

UNRELEASED CAPITAL GAINS ON COMMON STOCKS AS REQUIRED SURPLUS
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"Unreleased Capital Gains" is that I'm talking about a situation where realized and un-realized capital gains are annually placed in a fund and a percent of that fund is released into income and/or surplus annually. We are using this type of system in our management basis "Modified GAAP" statement. I have also done some work comparing this method to the workings of the MSVR but have never written it up.

This memo will discuss the implications of the use of the fund of unreleased capital gains as Required Surplus.

Idealized Fund Value

In an idealized environment where:

- C = capital gains rate
- G = growth rate of common stock holdings
- R = release rate of capital gains

and they are all constants, the unreleased capital gains U_t will be

$$U_t = (C \times F_{t-1} + U_{t-1}) \times (1-R)$$

where F_t is the amount of common stock holdings at the end of year t. The ratio of unreleased capital gains to the common stock holdings will

reach a limit of $\lim_{t \rightarrow \infty} \frac{U_t}{F_t} = \frac{C \times (1-R)}{G+R}$

Here are some sample values:

<u>C</u>	<u>G</u>	<u>R</u>	<u>Ratio</u>
10%	10%	15%	34%
10%	10%	25%	21%
10%	5%	25%	25%
10%	5%	30%	20%
15%	0%	20%	60%
15%	0%	40%	23%
10%	0%	15%	57%

Setting the Ratio

If C is actually a random function with an expected mean \bar{C} and G is controlled by management to a planned mean over time of \bar{G} , then R can be set so that the ratio of unreleased capital gains will approach a pre-determined value, s.

If s is the desired Required Surplus ratio, the unreleased capital gains will tend to be a fund which varies around the desired Required Surplus value.

Suitability as Required Surplus

This fund will perform the function of required surplus by cushioning the company from fluctuations in capital gains. When there are excessive capital losses, the fund will be depleted and will build back up with future capital gains. They will be released over time in a stable manner.

Management Discretion

While this system will work over the long term, there is a very good probability that short periods of time will arise when the fund of unreleased capital gains will be too small to be an acceptable amount of required surplus or that the fund will grow too large, resulting in unacceptably long delays in releasing gains to policyholders. Management discretion should be exercised to change the rate of release of these funds to speed up the return to acceptable levels.

For example, if the desired required surplus level is 33%, management discretion could be used when the fund was below 20% or above 40%.

Pricing

Pricing should be based on the expected level of capital gains \bar{c} and the desired Required Surplus ratio s .

Start-up

For a new common stock portfolio, the unreleased capital gains will take many years to build up to the ultimate level. Over that time period, released capital gains will also be below the ultimate level which depresses yields. The following shows the build-up for a common stock portfolio with no growth, a level 10% capital gains and a 15% release rate:

<u>Year</u>	<u>Released CG as % of Actual</u>	<u>Unreleased CG as % of Portfolio</u>
1	15.0%	8.5%
2	27.8%	15.7%
3	38.6%	21.9%
4	47.8%	27.1%
5	55.6%	31.5%
10	80.3%	45.5%
15	91.3%	51.7%
20	96.1%	54.5%
25	98.3%	55.7%
30	99.2%	56.3%

Here, the ultimate ratio for the unreleased fund is 57%.

The build-up is slower in a growing portfolio and the rate problem is ever present. If the above portfolio were to grow at 10%, the released capital gains would stabilize at 66% of actual capital gains. This would mean that only 6.6% of the 10% capital gains would be released to be paid out as long as the fund is growing.

A solution would be to provide some start-up amount to the fund of unreleased capital gains. This would allow the fund to have sufficient dollars for required and would allow rates in the early years to be reasonable. The repayment of the start-up fund could be from excess fund amounts when they arise. Repayments would be made prior to any excess release.

Growth of the portfolio has the effect of ^{re-}starting the build-up ^{for} ~~over~~ the new amounts in the portfolio. Consideration should also be given to providing some start-up funding of portfolio growth.

Mod-GAAP Statement

The use of the unreleased Capital Gain fund as required surplus would imply that a liability not be created for these amounts so that the level of the fund would be directly reflected in surplus.

Illustrations

Attached are several illustrations of this procedure.

Comments on Illustrations

Illustration 1 - Zero portfolio growth
level 10% capital gains
15% release of capital gains
zero start-up balance

In 10 years, the capital gains released is only at 80% of actual.

