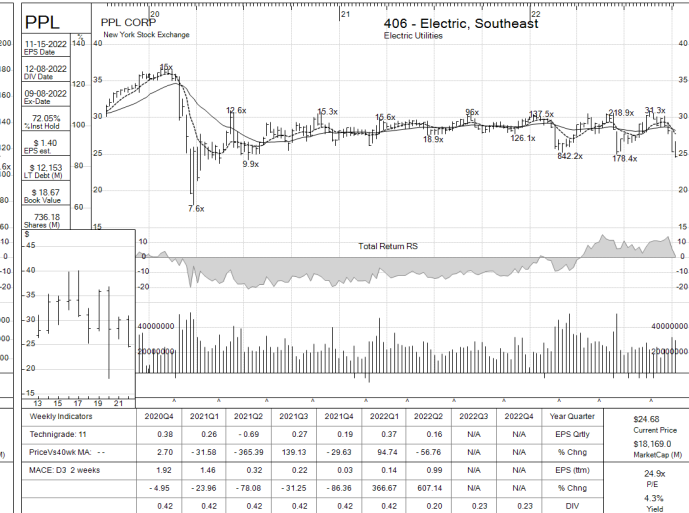
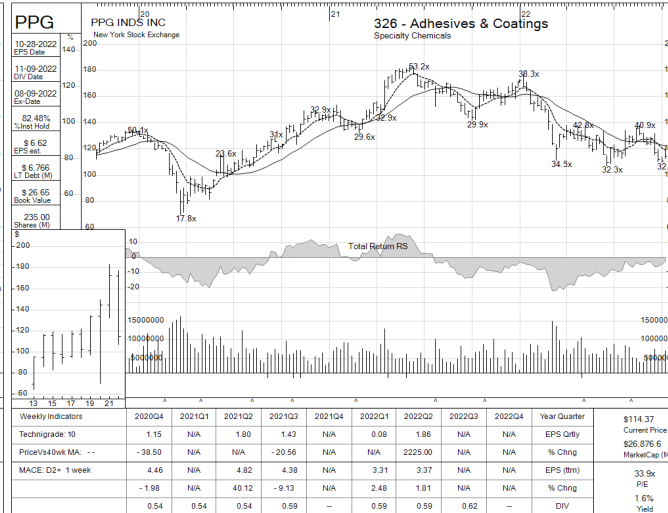
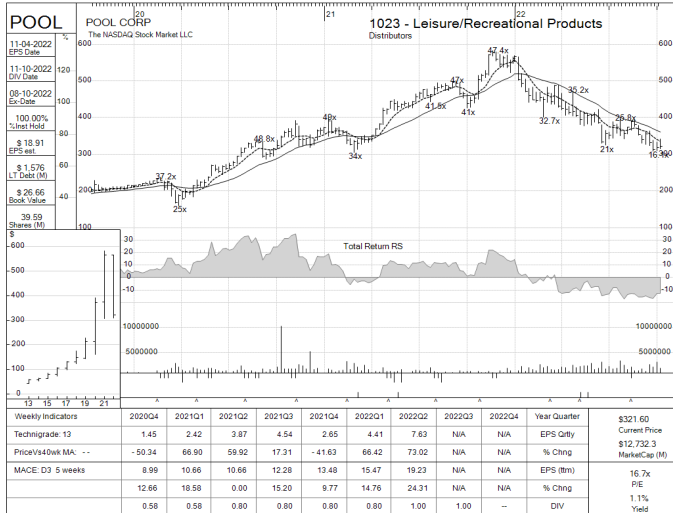


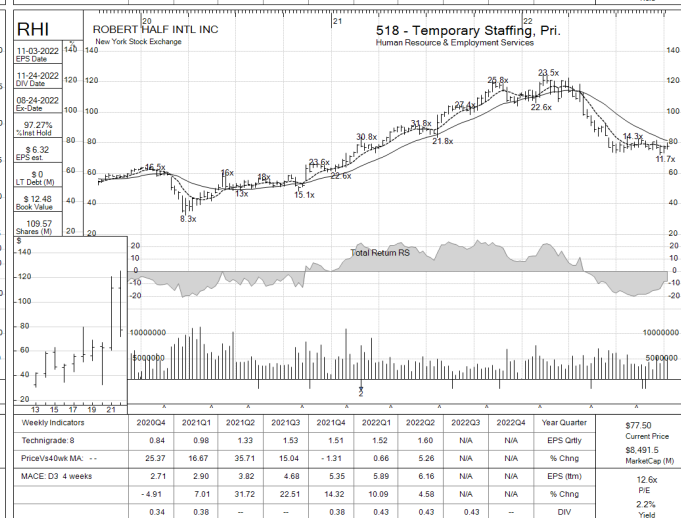
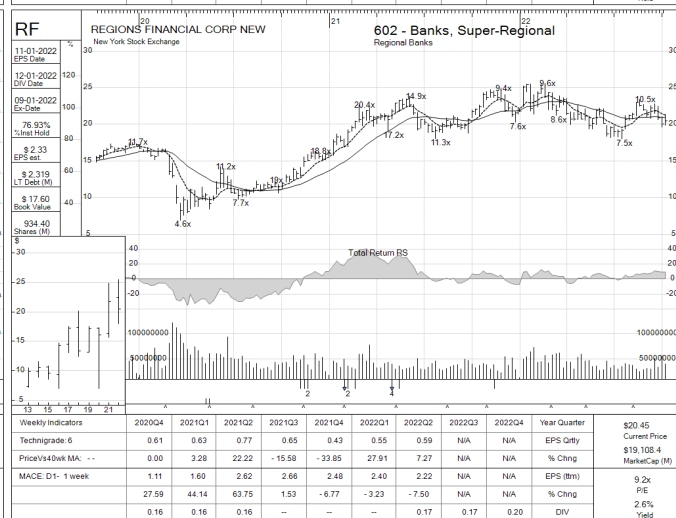
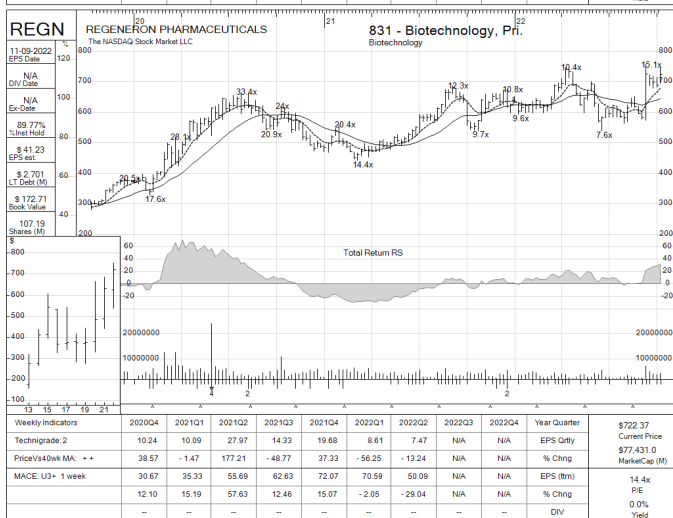
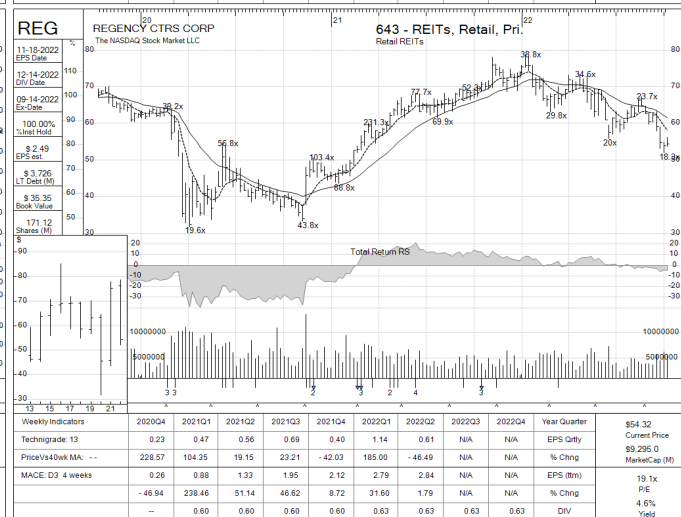
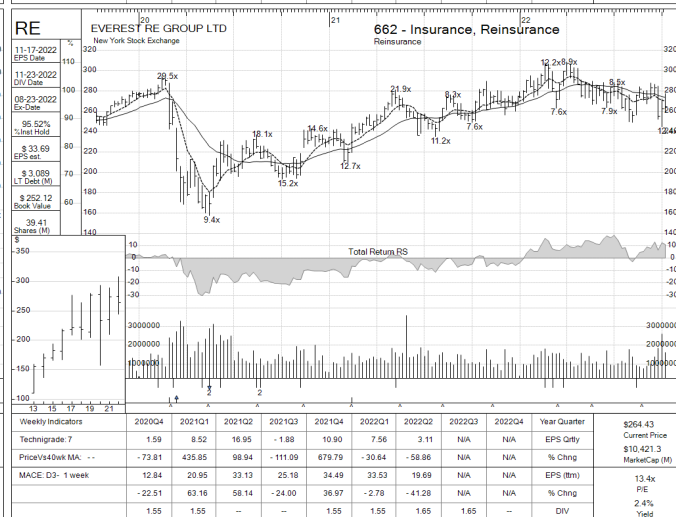
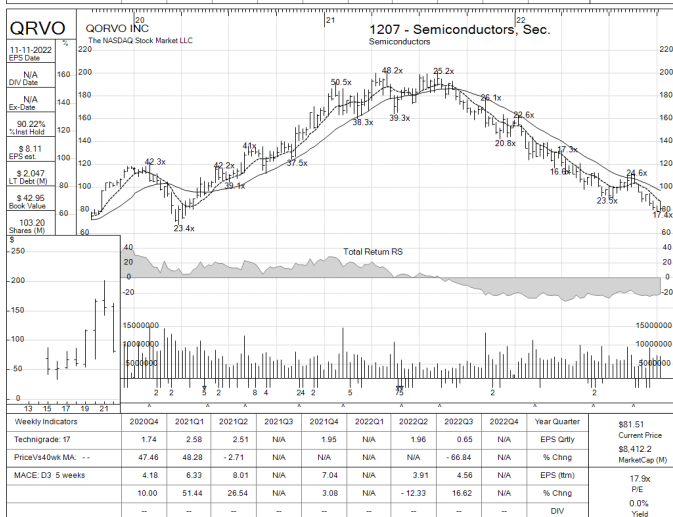
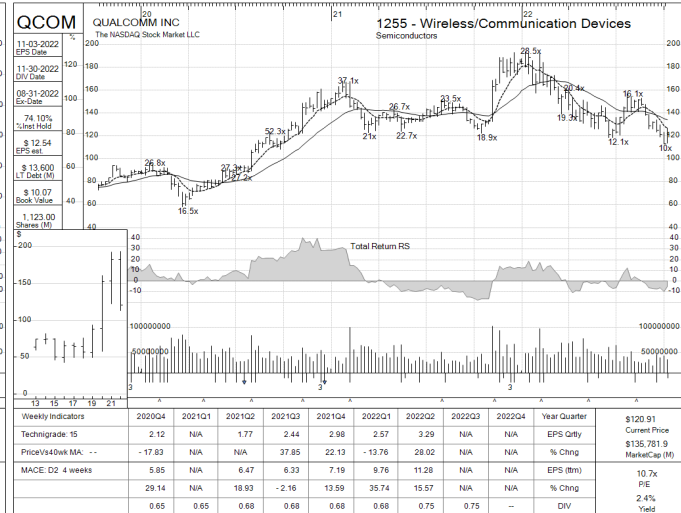
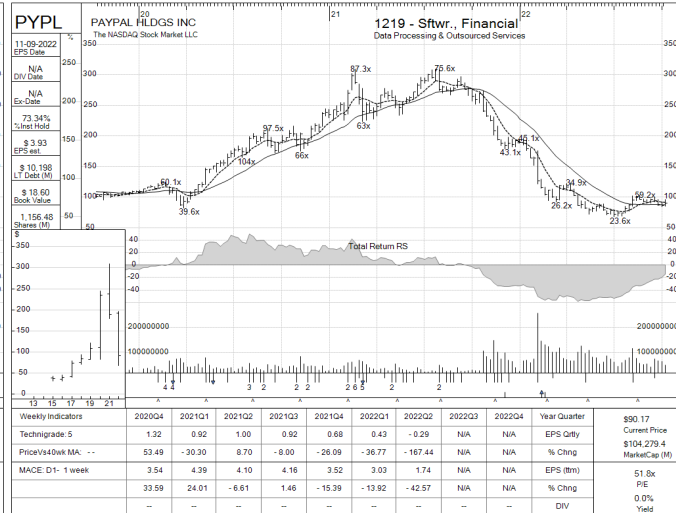
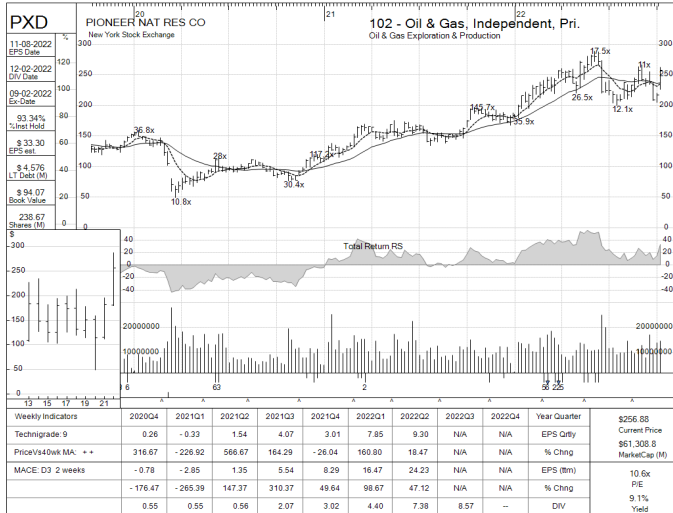