Illustration 2 - 10% portfolio growth
level 10% capital gains
15% release of capital gains
zero start-up balance

The capital gains released levels out at 66% of actual.

Illustration 3 - 3% portfolio growth
level 10% capital gains
21.5% release of capital gains
zero start-up balance

Release rate set to obtain 33% balance of unreleased capital gains.

Illustration 4 - 3% portfolio growth
level 10% capital gains
21.5% release of capital gains
start-up balance of 25% on all portfolio increases

Illustrations 5-7 - 3% portfolio growth
random capital gains
21.5% release of capital gains
start-up balance of 25% on all portfolio increases

Illustration 5 -
High capital gains results in excess amounts of un-released gains. Entire start-up balance could be repaid and some funds disbursed under management discretion.

Illustration 6 -
Average capital gains of 10.4% result in a fund which averages 35.4% as desired. However, low capital gains in years 6-9 resulted in an unacceptably low fund balance in years 7-10 (and to very low returns).

Illustration 7 -

Lower average capital gains still maintain a fund which is adequate in all but years 14-18 due to 5 years of capital losses in years 13-17.

Illustration 8 -

Very low capital gains of 6.7% result in a fund which is below 20% in 10 of the 30 years illustrated. Here, the percent Capital Gains released is actually higher than the actual capital gains (6.9% vs. 6.7%). This is due to the start-up amounts being released. Management discretion would be needed to correct this situation. For example, the release rate could be changed to 14.8% which is the correct rate for a 6.7% capital gains.

ILLUSTRATION 1

YEAR	PORTFOLIO BUY #	7.5% DIVIDEND INCOME	10% CURRENT CAP GAINS	1% CURR CG	CURRENT TOTAL RETURN	15.0% RELEASED CAP GAINS	7% MODIFIED		UNRELEASED		START-UP BALANCE
							CG	TOTAL RETURN	CG	UNRELEASED CAP GAINS	
											\$
1	\$1,000,000	\$25,000	\$100,000	10.00%	13.50%	\$15,000	1.50%	5.00%	\$85,000	8.50%	\$0
2	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$27,750	2.78%	6.28%	\$157,250	15.73%	\$0
3	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$38,500	3.86%	7.36%	\$218,567	21.87%	\$0
4	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$47,799	4.78%	8.25%	\$270,565	27.06%	\$0
5	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$55,429	5.54%	9.06%	\$315,234	31.52%	\$0
6	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$62,285	6.23%	9.73%	\$352,949	35.29%	\$0
7	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$67,942	6.79%	10.29%	\$385,004	38.50%	\$0
8	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$72,751	7.28%	10.78%	\$412,255	41.23%	\$0
9	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$76,838	7.68%	11.18%	\$435,417	43.54%	\$0
10	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$80,313	8.03%	11.53%	\$455,105	45.51%	\$0
11	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$83,266	8.33%	11.83%	\$471,839	47.18%	\$0
12	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$85,776	8.58%	12.08%	\$485,667	48.56%	\$0
13	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$87,909	8.79%	12.29%	\$498,154	49.82%	\$0
14	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$89,723	8.97%	12.47%	\$508,431	50.84%	\$0
15	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$91,265	9.13%	12.63%	\$517,165	51.72%	\$0
16	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$92,575	9.26%	12.76%	\$524,591	52.46%	\$0
17	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$93,659	9.37%	12.87%	\$530,902	53.09%	\$0
18	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$94,635	9.46%	12.96%	\$536,267	53.63%	\$0
19	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$95,440	9.54%	13.04%	\$540,827	54.08%	\$0
20	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$96,124	9.61%	13.11%	\$544,703	54.47%	\$0
21	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$96,705	9.67%	13.17%	\$547,957	54.80%	\$0
22	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$97,200	9.72%	13.22%	\$550,798	55.08%	\$0
23	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$97,620	9.76%	13.26%	\$553,178	55.32%	\$0
24	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$97,977	9.80%	13.30%	\$555,201	55.52%	\$0
25	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$98,280	9.83%	13.33%	\$556,921	55.69%	\$0
26	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$98,538	9.85%	13.35%	\$558,383	55.84%	\$0
27	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$98,757	9.88%	13.38%	\$559,626	55.96%	\$0
28	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$98,944	9.89%	13.39%	\$560,682	56.07%	\$0
29	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$99,102	9.91%	13.41%	\$561,579	56.16%	\$0
30	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$99,237	9.92%	13.42%	\$562,343	56.23%	\$0
31	\$1,000,000										\$0
				AVERAGE	10.0%	13.50%	8.13%	11.63%		46.04%	
				# GROWTH RATE	CI						