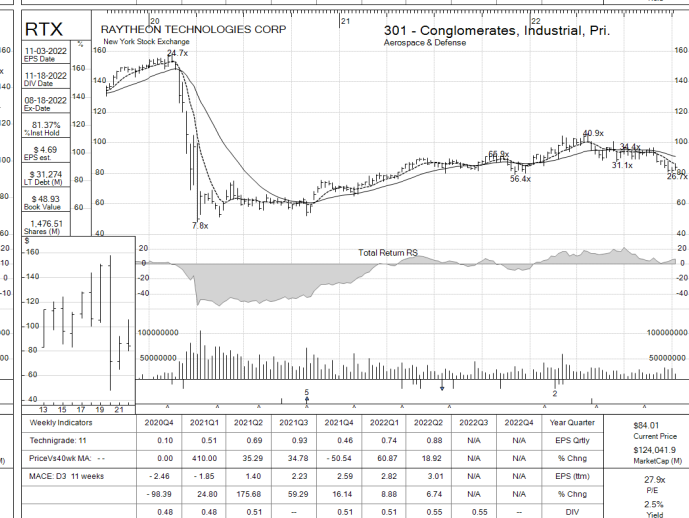
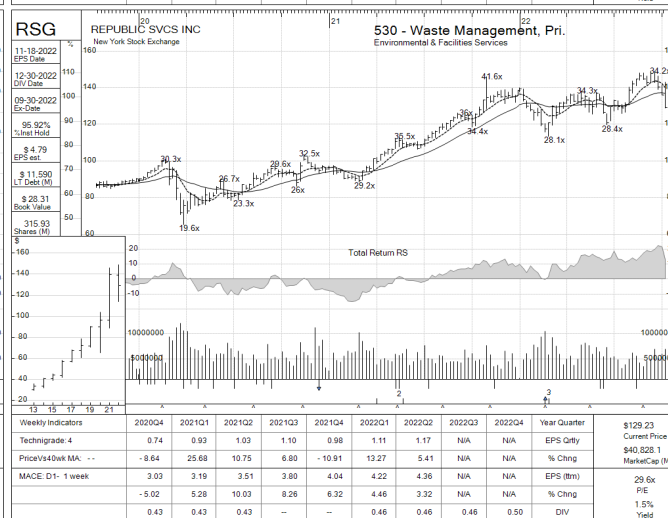
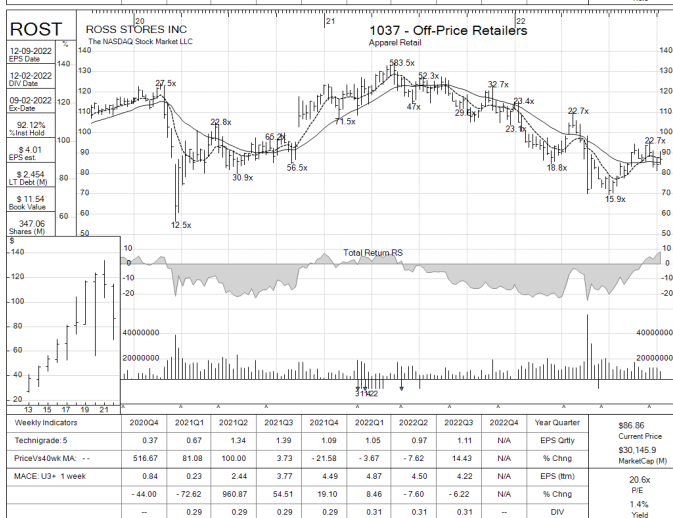
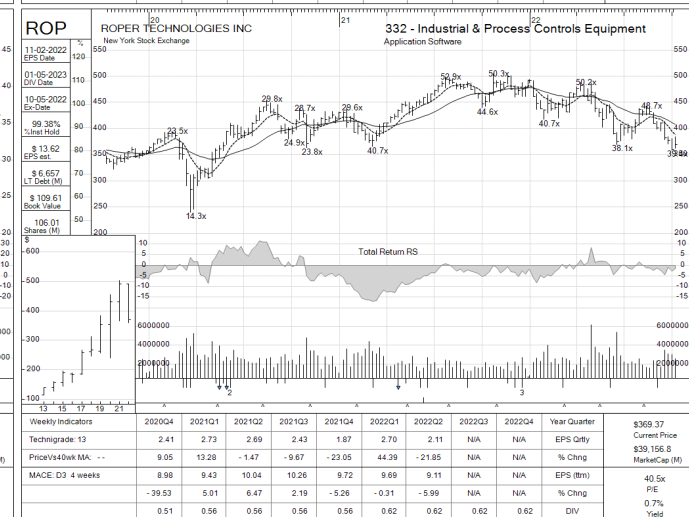
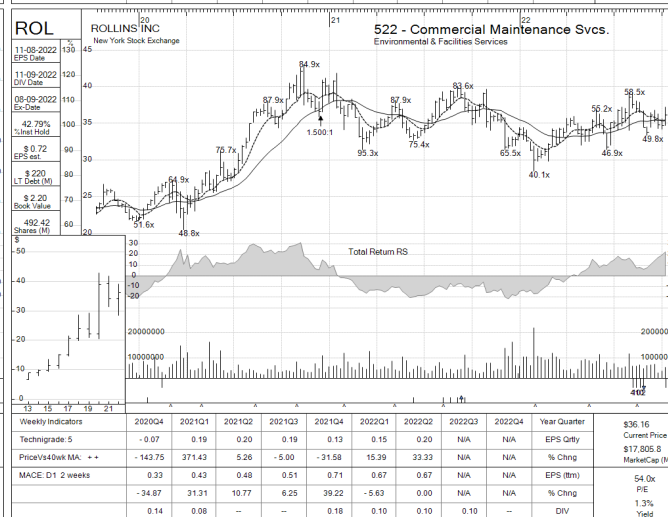
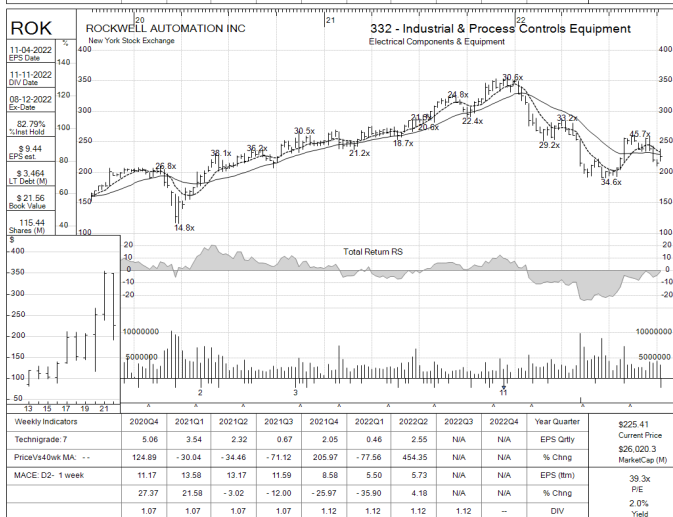
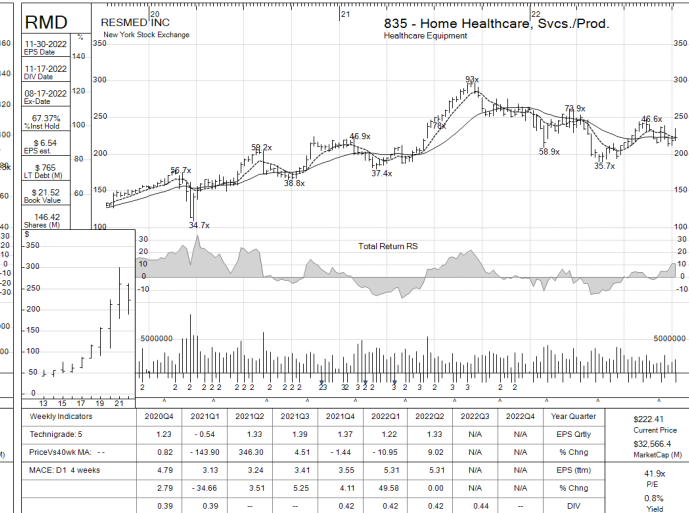
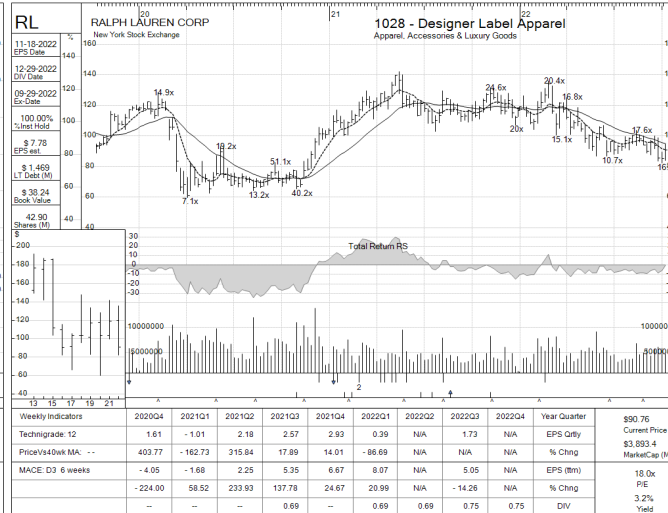
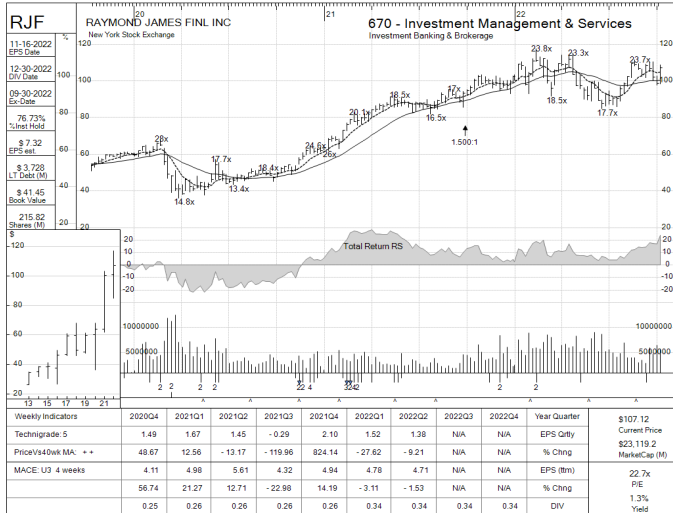


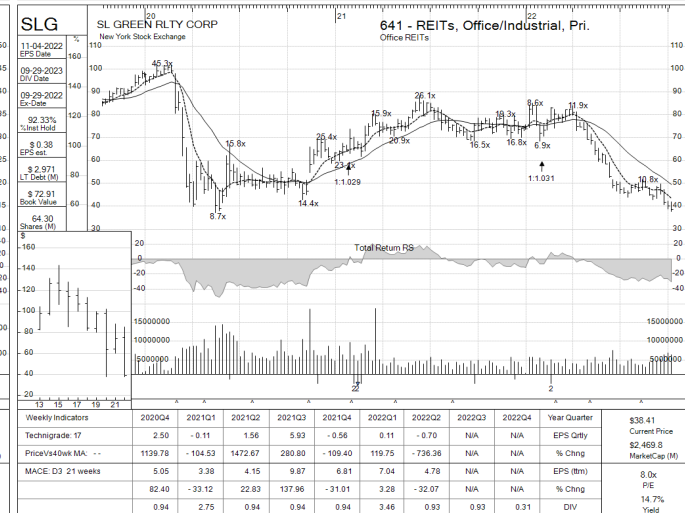
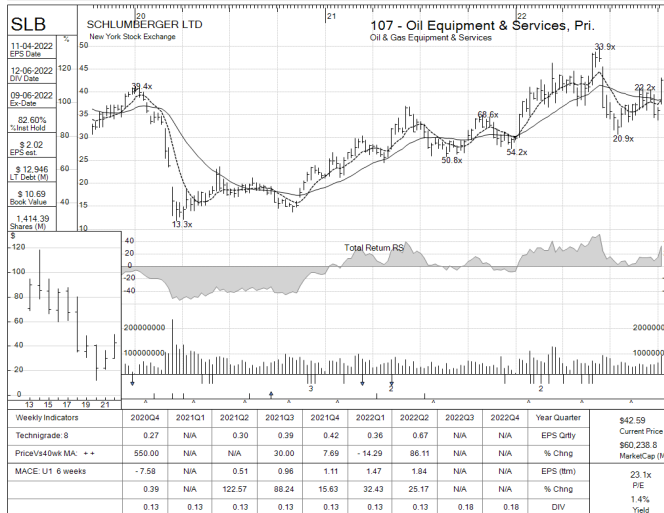
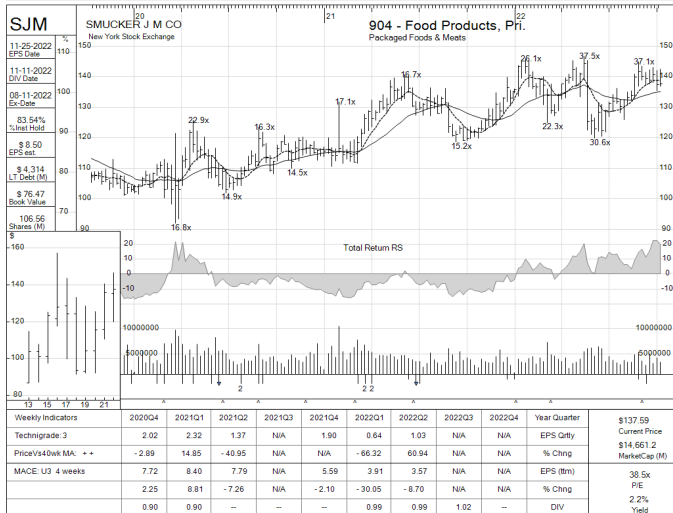
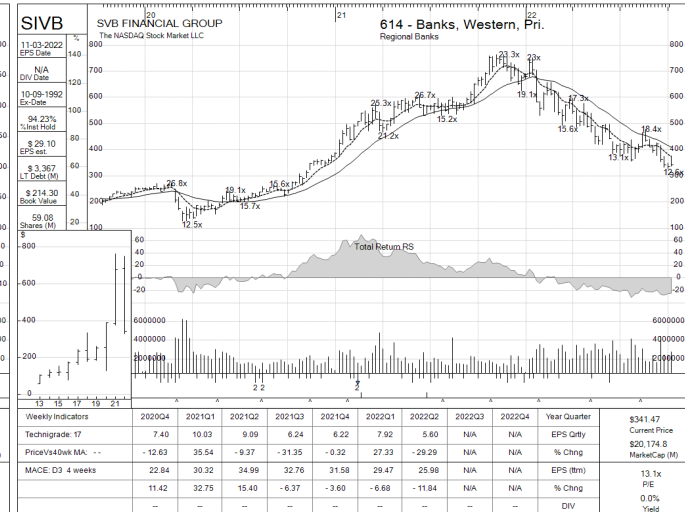
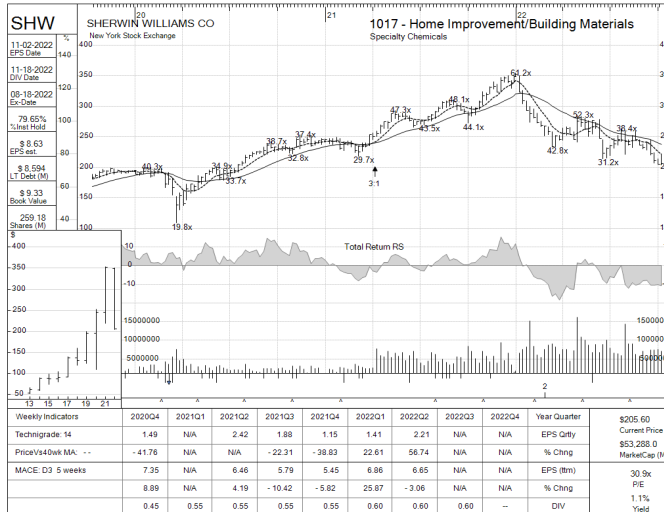
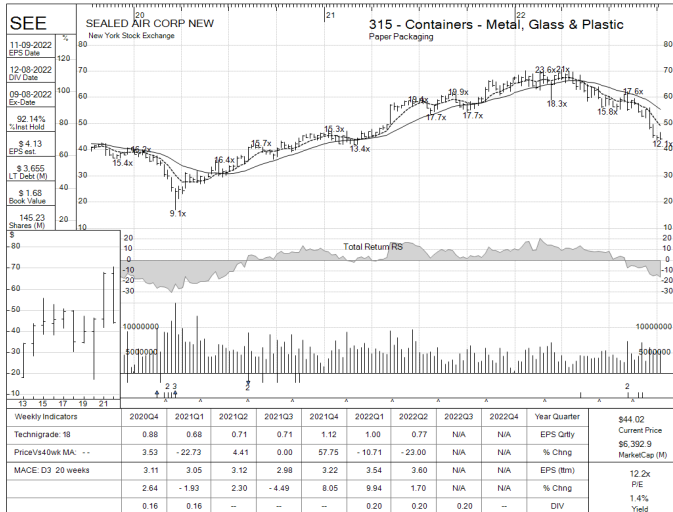
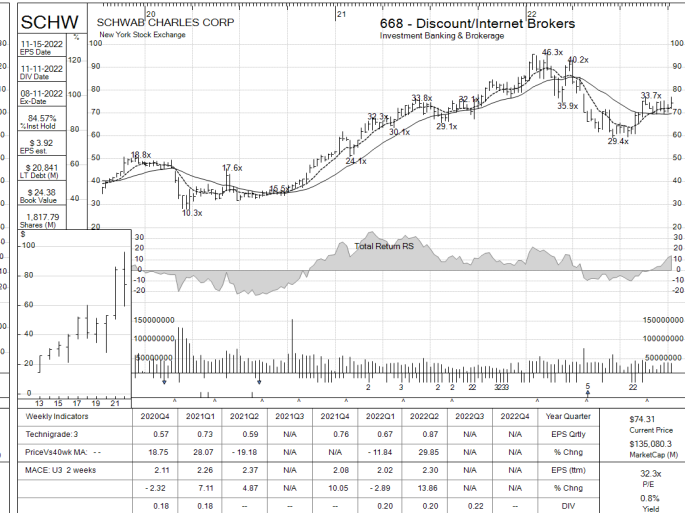
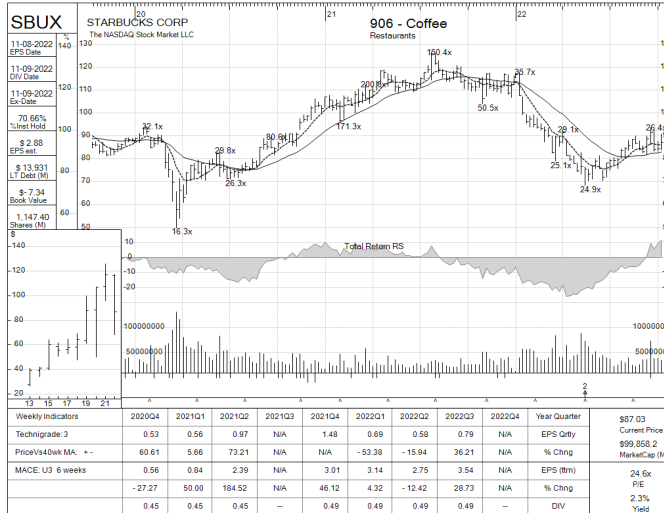
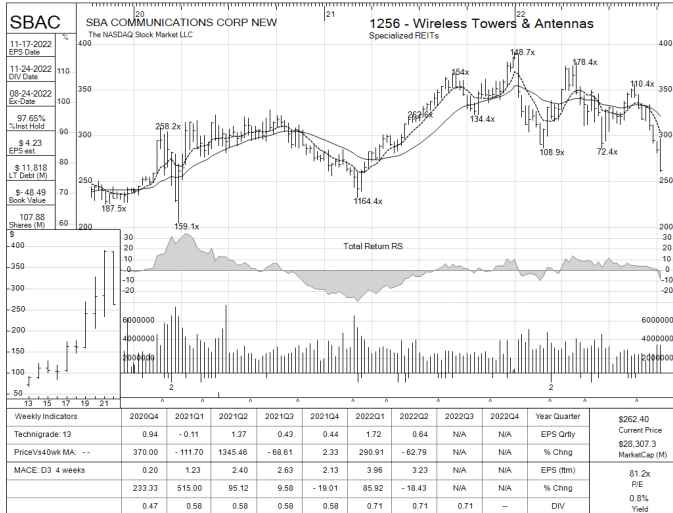