ILLUSTRATION 2

YEAR	FUND #	DIVIDEND INCOME	10% CURRENT CAP GAINS	10% CURF CS	CURRENT TOTAL RETURN	15.0% RELEASED CAP GAINS	10% MODIFIED CS	UNRELEASED		UNRELEASED CAP GAINS as % of EDY VALUE	START-UP BALANCE
								RETURN	CAP GAINS		
									\$0		
1	\$1,000,000	\$30,000	\$100,000	10.00%	13.50%	\$10,000	1.50%	5.00%	\$85,000	7.73%	\$0
2	\$1,100,000	\$36,500	\$110,000	10.00%	13.50%	\$25,250	2.66%	6.16%	\$115,750	13.70%	\$0
3	\$1,210,000	\$42,350	\$121,000	10.00%	13.50%	\$42,913	3.55%	7.05%	\$124,738	19.31%	\$0
4	\$1,331,000	\$48,535	\$133,100	10.00%	13.50%	\$58,526	4.25%	7.75%	\$130,712	21.88%	\$0
5	\$1,464,100	\$51,244	\$146,410	10.00%	13.50%	\$70,008	4.78%	8.28%	\$139,714	24.63%	\$0
6	\$1,610,510	\$56,365	\$161,051	10.00%	13.50%	\$82,565	5.19%	8.69%	\$147,100	26.76%	\$0
7	\$1,771,561	\$62,005	\$177,156	10.00%	13.50%	\$97,689	5.51%	9.01%	\$153,568	28.41%	\$0
8	\$1,948,717	\$68,205	\$194,872	10.00%	13.50%	\$112,266	5.76%	9.26%	\$163,173	29.66%	\$0
9	\$2,143,589	\$75,026	\$214,359	10.00%	13.50%	\$127,580	5.95%	9.45%	\$172,952	30.66%	\$0
10	\$2,357,948	\$82,528	\$235,795	10.00%	13.50%	\$143,812	6.10%	9.60%	\$184,735	31.42%	\$0
11	\$2,593,742	\$90,781	\$259,781	10.00%	13.50%	\$161,146	6.21%	9.71%	\$193,163	32.01%	\$0
12	\$2,853,117	\$99,859	\$285,312	10.00%	13.50%	\$179,771	6.30%	9.80%	\$1,018,703	32.46%	\$0
13	\$3,138,428	\$109,845	\$313,843	10.00%	13.50%	\$195,882	6.37%	9.87%	\$1,132,664	32.81%	\$0
14	\$3,452,271	\$120,829	\$345,227	10.00%	13.50%	\$221,684	6.42%	9.92%	\$1,256,208	33.08%	\$0
15	\$3,797,498	\$132,912	\$379,750	10.00%	13.50%	\$245,394	6.46%	9.96%	\$1,390,564	33.29%	\$0
16	\$4,177,248	\$146,204	\$417,725	10.00%	13.50%	\$271,247	6.49%	9.99%	\$1,537,045	33.45%	\$0
17	\$4,594,973	\$160,824	\$459,497	10.00%	13.50%	\$299,481	6.52%	10.02%	\$1,697,061	33.58%	\$0
18	\$5,054,470	\$176,906	\$505,447	10.00%	13.50%	\$320,375	6.54%	10.04%	\$1,872,132	33.67%	\$0
19	\$5,559,917	\$194,597	\$555,992	10.00%	13.50%	\$364,219	6.55%	10.05%	\$2,063,905	33.75%	\$0
20	\$6,115,909	\$214,057	\$611,591	10.00%	13.50%	\$401,324	6.56%	10.06%	\$2,274,172	33.80%	\$0
21	\$6,727,500	\$235,462	\$672,756	10.00%	13.50%	\$442,038	6.57%	10.07%	\$2,504,883	33.85%	\$0
22	\$7,400,250	\$259,009	\$740,025	10.00%	13.50%	\$486,736	6.58%	10.08%	\$2,758,172	33.88%	\$0
23	\$8,140,275	\$284,910	\$814,027	10.00%	13.50%	\$535,830	6.58%	10.08%	\$3,036,370	33.91%	\$0
24	\$8,954,302	\$313,401	\$895,430	10.00%	13.50%	\$589,770	6.59%	10.09%	\$3,342,030	33.93%	\$0
25	\$9,849,733	\$344,741	\$984,973	10.00%	13.50%	\$649,050	6.59%	10.09%	\$3,677,953	33.95%	\$0
26	\$10,834,706	\$379,215	\$1,083,471	10.00%	13.50%	\$714,214	6.59%	10.09%	\$4,047,210	33.96%	\$0
27	\$11,918,177	\$417,126	\$1,191,816	10.00%	13.50%	\$785,854	6.59%	10.09%	\$4,453,173	33.97%	\$0
28	\$13,109,994	\$458,850	\$1,310,999	10.00%	13.50%	\$864,626	6.60%	10.10%	\$4,899,547	33.98%	\$0
29	\$14,420,994	\$504,735	\$1,442,099	10.00%	13.50%	\$951,247	6.60%	10.10%	\$5,390,399	33.98%	\$0
30	\$15,863,092	\$555,208	\$1,586,309	10.00%	13.50%	\$1,046,506	6.60%	10.10%	\$5,930,202	33.99%	\$0
31	\$17,449,402										
			AVERAGE	10.0%	13.50%		5.85%	9.35%		30.15%	
		# GROWTH RATE	10%								