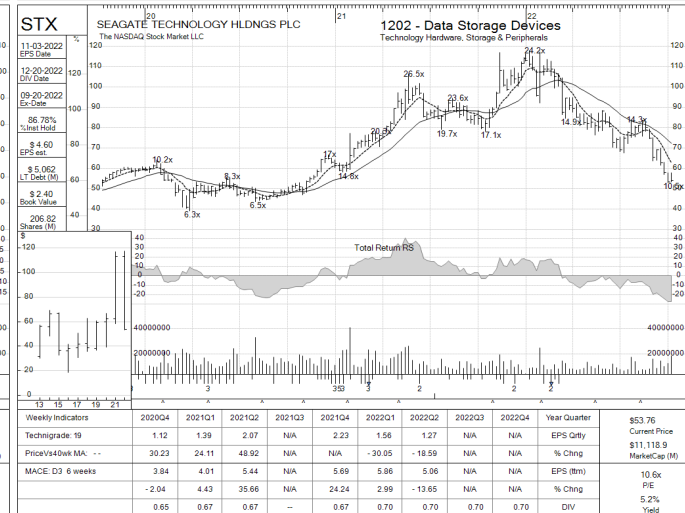
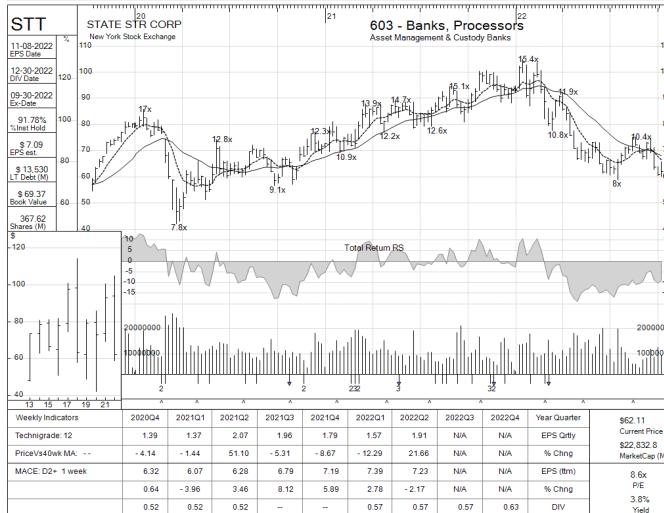
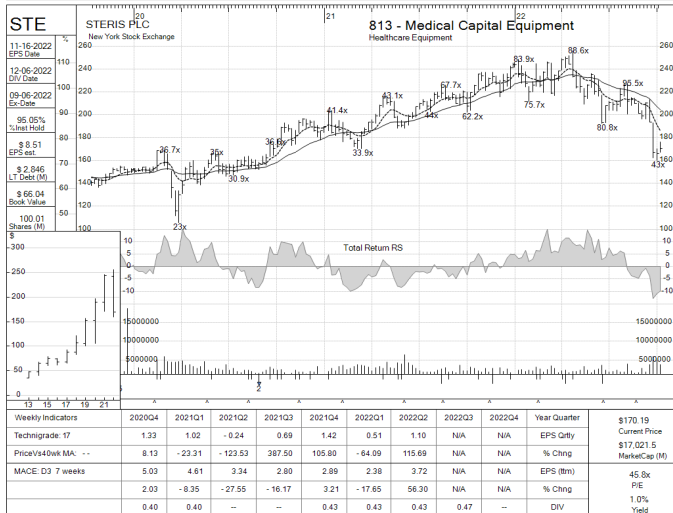
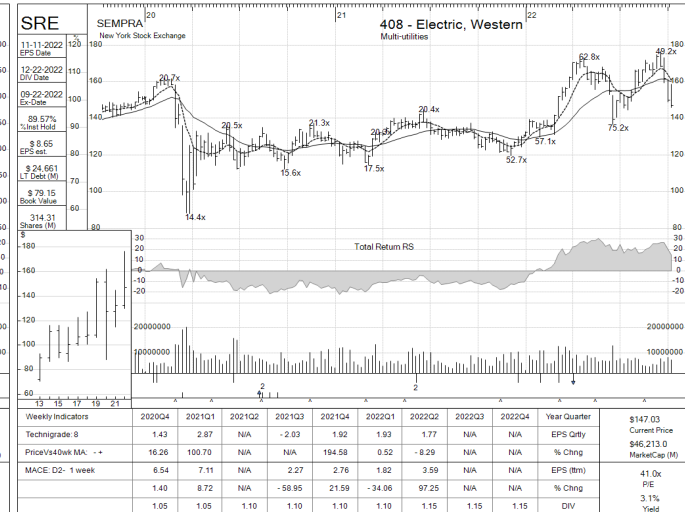
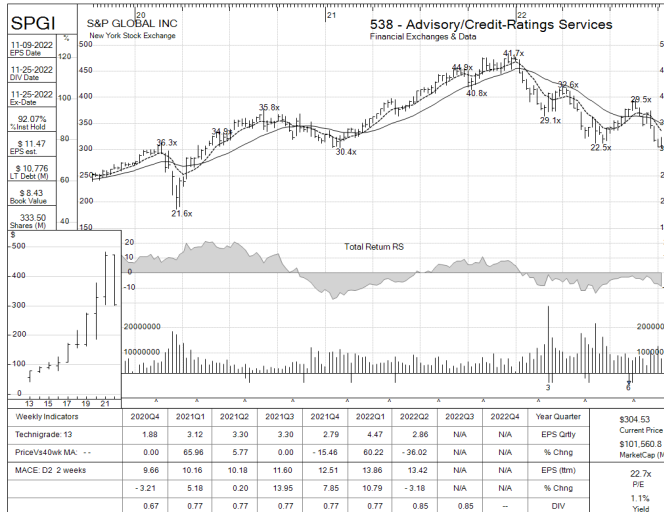
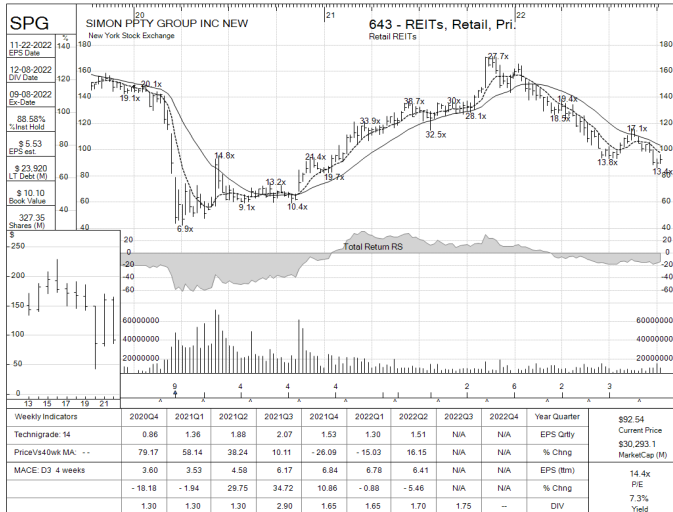
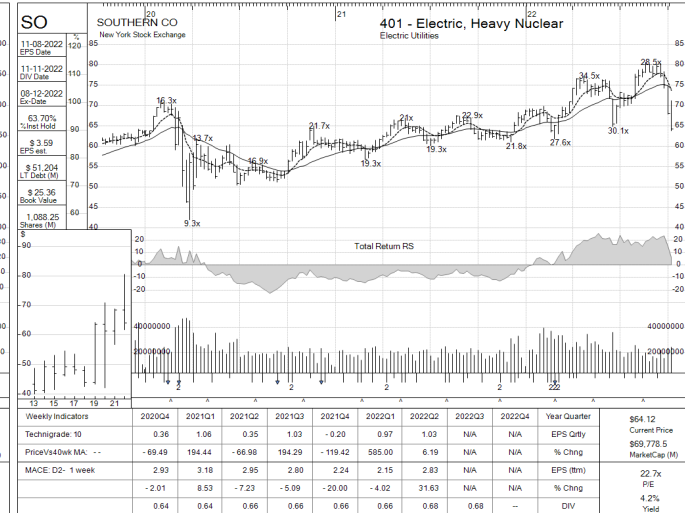
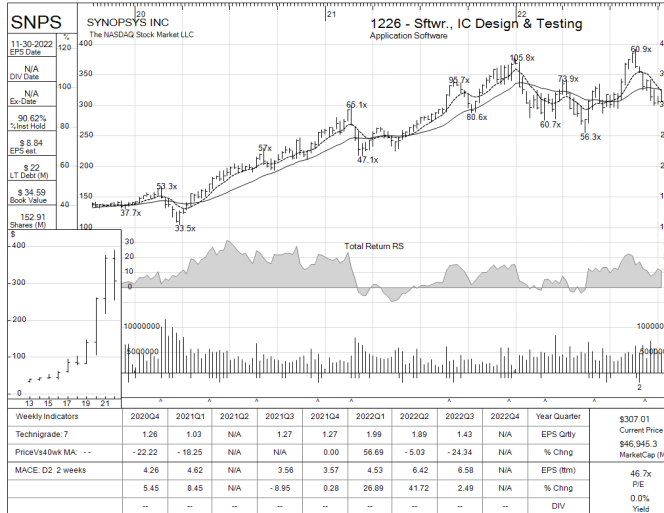
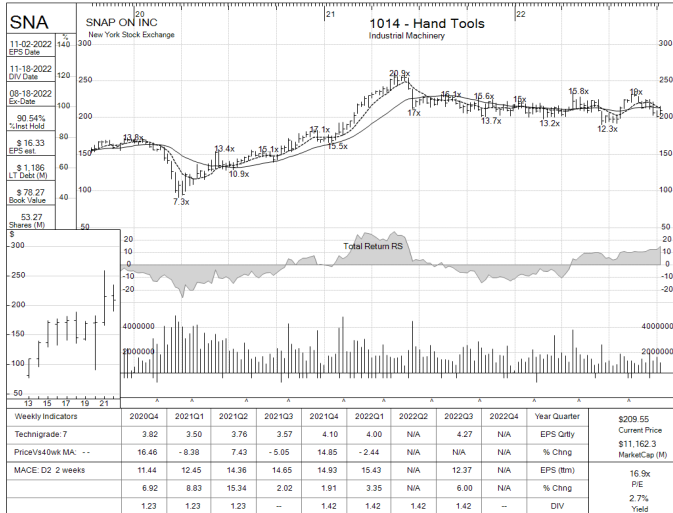


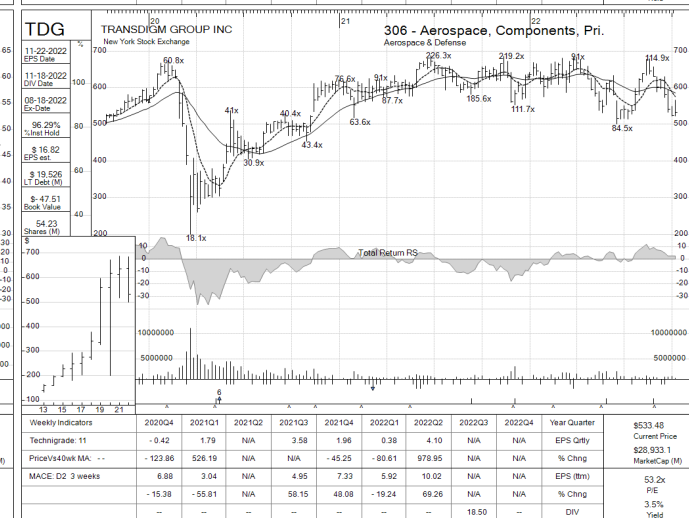
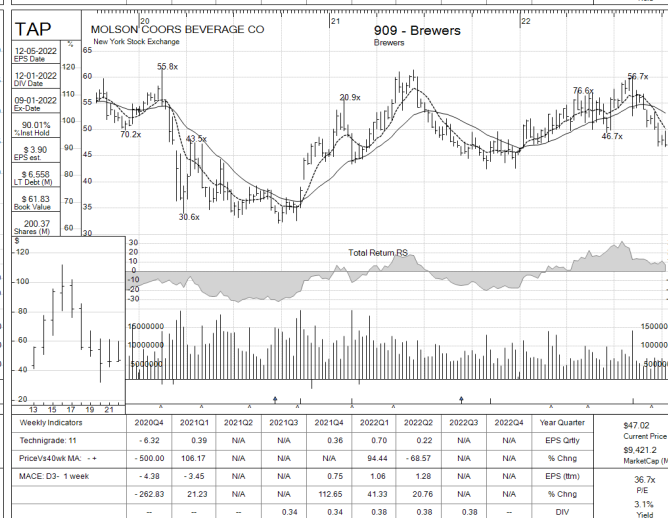
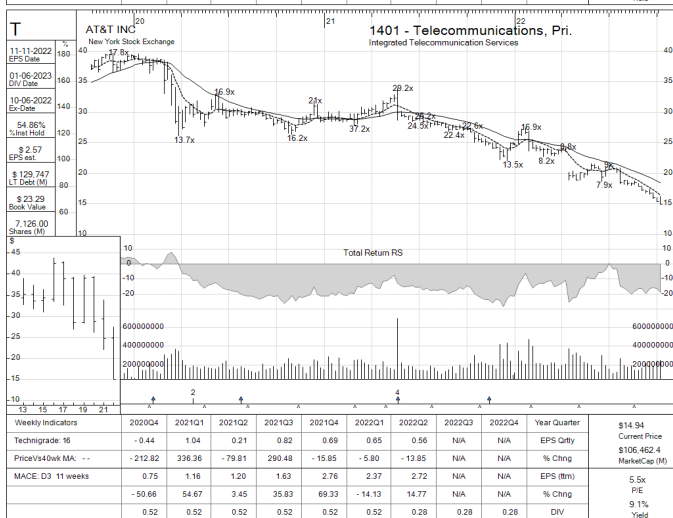
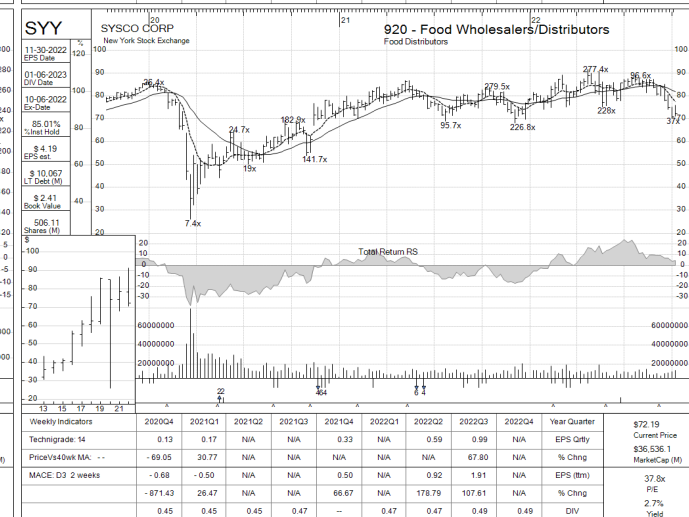
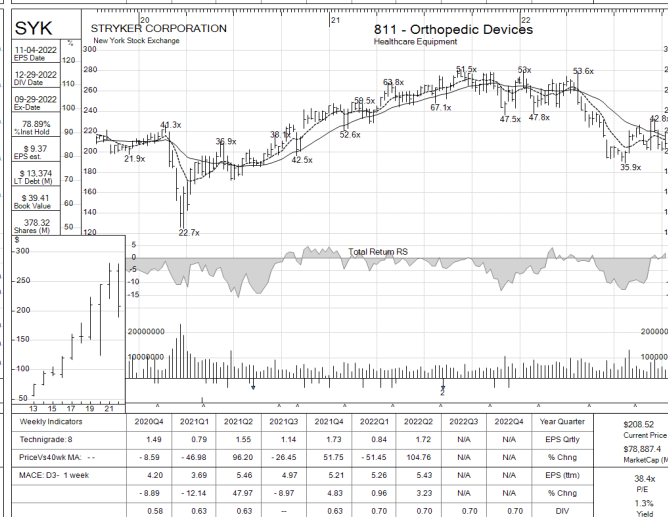
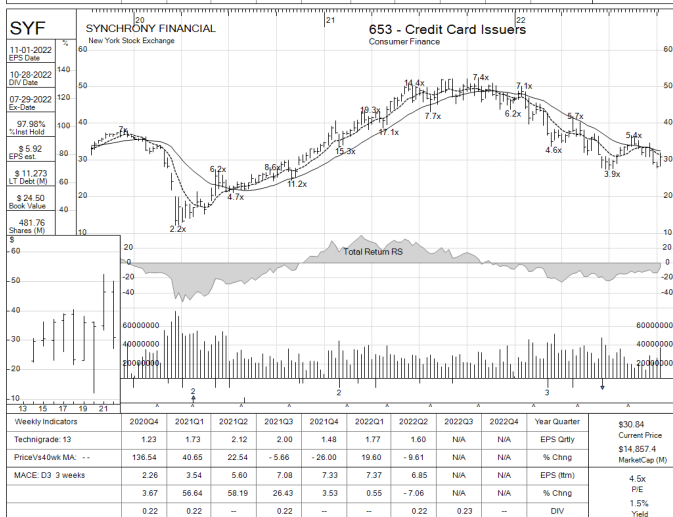
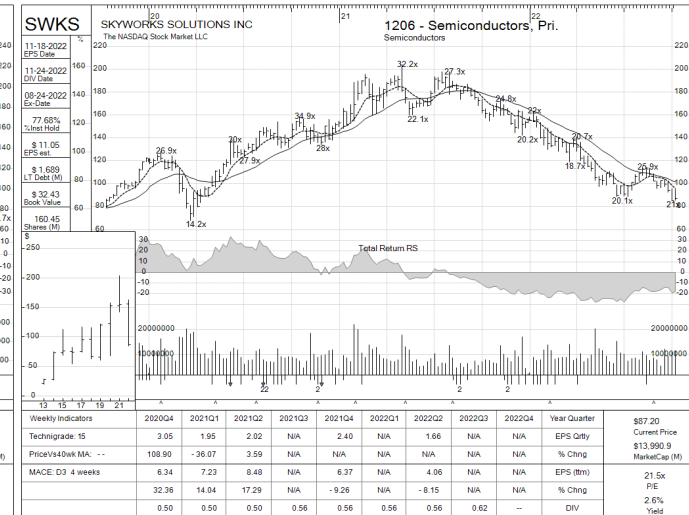
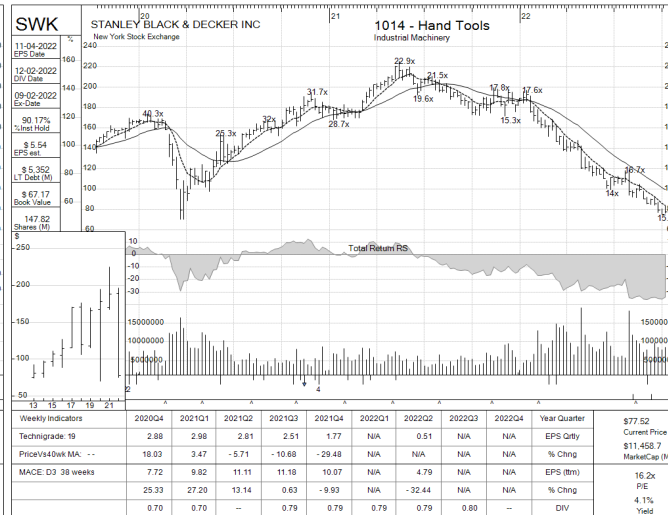
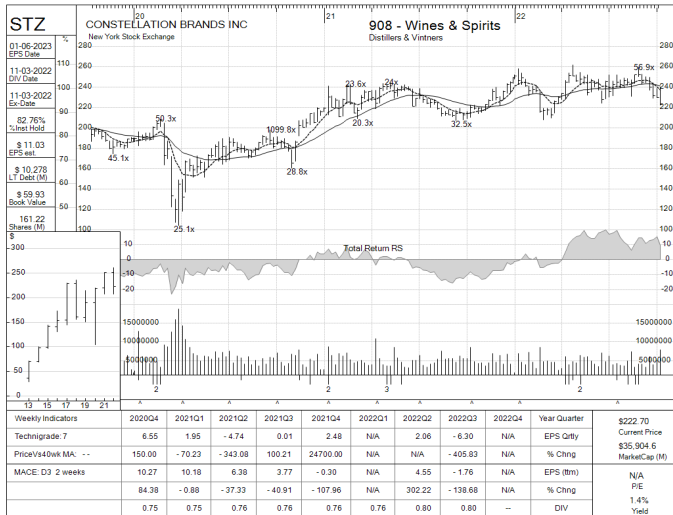


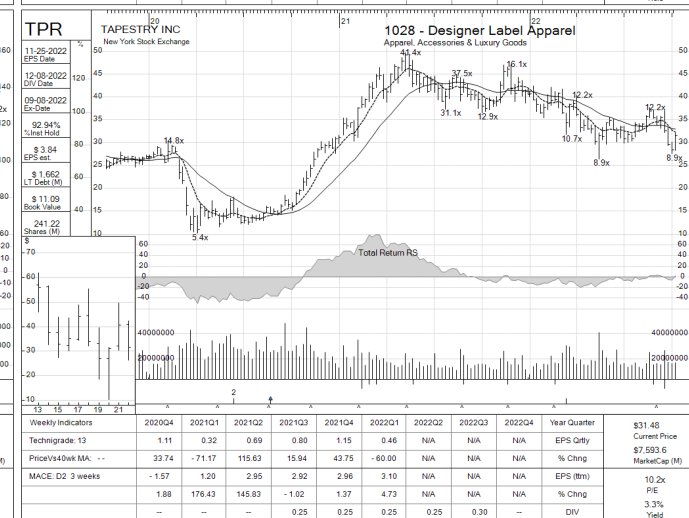
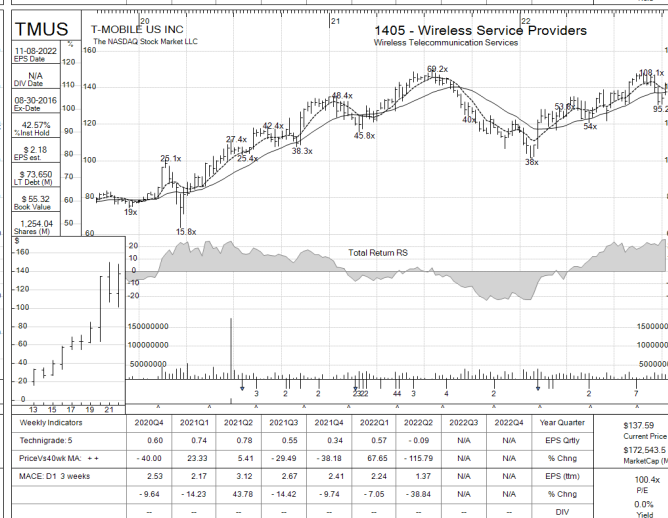
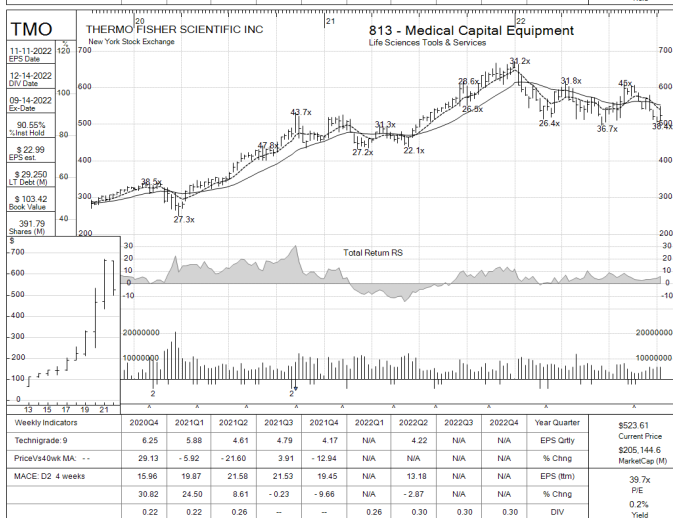
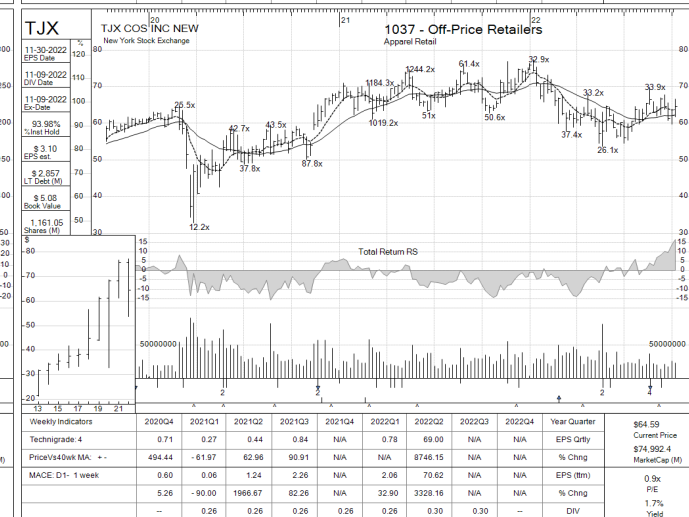
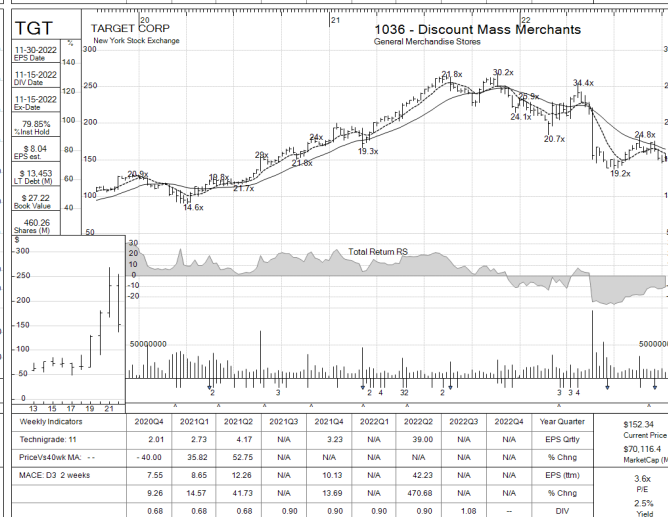
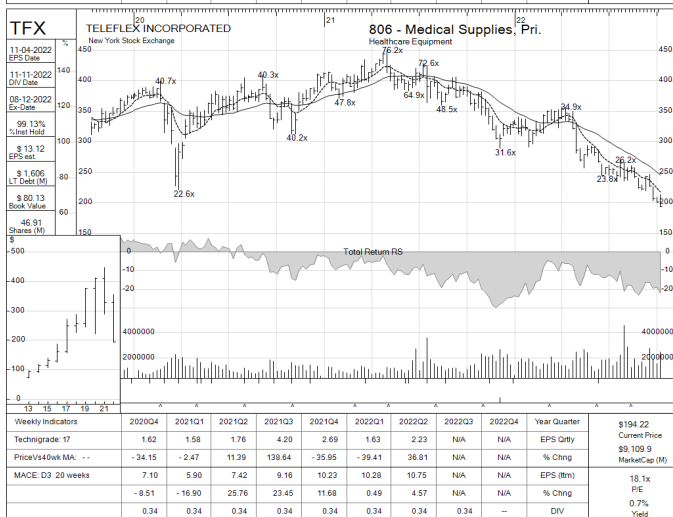
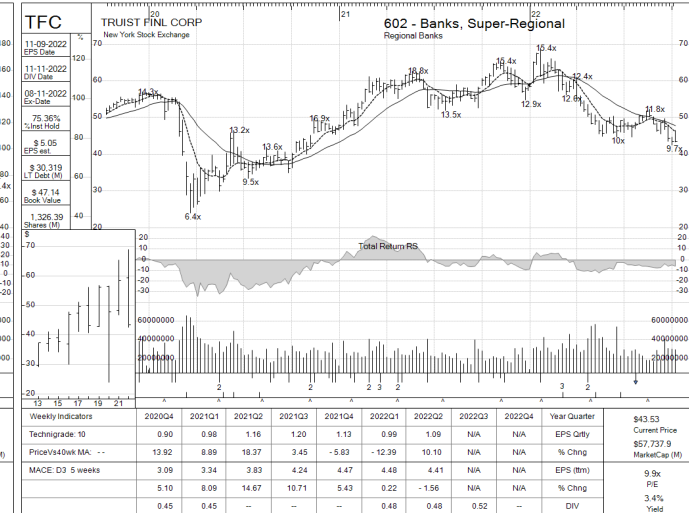
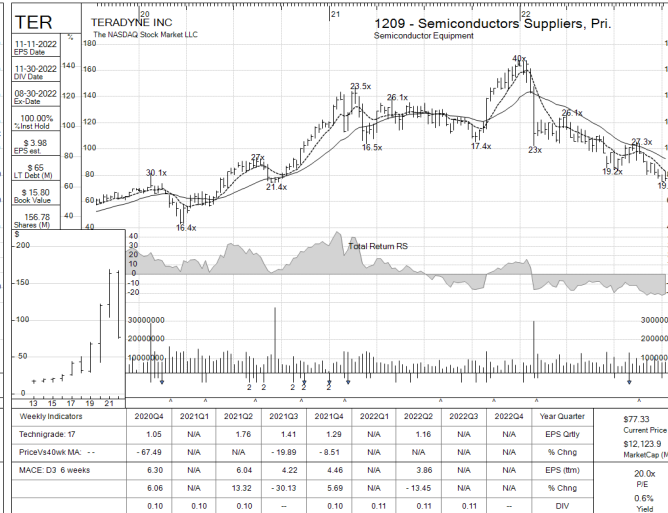
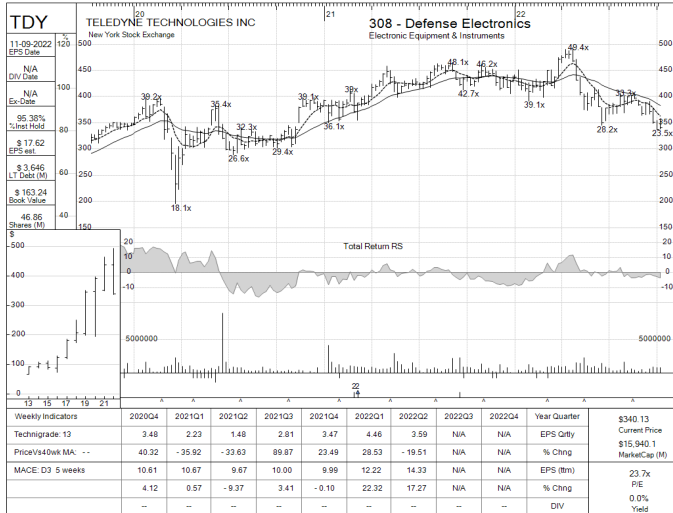