ILLUSTRATION

3

YEAR	PORTFOLIO BUY #	3.5%		10%		CURRENT TOTAL RETURN	21.5%		7		UNRELEASED		START-UP BALANCE
		DIVIDEND INCOME	CURRENT CAP GAINS	CURR CS	CURRENT CAP GAINS		CS	MODIFIED TOTAL RETURN	UNRELEASED CAP GAINS	as % of EDV VALUE			
												\$0	
1	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$21,500	2.15%	5.65%	\$78,500	7.62%	\$0		
2	\$1,030,000	\$36,050	\$103,000	10.00%	13.50%	\$39,025	7.79%	7.29%	\$142,478	13.43%	\$0		
3	\$1,060,900	\$37,132	\$106,090	10.00%	13.50%	\$53,442	5.04%	8.54%	\$195,125	17.86%	\$0		
4	\$1,092,727	\$38,245	\$109,273	10.00%	13.50%	\$65,446	5.99%	9.49%	\$232,952	21.27%	\$0		
5	\$1,125,509	\$39,393	\$112,551	10.00%	13.50%	\$75,973	6.71%	10.21%	\$275,970	23.80%	\$0		
6	\$1,159,274	\$40,575	\$115,927	10.00%	13.50%	\$84,249	7.27%	10.77%	\$307,608	25.76%	\$0		
7	\$1,194,052	\$41,792	\$119,465	10.00%	13.50%	\$91,808	7.69%	11.19%	\$335,206	27.26%	\$0		
8	\$1,229,874	\$43,046	\$122,987	10.00%	13.50%	\$98,511	8.01%	11.51%	\$359,681	28.39%	\$0		
9	\$1,266,770	\$44,337	\$126,677	10.00%	13.50%	\$104,567	8.25%	11.75%	\$381,791	29.26%	\$0		
10	\$1,304,773	\$45,667	\$130,477	10.00%	13.50%	\$110,158	8.44%	11.94%	\$402,131	29.92%	\$0		
11	\$1,343,916	\$47,037	\$134,392	10.00%	13.50%	\$115,352	8.58%	12.08%	\$421,170	30.43%	\$0		
12	\$1,384,234	\$48,448	\$138,423	10.00%	13.50%	\$120,317	8.69%	12.19%	\$439,281	30.81%	\$0		
13	\$1,425,761	\$49,902	\$142,576	10.00%	13.50%	\$125,099	8.77%	12.27%	\$456,758	31.10%	\$0		
14	\$1,468,534	\$51,399	\$146,853	10.00%	13.50%	\$129,776	8.84%	12.34%	\$473,855	31.33%	\$0		
15	\$1,512,590	\$52,941	\$151,259	10.00%	13.50%	\$134,395	8.89%	12.39%	\$490,699	31.53%	\$0		
16	\$1,557,967	\$54,529	\$155,797	10.00%	13.50%	\$138,956	8.92%	12.42%	\$507,499	31.63%	\$0		
17	\$1,604,706	\$56,165	\$160,471	10.00%	13.50%	\$143,613	8.95%	12.45%	\$524,356	31.72%	\$0		
18	\$1,652,848	\$57,850	\$165,285	10.00%	13.50%	\$148,273	8.97%	12.47%	\$541,368	31.80%	\$0		
19	\$1,702,433	\$59,585	\$170,243	10.00%	13.50%	\$152,996	8.99%	12.49%	\$558,615	31.86%	\$0		
20	\$1,753,506	\$61,373	\$175,351	10.00%	13.50%	\$157,803	9.00%	12.50%	\$576,163	31.90%	\$0		
21	\$1,806,111	\$63,214	\$180,611	10.00%	13.50%	\$162,706	9.01%	12.51%	\$594,068	31.93%	\$0		
22	\$1,860,295	\$65,110	\$186,029	10.00%	13.50%	\$167,721	9.02%	12.52%	\$612,376	31.96%	\$0		
23	\$1,916,103	\$67,064	\$191,610	10.00%	13.50%	\$172,857	9.02%	12.52%	\$631,129	31.98%	\$0		
24	\$1,973,587	\$69,076	\$197,359	10.00%	13.50%	\$178,125	9.03%	12.53%	\$650,363	31.99%	\$0		
25	\$2,032,794	\$71,148	\$203,279	10.00%	13.50%	\$183,533	9.03%	12.53%	\$670,109	32.00%	\$0		
26	\$2,093,778	\$73,282	\$209,379	10.00%	13.50%	\$189,099	9.03%	12.53%	\$690,397	32.01%	\$0		
27	\$2,156,591	\$75,481	\$215,659	10.00%	13.50%	\$194,862	9.03%	12.53%	\$711,254	32.02%	\$0		
28	\$2,221,289	\$77,745	\$222,129	10.00%	13.50%	\$200,877	9.03%	12.53%	\$732,706	32.02%	\$0		
29	\$2,287,928	\$80,077	\$228,793	10.00%	13.50%	\$206,722	9.04%	12.54%	\$754,776	32.03%	\$0		
30	\$2,356,566	\$82,480	\$235,657	10.00%	13.50%	\$212,943	9.04%	12.54%	\$777,490	32.03%	\$0		
31	\$2,427,262												
			AVERAGE	10.0%	13.50%		9.07%	11.57%		28.62%			
			GROWTH RATE	3%									