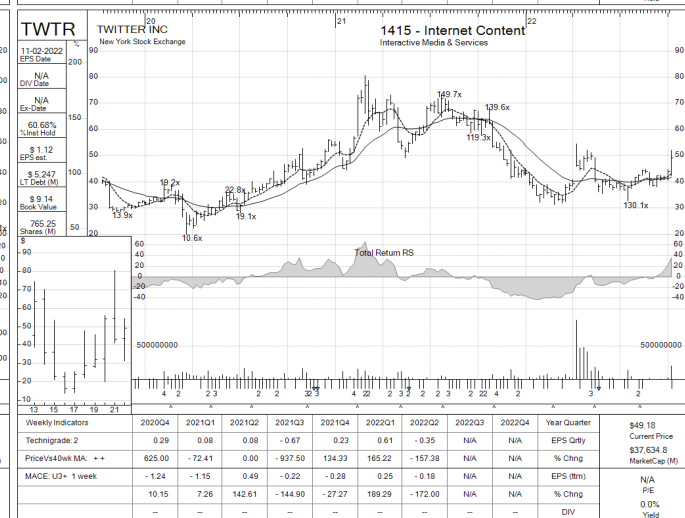
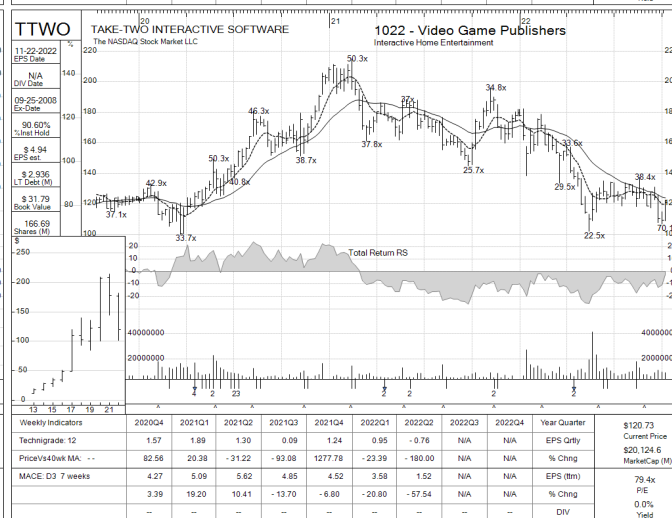
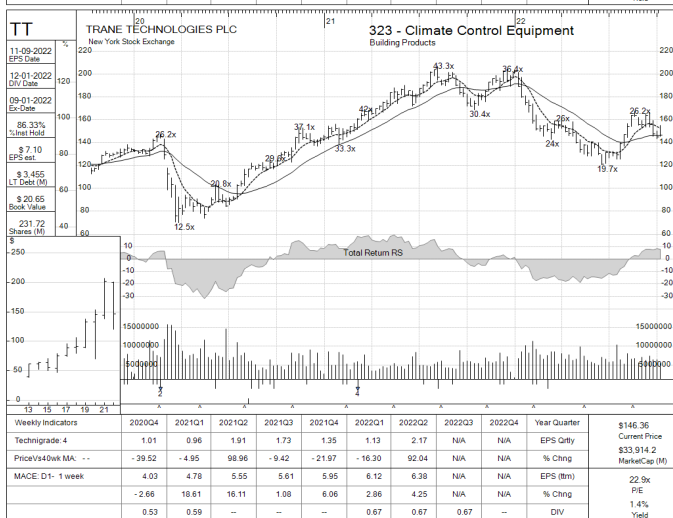
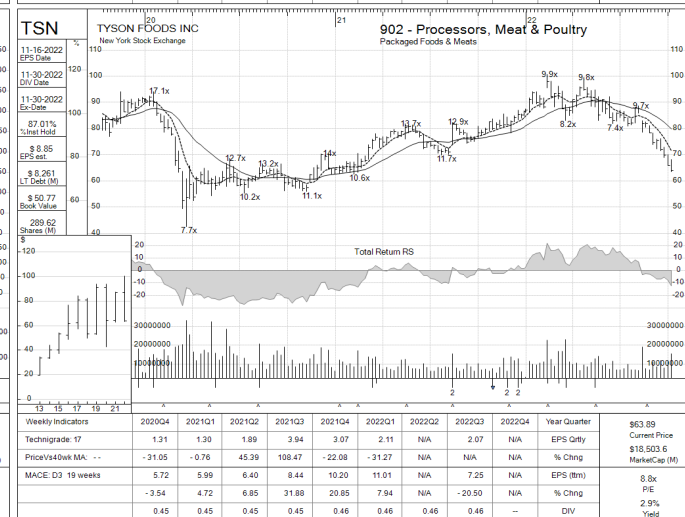
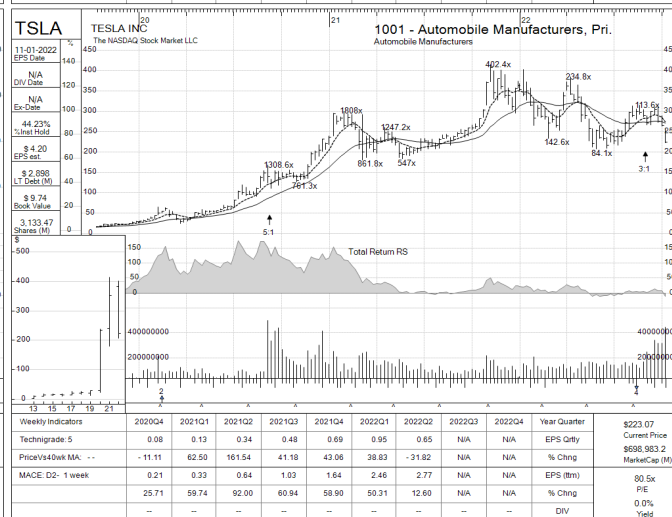
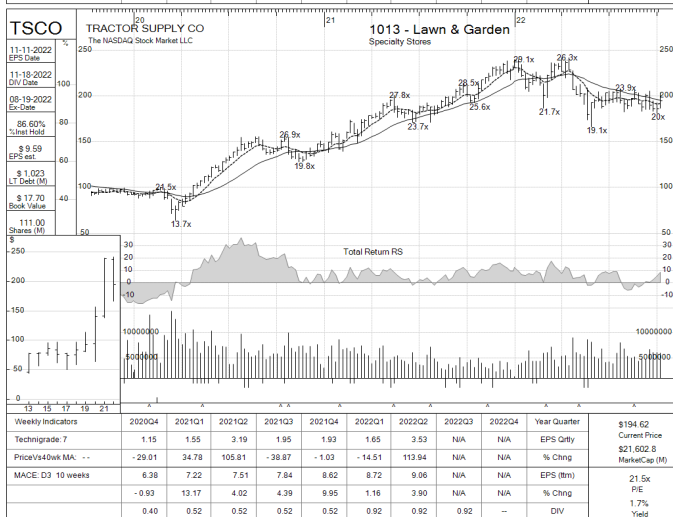
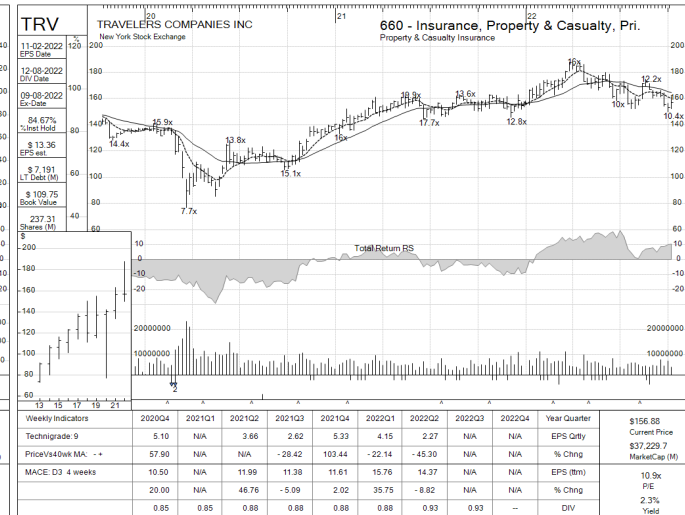
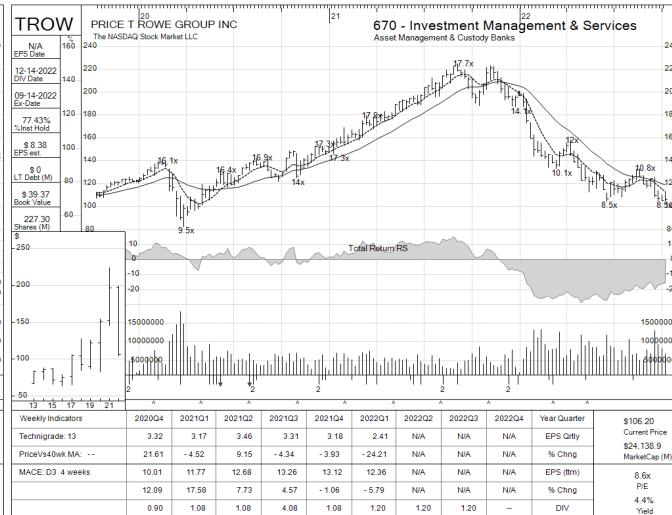
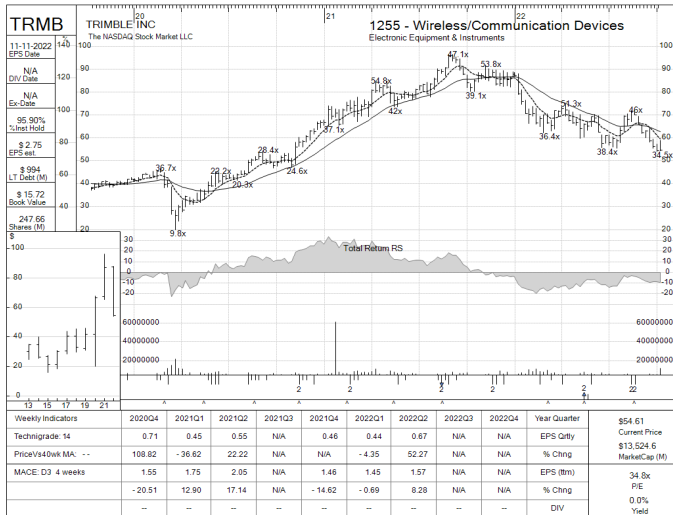


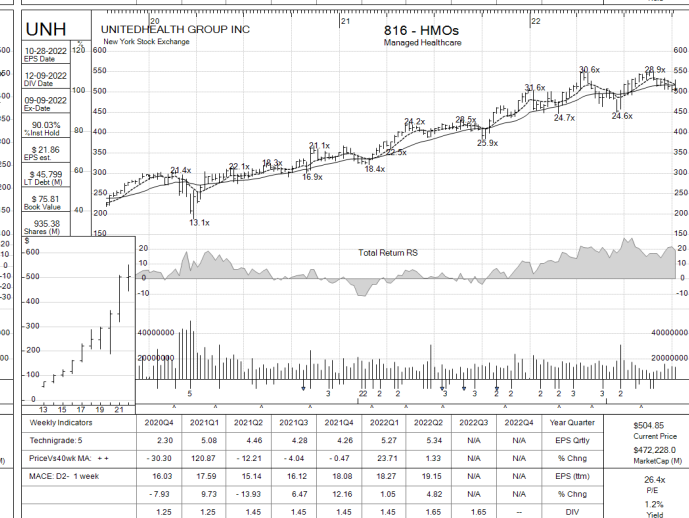
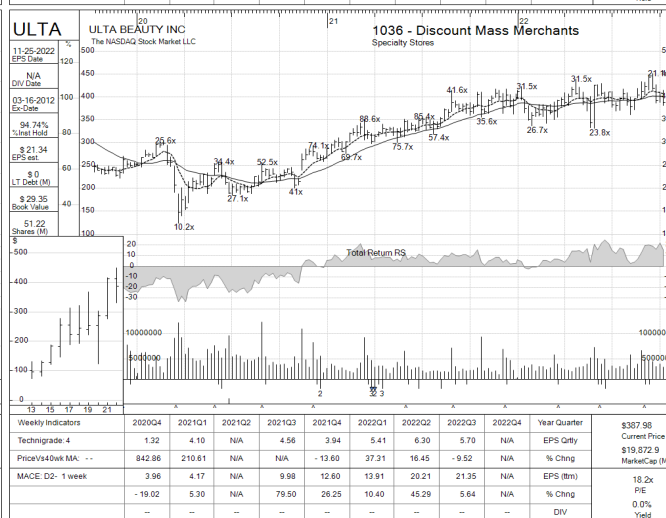
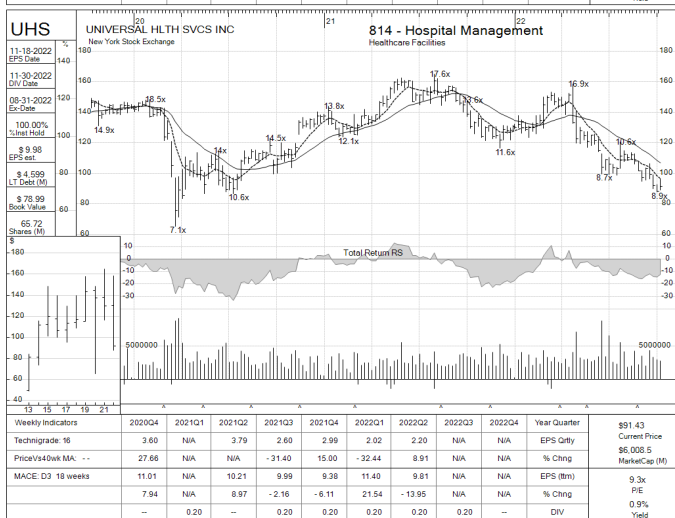
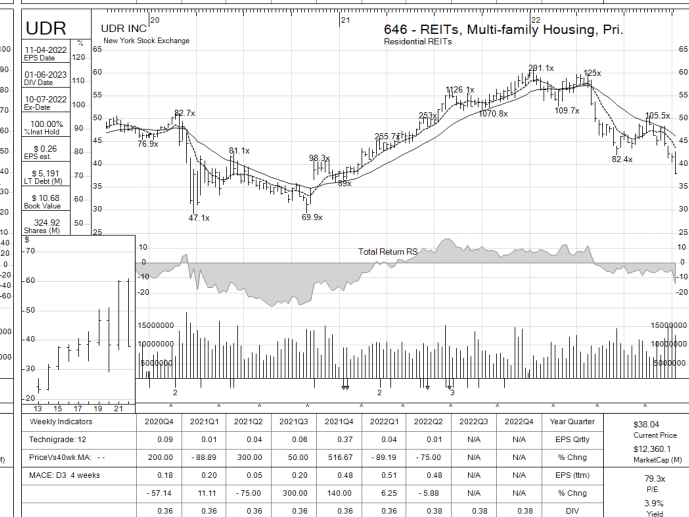
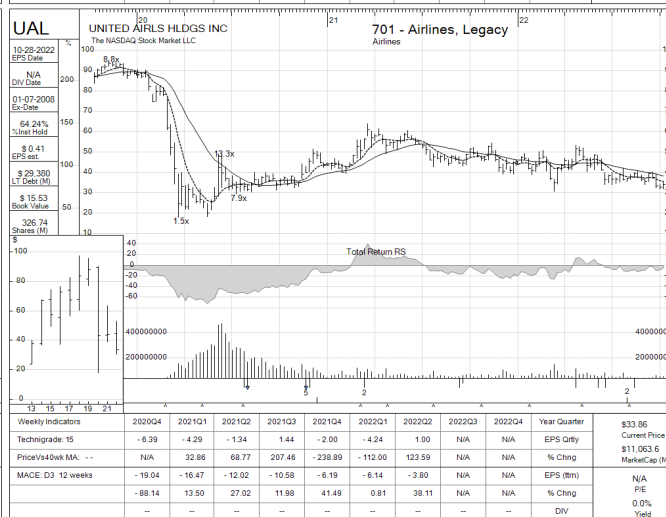
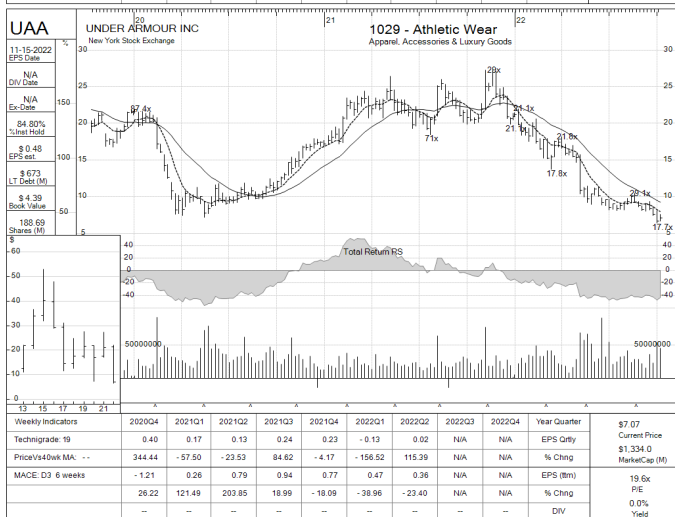
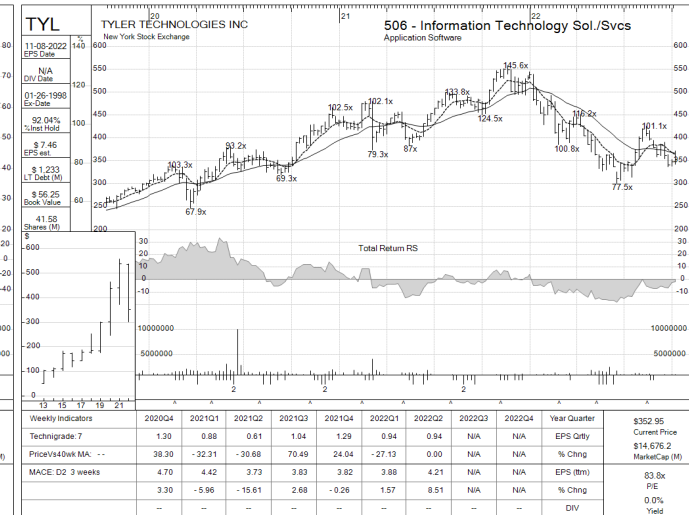
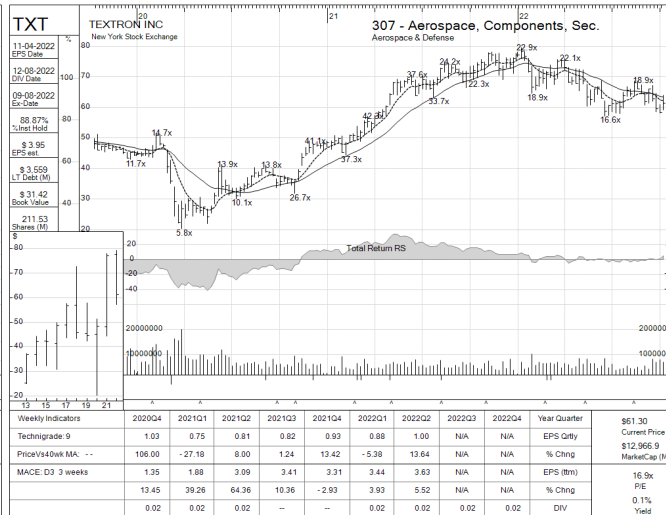
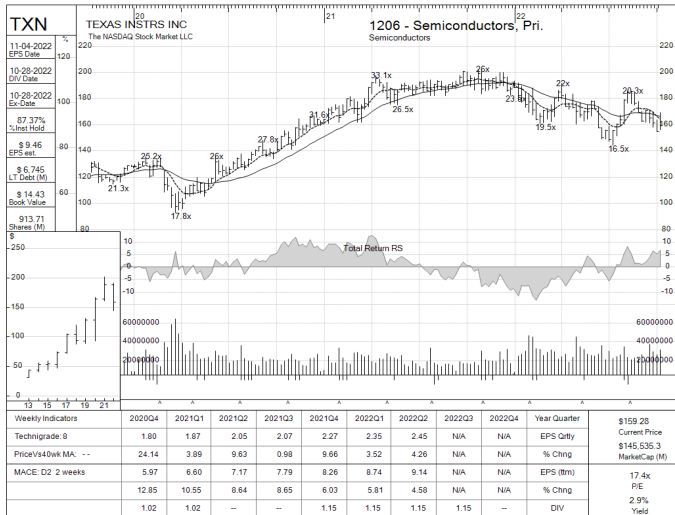