ILLUSTRATION 4

YEAR	PORTFOLIO BCY #	J. 5% DIVIDEND INCOME	10%		CURRENT TOTAL RETURN	21.5% RELEASSED CAP GAINS	1% CG RELEASED	MODIFIED TOTAL RETURN	UNRELEASSED CAP GAINS	UNRELEASSED CAP GAINS as % of EQY VALUE	START-UP BALANCE BCY
			CURRENT CAP GAINS	CURR CG							
									\$250,600 ¹		
1	\$1,000,000	\$35,000	\$100,000	10.00%	13.50%	\$75,250	7.52%	11.02%	\$282,250	27.42%	\$250,000
2	\$1,030,000	\$35,050	\$103,600	10.00%	13.50%	\$82,829	8.04%	11.54%	\$310,146	29.23%	\$257,500
3	\$1,060,900	\$37,132	\$106,990	10.00%	13.50%	\$89,481	8.44%	11.94%	\$334,702	30.63%	\$265,225
4	\$1,092,727	\$38,245	\$109,273	10.00%	13.50%	\$95,455	8.74%	12.24%	\$356,716	31.69%	\$273,132
5	\$1,125,509	\$39,393	\$112,551	10.00%	13.50%	\$100,852	8.96%	12.46%	\$376,916	32.50%	\$281,377
6	\$1,159,274	\$40,575	\$115,927	10.00%	13.50%	\$105,540	9.14%	12.64%	\$395,498	33.12%	\$289,819
7	\$1,194,052	\$41,792	\$119,405	10.00%	13.50%	\$110,704	9.27%	12.77%	\$413,154	33.59%	\$298,513
8	\$1,229,874	\$43,046	\$122,987	10.00%	13.50%	\$115,270	9.37%	12.87%	\$430,095	33.95%	\$307,466
9	\$1,266,770	\$44,337	\$126,677	10.00%	13.50%	\$119,706	9.45%	12.95%	\$446,567	34.27%	\$316,693
10	\$1,304,773	\$45,667	\$130,477	10.00%	13.50%	\$124,365	9.51%	13.01%	\$462,766	34.43%	\$326,193
11	\$1,343,916	\$47,037	\$134,392	10.00%	13.50%	\$128,389	9.55%	13.05%	\$478,848	34.59%	\$335,979
12	\$1,384,234	\$48,448	\$138,423	10.00%	13.50%	\$132,713	9.59%	13.09%	\$494,940	34.71%	\$346,059
13	\$1,425,761	\$49,902	\$142,576	10.00%	13.50%	\$137,066	9.61%	13.11%	\$511,143	34.81%	\$356,440
14	\$1,468,534	\$51,399	\$146,853	10.00%	13.50%	\$141,467	9.63%	13.13%	\$527,541	34.88%	\$367,133