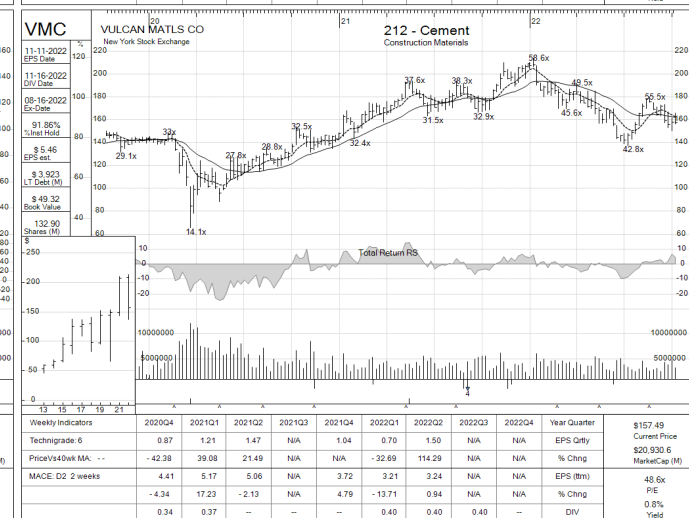
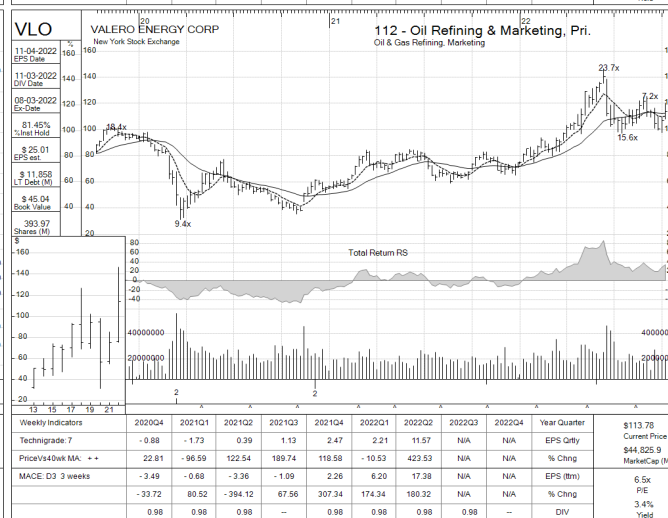
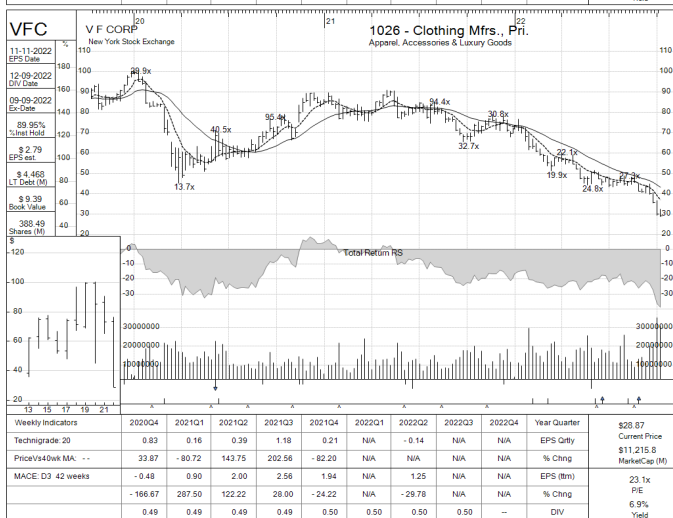
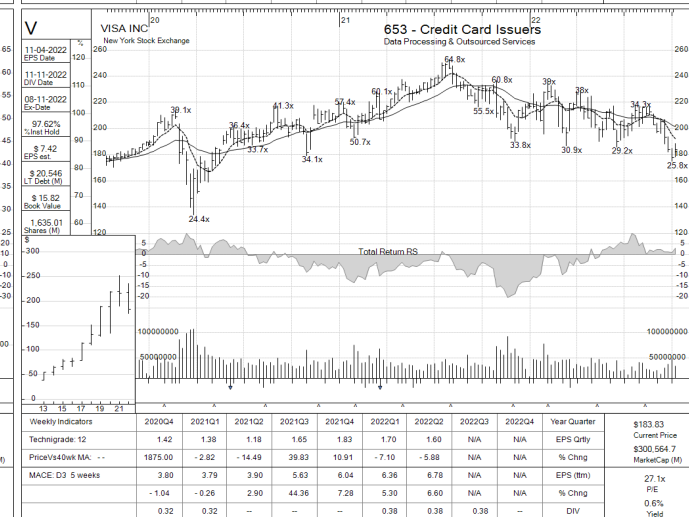
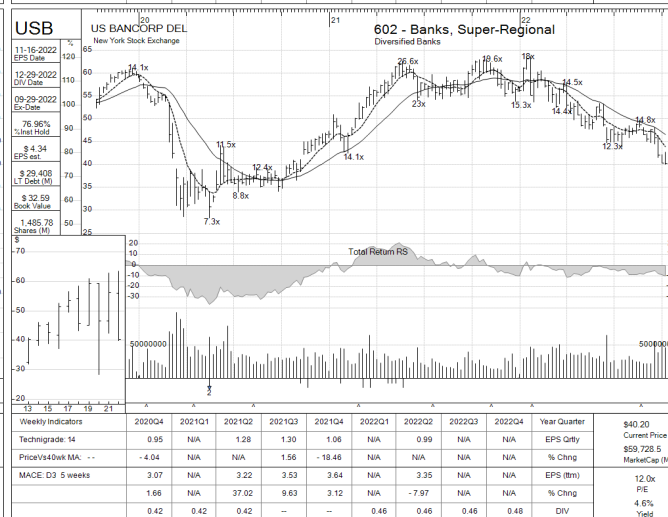
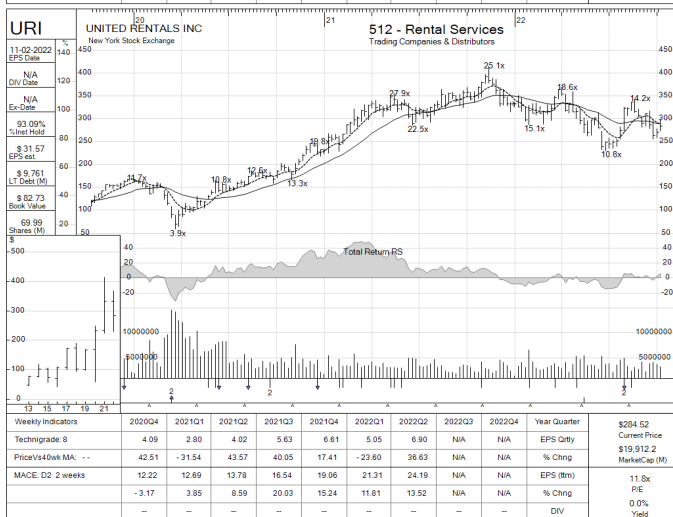
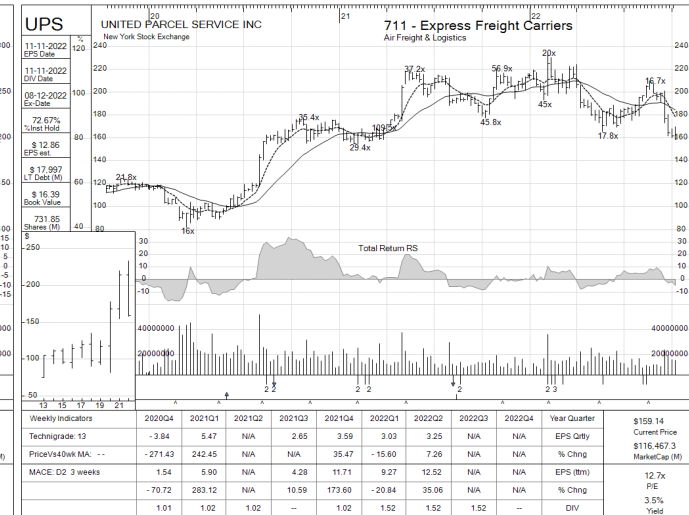
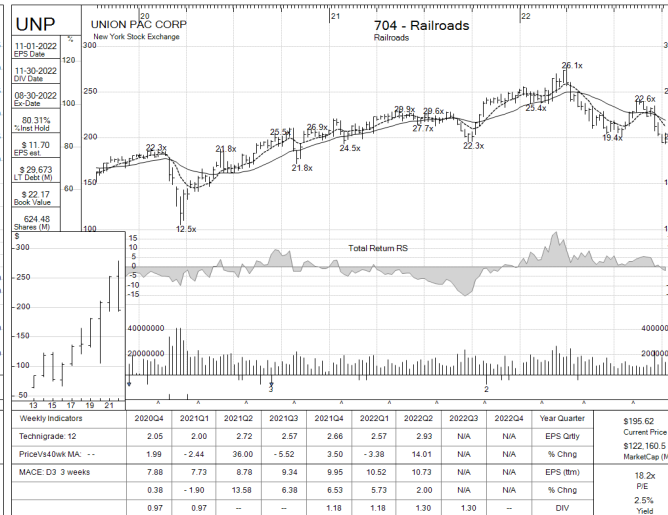
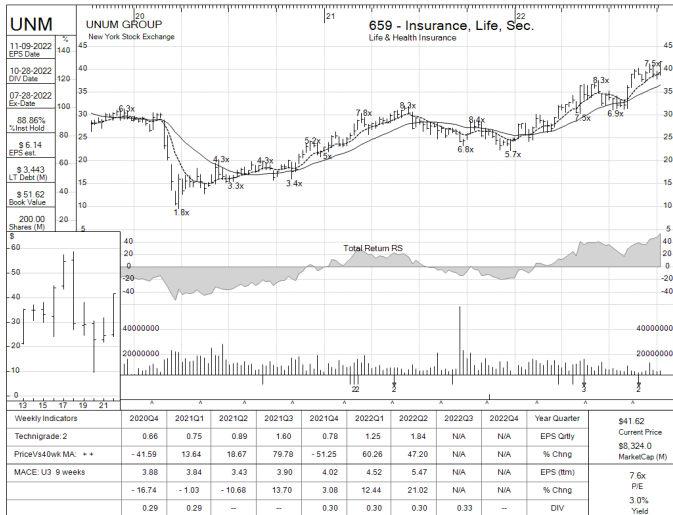


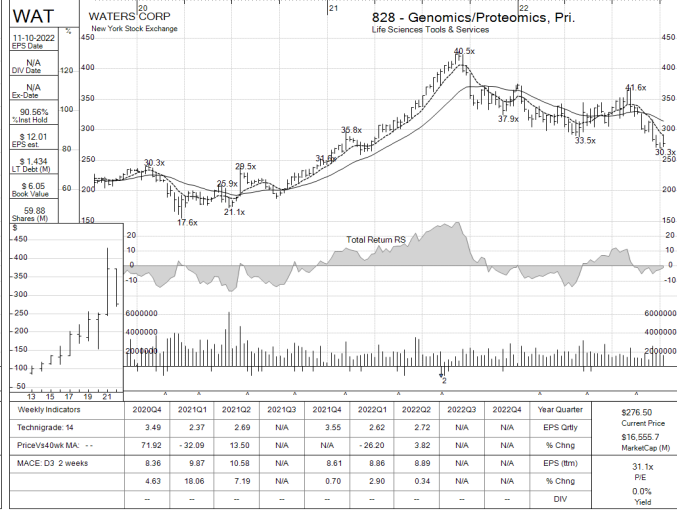
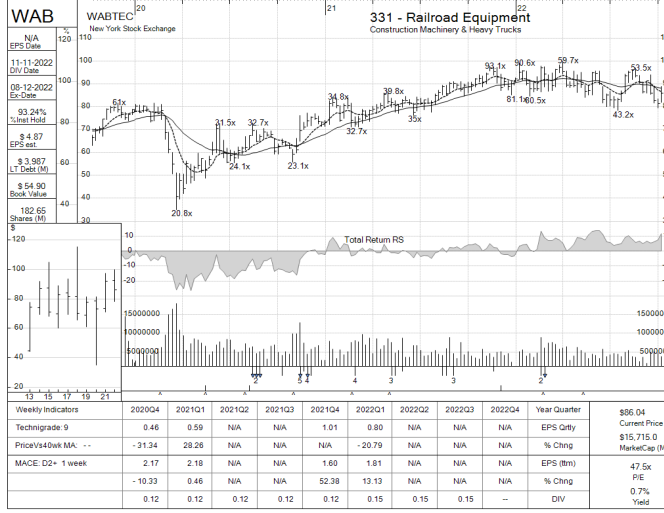
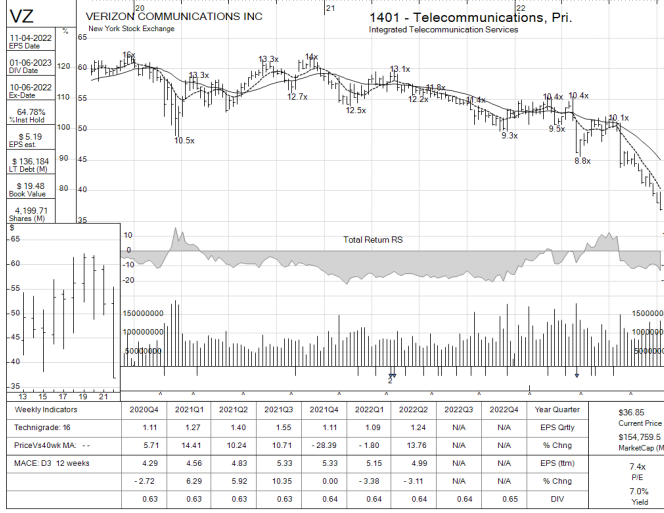
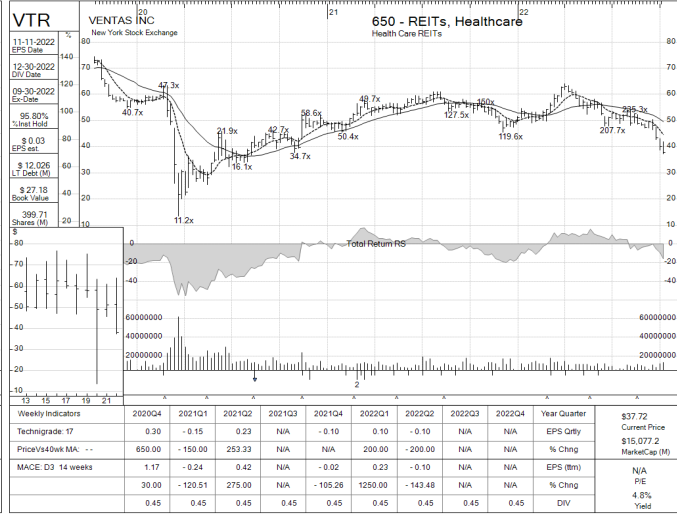
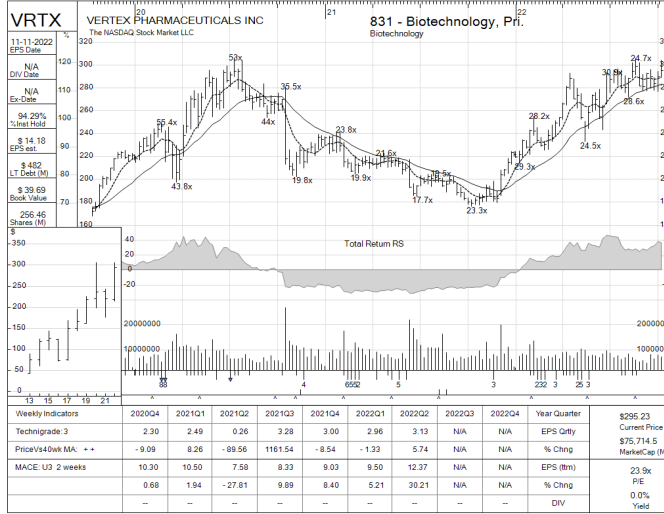
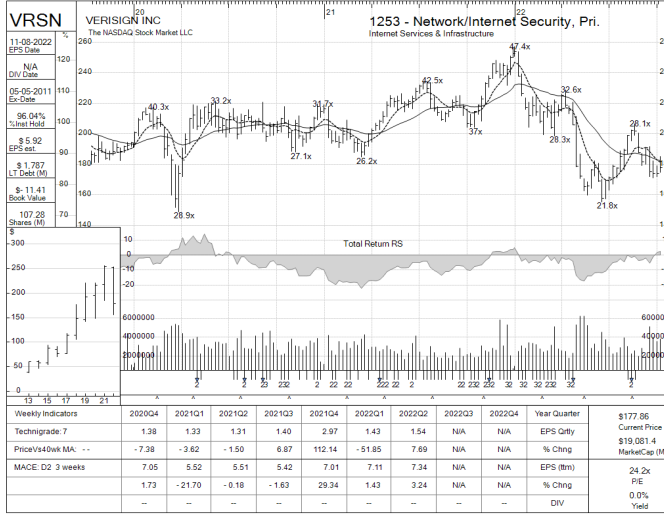
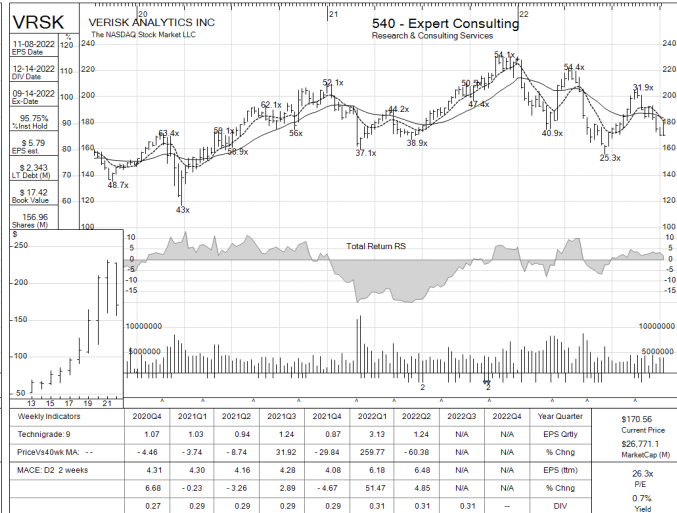
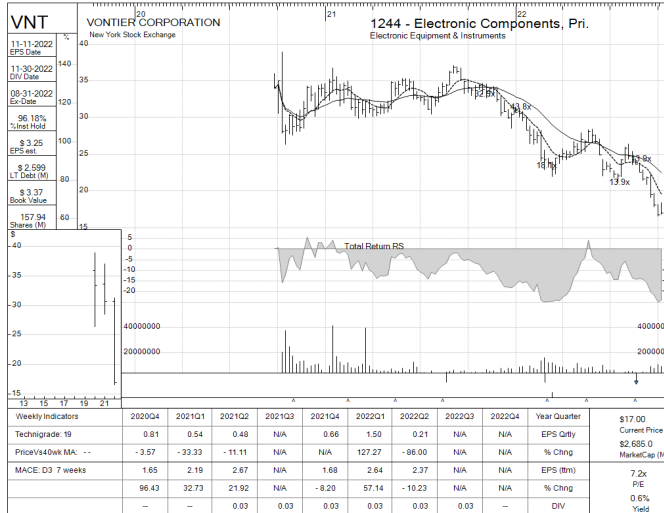
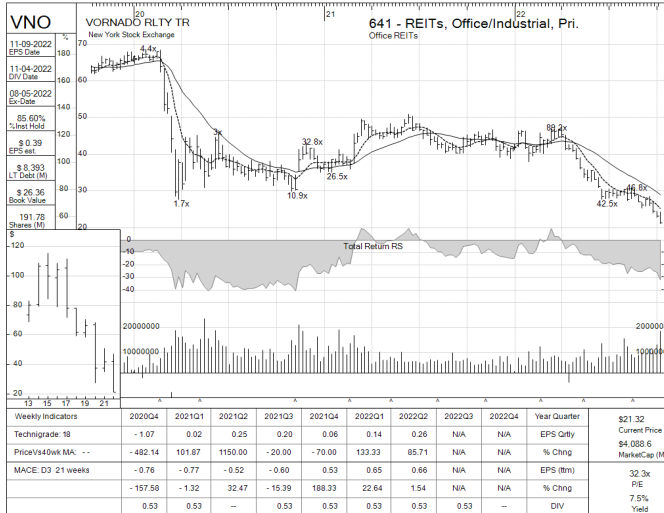