15	\$1,512,590	\$52,941	\$151,259	10.00%	13.50%	\$145,942	9.65%	13.15%	\$544,203	34.93%	\$378,147
16	\$1,557,967	\$54,529	\$155,797	10.00%	13.50%	\$150,500	9.66%	13.16%	\$561,184	34.97%	\$389,192
17	\$1,604,706	\$56,165	\$160,471	10.00%	13.50%	\$155,156	9.67%	13.17%	\$578,534	35.00%	\$401,177
18	\$1,652,848	\$57,850	\$165,285	10.00%	13.50%	\$159,921	9.68%	13.18%	\$596,294	35.03%	\$413,212
19	\$1,702,433	\$59,585	\$170,243	10.00%	13.50%	\$164,804	9.68%	13.18%	\$614,560	35.04%	\$425,608
20	\$1,753,506	\$61,373	\$175,351	10.00%	13.50%	\$169,818	9.68%	13.18%	\$633,184	35.06%	\$438,377
21	\$1,806,111	\$63,214	\$180,611	10.00%	13.50%	\$174,966	9.69%	13.19%	\$652,375	35.07%	\$451,528
22	\$1,860,295	\$65,110	\$186,029	10.00%	13.50%	\$180,257	9.69%	13.19%	\$672,100	35.08%	\$465,074
23	\$1,916,103	\$67,064	\$191,610	10.00%	13.50%	\$185,698	9.69%	13.19%	\$692,353	35.08%	\$479,026
24	\$1,973,587	\$69,076	\$197,359	10.00%	13.50%	\$191,295	9.69%	13.19%	\$713,249	35.09%	\$493,397
25	\$2,032,794	\$71,148	\$203,279	10.00%	13.50%	\$197,054	9.69%	13.19%	\$734,721	35.09%	\$508,199
26	\$2,093,778	\$73,282	\$209,378	10.00%	13.50%	\$202,981	9.69%	13.19%	\$756,821	35.09%	\$523,444
27	\$2,156,591	\$75,481	\$215,659	10.00%	13.50%	\$209,083	9.70%	13.20%	\$779,571	35.10%	\$539,148
28	\$2,221,289	\$77,745	\$222,129	10.00%	13.50%	\$215,366	9.70%	13.20%	\$802,994	35.10%	\$555,322
29	\$2,287,928	\$80,077	\$228,793	10.00%	13.50%	\$221,834	9.70%	13.20%	\$827,112	35.10%	\$571,982
30	\$2,356,566	\$82,480	\$235,657	10.00%	13.50%	\$228,495	9.70%	13.20%	\$851,948	35.10%	\$589,141
31	\$2,427,262										
			AVERAGE	10.01	13.50%		9.39%	12.89%		34.02%	
		# GROWTH RATE		3%							

ILLUSTRATION 5

YEAR	PORTFOLIO BOY #	3.5% DIVIDEND INCOME	RANDOM CURRENT CAP GAINS	1 CURR CS	CURRENT TOTAL RETURN	21.5% RELEASED CAP GAINS	7 CS RELEASED	MODIFIED TOTAL RETURN	UNRELEASED CAP GAINS	UNRELEASED	
										CPP GAINS as % of EDY VALUE	START-UP BALANCE BOY
1	\$1,000,000	\$35,000	\$91,126	9.11%	12.61%	\$73,342	7.33%	10.9%	\$275,284	26.7%	\$250,000
2	\$1,029,000	\$36,050	\$172,461	16.74%	29.24%	\$96,265	9.35%	12.8%	\$359,204	35.96%	\$257,500
3	\$1,060,900	\$37,122	\$24,922	2.35%	5.85%	\$82,587	7.78%	11.2%	\$309,496	28.32%	\$265,225
4	\$1,092,727	\$38,245	\$316,217	28.94%	32.44%	\$134,528	12.31%	15.81%	\$499,380	44.37%	\$273,162
5	\$1,125,599	\$39,393	(\$109,990)	-9.77%	-6.27%	\$83,719	7.44%	10.94%	\$314,112	27.10%	\$281,377
6	\$1,159,274	\$40,575	\$69,311	5.98%	9.48%	\$82,436	7.11%	10.61%	\$309,682	25.94%	\$289,819
7	\$1,194,052	\$41,792	\$329,652	26.85%	30.35%	\$125,522	11.35%	14.8%	\$500,767	43.56%	\$298,513
8	\$1,229,874	\$43,046	\$111,892	9.10%	12.66%	\$132,767	10.76%	14.2%	\$492,517	38.88%	\$307,468
9	\$1,266,770	\$44,337	\$156,532	12.36%	15.85%	\$139,545	11.02%	14.5%	\$519,004	39.78%	\$316,693
10	\$1,304,773	\$45,667	\$216,374	16.59%	20.08%	\$158,106	12.12%	15.62%	\$567,057	43.48%	\$326,195
11	\$1,343,916	\$47,037	\$360,332	26.81%	30.31%	\$203,689	15.16%	18.66%	\$753,750	54.4%	\$335,379
12	\$1,384,234	\$48,448	\$403,770	29.17%	32.67%	\$248,873	17.98%	21.48%	\$919,059	64.46%	\$346,058
13	\$1,425,761	\$49,902	\$362,327	21.20%	24.76%	\$262,598	18.42%	21.9%	\$969,481	66.02%	\$356,440
14	\$1,468,534	\$51,399	\$51,907	3.53%	7.03%	\$219,599	14.95%	18.4%	\$812,804	53.74%	\$367,133
15	\$1,512,590	\$52,941	(\$86,226)	-5.70%	-2.20%	\$156,214	10.33%	13.83%	\$581,708	37.34%	\$378,147
16	\$1,557,967	\$54,529	\$239,177	15.35%	18.85%	\$176,490	11.33%	14.8%	\$656,079	40.88%	\$389,492
17	\$1,604,706	\$56,165	\$365,665	22.79%	26.29%	\$219,675	13.69%	17.1%	\$814,104	49.25%	\$401,177
18	\$1,652,848	\$57,850	\$73,657	4.46%	7.96%	\$190,869	11.55%	15.05%	\$769,289	41.66%	\$413,212
19	\$1,702,433	\$59,585	\$365,563	21.47%	24.97%	\$231,093	13.57%	17.07%	\$856,527	48.85%	\$425,608
20	\$1,753,506	\$61,373	\$184,697	10.53%	14.0%	\$227,863	12.77%	16.27%	\$830,512	45.98%	\$438,377
21	\$1,806,111	\$63,214	\$237,247	13.14%	16.64%	\$229,568	12.71%	16.21%	\$851,737	45.79%	\$451,528
22	\$1,860,295	\$65,110	\$385,434	20.72%	24.22%	\$265,992	14.30%	17.80%	\$985,131	51.41%	\$465,074
23	\$1,916,103	\$67,064	\$123,905	6.47%	9.97%	\$238,443	12.44%	15.94%	\$884,964	44.84%	\$479,026
24	\$1,973,587	\$69,076	\$260,923	13.22%	16.72%	\$246,366	12.48%	15.98%	\$914,323	44.98%	\$493,397
25	\$2,032,794	\$71,148	(\$46,145)	-2.27%	1.2%	\$186,658	9.18%	12.6%	\$696,766	33.28%	\$508,100
26	\$2,093,778	\$73,282	\$542,793	25.92%	29.42%	\$266,505	12.73%	16.23%	\$988,757	45.8%	\$523,444
27	\$2,156,591	\$75,481	\$645,909	29.95%	33.45%	\$351,453	16.20%	19.80%	\$1,295,388	58.50%	\$539,148
28	\$2,221,289	\$77,745	\$411,994	18.55%	22.05%	\$367,947	16.56%	20.06%	\$1,360,094	59.45%	\$555,322
29	\$2,287,928	\$80,077	\$572,633	25.03%	28.53%	\$415,536	18.16%	21.66%	\$1,534,350	65.11%	\$571,982
30	\$2,356,566	\$82,480	\$557,233	23.65%	27.15%	\$449,690	19.08%	22.5%	\$1,659,567	68.37%	\$589,141
31	\$2,427,262		AVERAGE	14.7%	18.24%		12.68%	16.1%		45.6%	