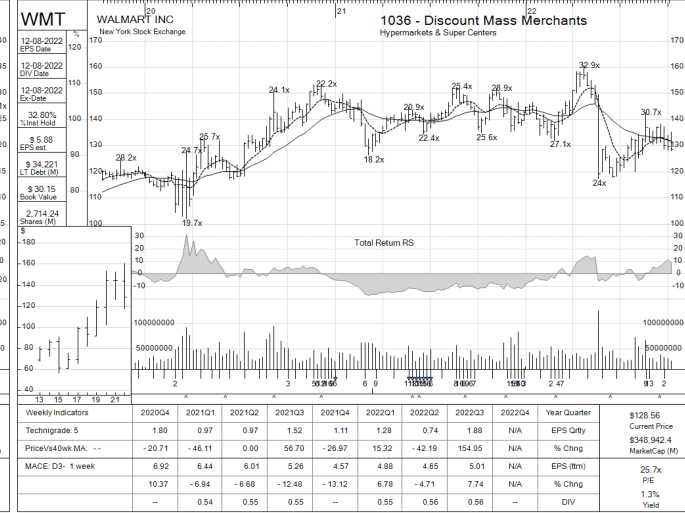
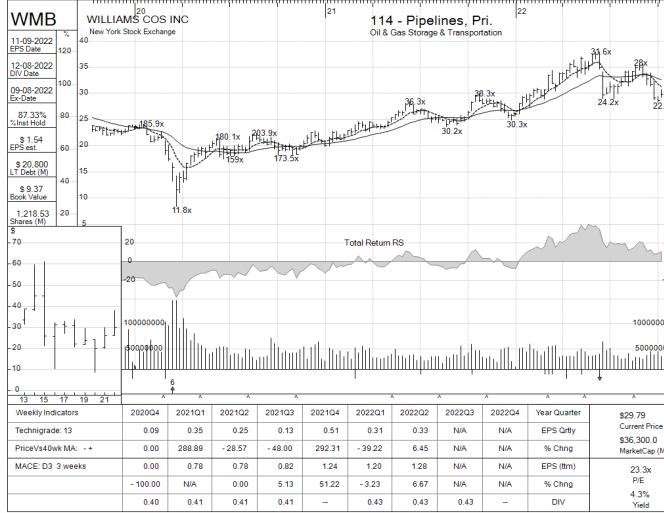
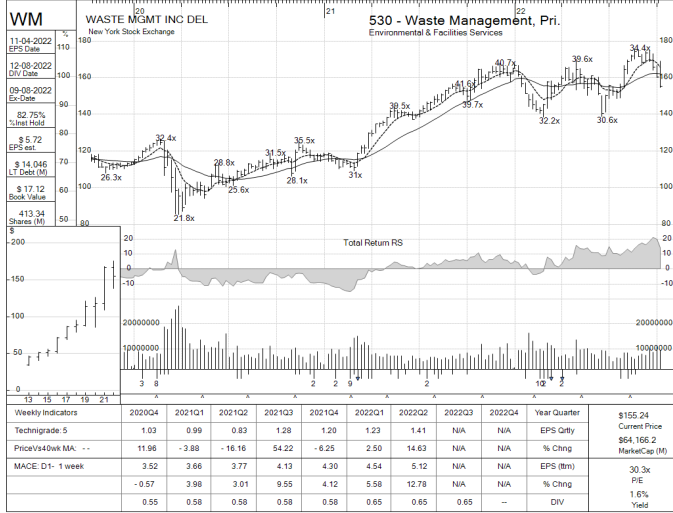
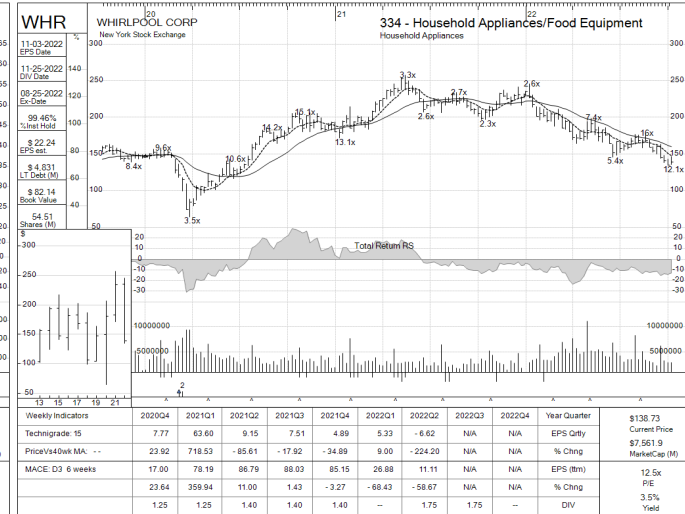
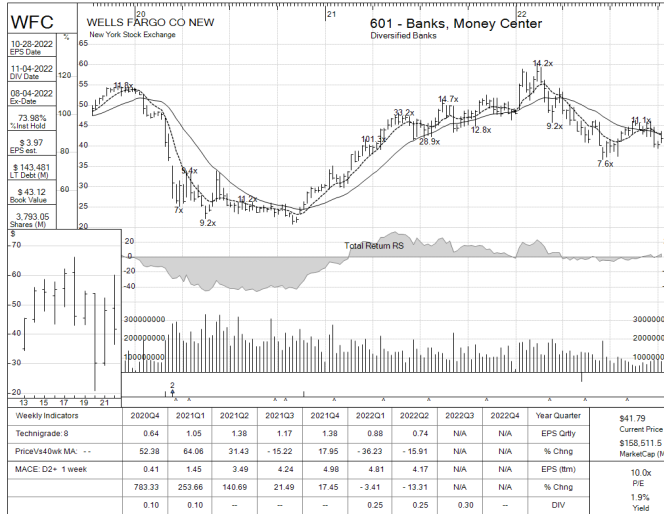
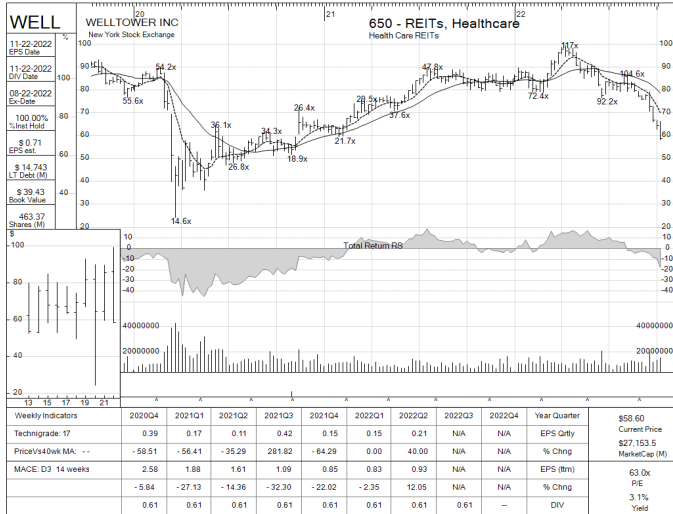
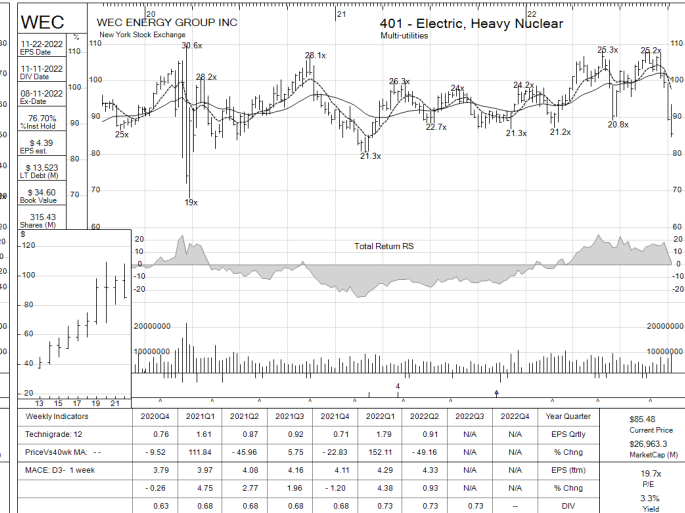
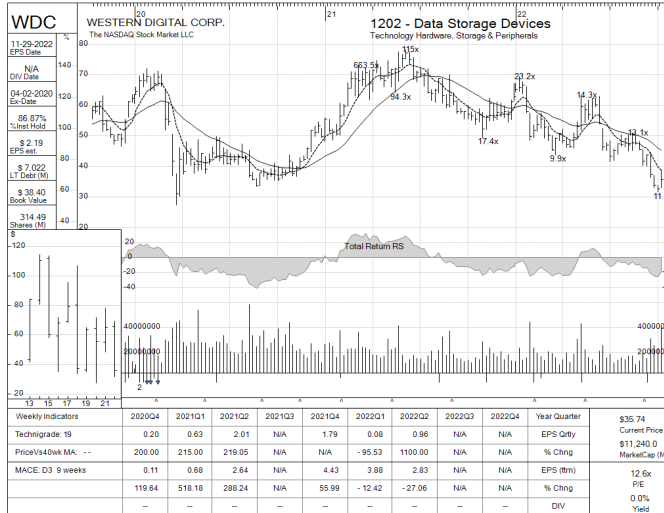
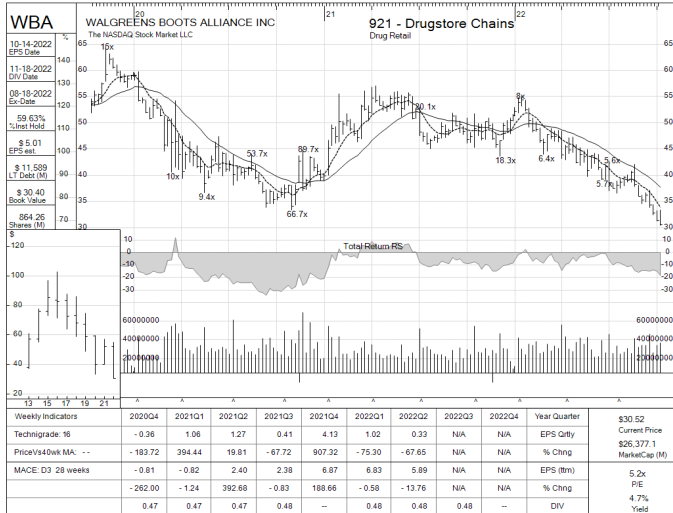


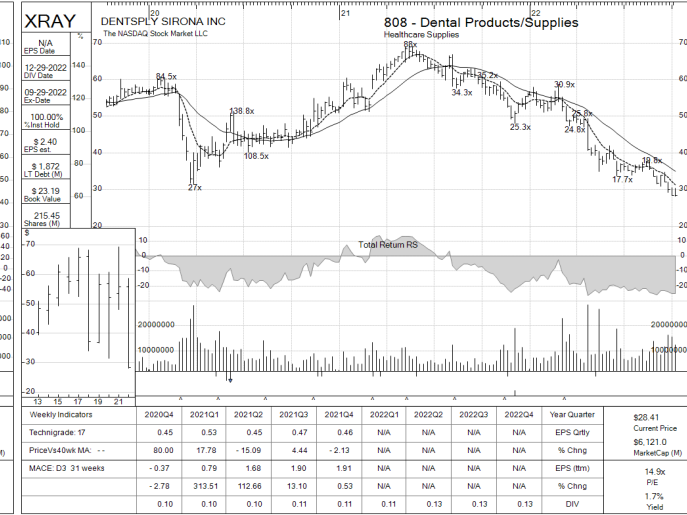
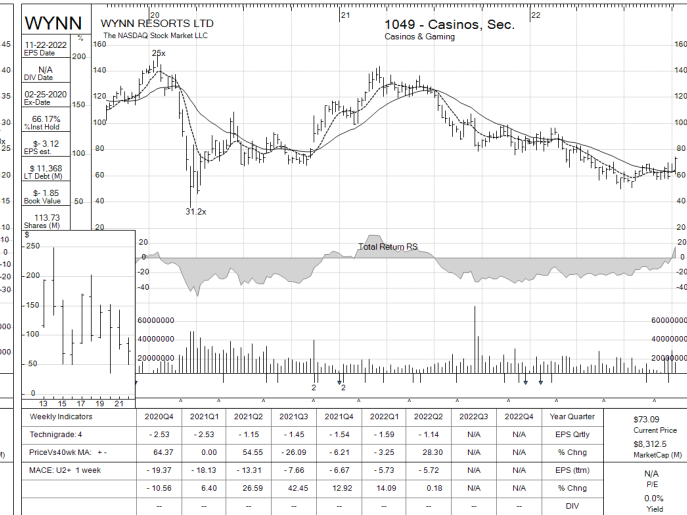
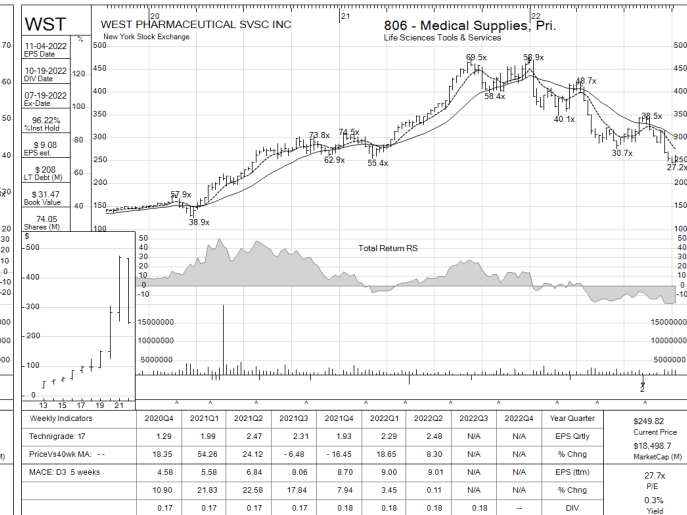


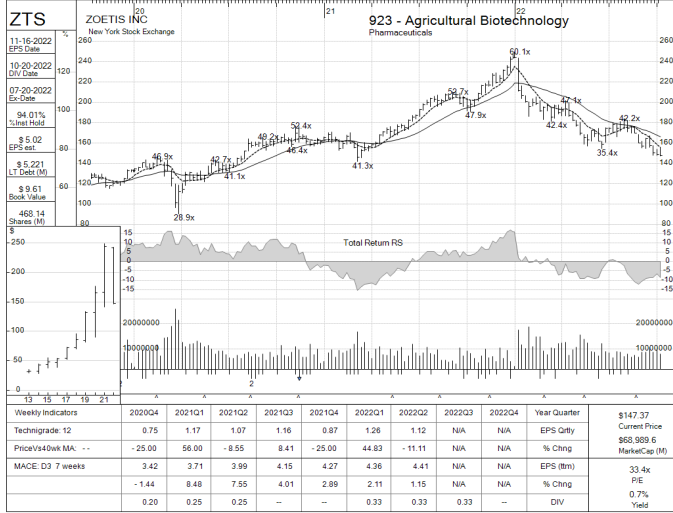
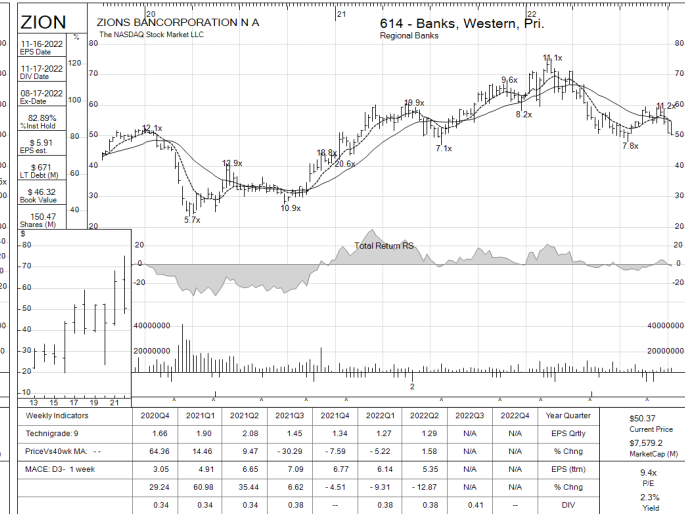
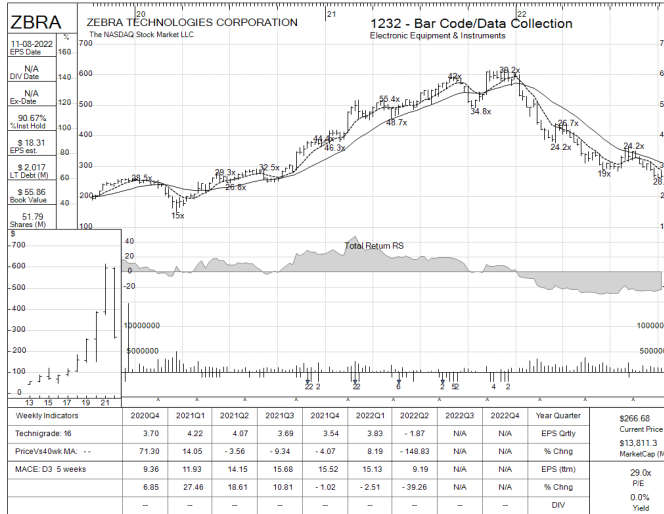
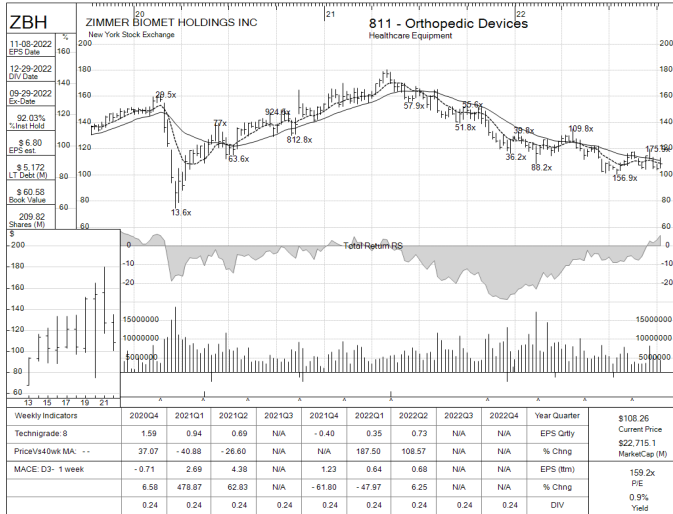
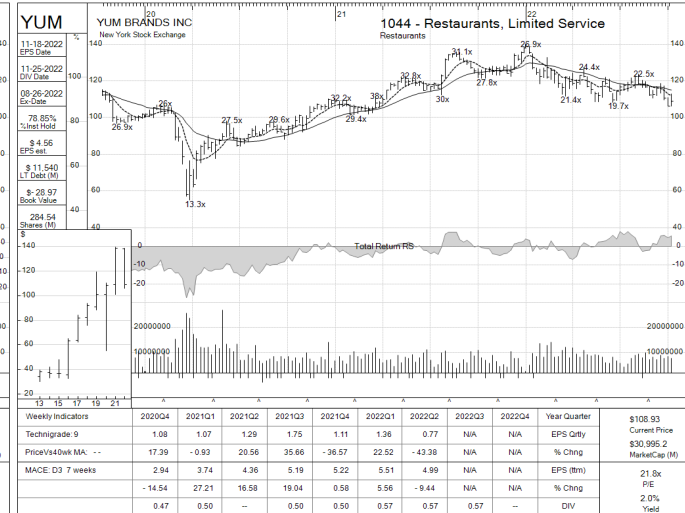
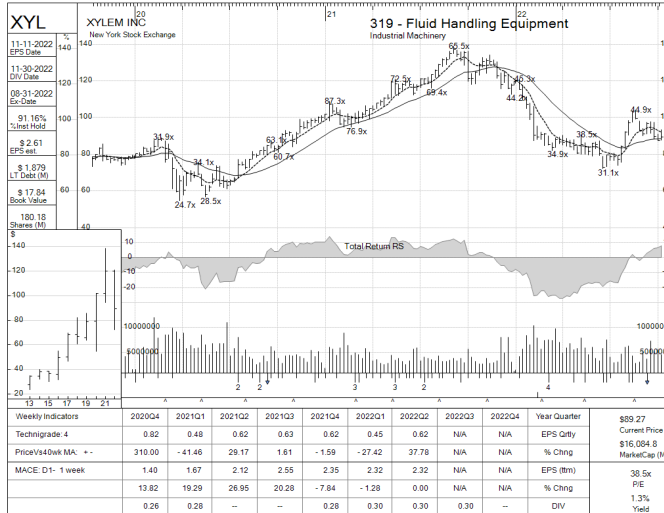
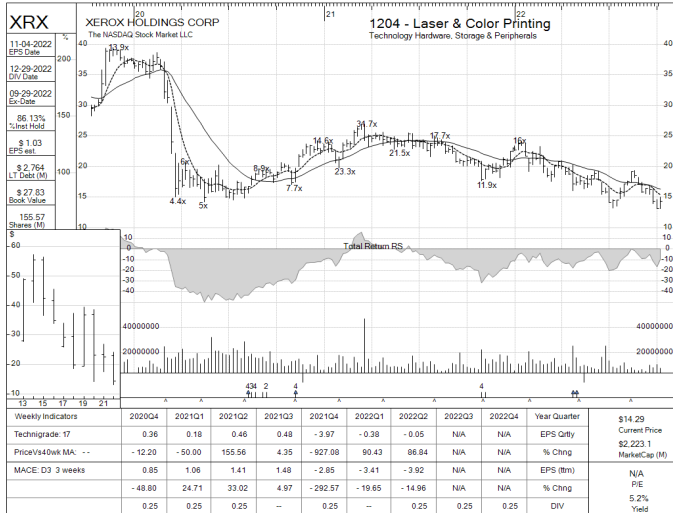








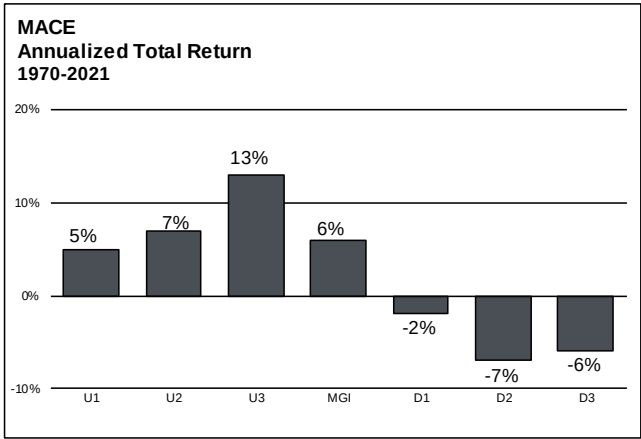
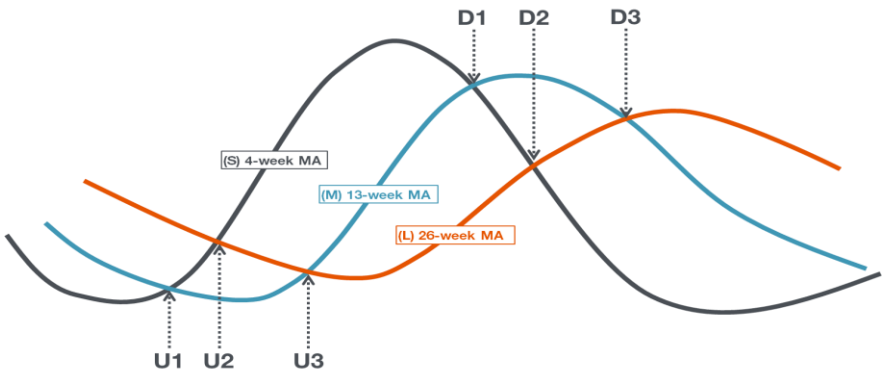




Indicator Definitions & Historical Performance

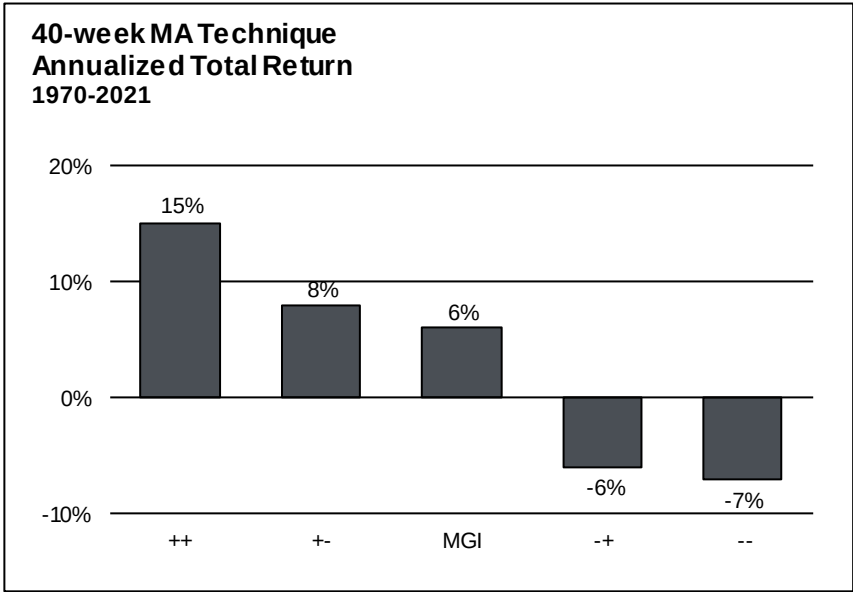
MACE (Moving Average Cycle Evaluation)

Entails looking at precise position of each Group's short (4-week, denoted by an "S"), intermediate (13-week, "M"), and longer term (26-week, "L") moving averages and related crossovers.



- U1** Possible uptrend (L > S > M)
 - U2*** Confirmed uptrend (S > L > M)
 - U3*** Well-defined uptrend (S > M > L)
 - D1** Possible downtrend (M > S > L)
 - D2** Confirmed downtrend (M > L > S)
 - D3** Well-defined downtrend (L > M > S)
- * Historically best performance

40-Week Technique



Definitions

Price Avg. Explanation

- | | | |
|---|---|--|
| + | + | Price is above a rising 40-week Moving Average* |
| + | - | Price is above a falling 40-week Moving Average* |
| - | + | Price is below a rising 40-week Moving Average |
| - | - | Price is below a falling 40-week Moving Average |

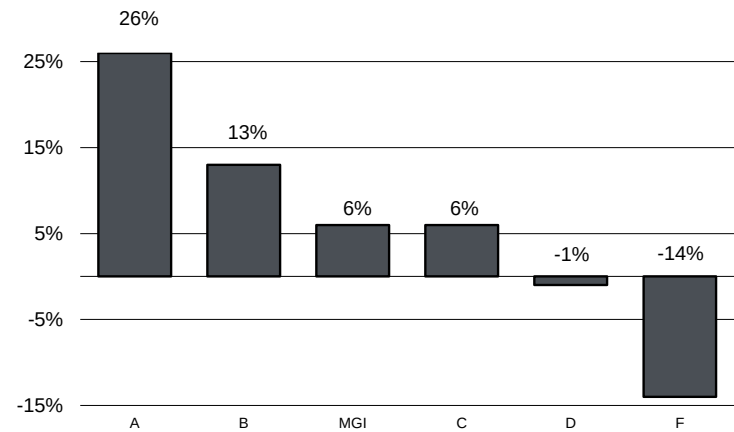
* Historically best performance

Indicator Definitions & Historical Performance

TECHNIGRADE

The "TechniGrade-" concept is simply a numerical way of looking at the relative (comparative) Performance of each Sector, *MicroGroup*, and issue over time. With this concept, the performance of each *MicroGroup* is compared to the performance of the *MicroGroup* universe of nearly 6,000 stocks, known as the "MicroGroup Index." This process is then repeated until a ratio has been calculated over the last six-month period that supplies a heavier weighting to the most recent weeks. Based on these computer calculations, a *TechniGrade*-rating from 1 (top 5% of performers) to 20 (bottom 5% of performers) is automatically assigned to each *MicroGroup* on an ongoing basis.

Technigrade
Annualized Total Return
1970-2021



KEY

TechniGrade

A ranking from 1 (best) to 20 (worst) based on relative performance. Historically Groups with a *TechniGrade* of 1 - 4 give the best performance, but the trend in *TechniGrade* is also important. Read from the right to the left to identify the *TechniGrade* trend.

MACE

- U1 Possible uptrend
- *U2 Confirmed uptrend
- *U3 Well-defined uptrend
- D1 Possible downtrend
- D2 Confirmed downtrend
- D3 Well-defined downtrend

* Historically best performance

40-Week Moving Average

- | P* | A* | Explanation |
|----|----|---|
| + | + | Price is above a rising 40-week Moving Average** |
| + | - | Price is above a falling 40-week Moving Average** |
| - | + | Price is below a rising 40-week Moving Average |
| - | - | Price is below a falling 40-week Moving Average |

* P= Price, A=Average

** Historically best performance

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