• GROWTH RATE 3%

ILLUSTRATION 6

YEAR	PORTFOLIO BOY #	3.5% DIVIDEND INCOME	RANDOM		CURRENT TOTAL RETURN	21.5% RELEASED CAP GAINS	1 CUR CG	1 MODIFIED CG	TOTAL UNRELEASED RETURN	UNRELEASED		START-UP BALANCE BOY
			CURRENT CAP GAINS	CUR CG						CAP GAINS	as % of EDY VALUE	
1	\$1,000,000	\$35,000	\$42,018	4.20%	7.70%	\$62,784	6.28%	9.78%	\$236,734	22.98%	\$250,000	\$250,000
2	\$1,030,000	\$36,050	\$123,722	13.47%	16.97%	\$80,720	7.84%	11.34%	\$302,459	26.51%	\$257,500	\$257,500
3	\$1,060,900	\$37,132	(\$101,242)	-9.54%	-6.04%	\$47,262	4.08%	7.58%	\$165,912	15.18%	\$265,225	\$265,225
4	\$1,092,727	\$38,245	\$198,999	18.20%	21.79%	\$78,422	7.18%	10.65%	\$294,514	26.17%	\$273,182	\$273,182
5	\$1,125,569	\$39,393	\$165,778	14.77%	18.22%	\$98,974	8.79%	12.29%	\$369,810	31.90%	\$281,377	\$281,377
6	\$1,159,274	\$40,575	(\$62,530)	-5.39%	-1.89%	\$66,065	5.70%	9.20%	\$249,909	20.92%	\$289,819	\$289,819
7	\$1,194,052	\$41,792	(\$24,947)	-2.92%	0.58%	\$46,238	3.87%	7.37%	\$177,779	14.46%	\$298,513	\$298,513
8	\$1,229,874	\$43,046	(\$34,959)	-2.84%	0.66%	\$20,704	2.50%	6.00%	\$121,330	9.58%	\$307,462	\$307,462
9	\$1,266,770	\$44,337	(\$6,523)	-0.51%	2.99%	\$24,683	1.95%	5.42%	\$99,624	7.64%	\$316,693	\$316,693
10	\$1,304,773	\$45,667	\$112,170	3.63%	12.10%	\$45,536	3.49%	6.99%	\$176,044	13.16%	\$326,193	\$326,193
11	\$1,343,916	\$47,037	\$300,650	22.37%	25.87%	\$102,489	7.63%	11.13%	\$384,264	27.76%	\$335,979	\$335,979
12	\$1,384,234	\$48,448	\$331,543	23.95%	27.45%	\$153,903	11.12%	14.62%	\$572,306	40.14%	\$346,058	\$346,058
13	\$1,425,761	\$49,902	(\$64,040)	-4.49%	-0.99%	\$109,277	7.66%	11.16%	\$409,682	27.90%	\$356,440	\$356,440
14	\$1,468,534	\$51,399	\$213,870	14.56%	18.06%	\$134,064	9.13%	12.63%	\$500,592	33.09%	\$367,133	\$367,133
15	\$1,512,590	\$52,941	\$404,302	26.77%	30.23%	\$194,533	12.86%	16.36%	\$721,616	46.32%	\$378,147	\$378,147
16	\$1,557,967	\$54,529	\$437,686	28.09%	31.59%	\$249,250	16.00%	19.50%	\$921,736	57.44%	\$389,492	\$389,492
17	\$1,604,706	\$56,165	\$233,956	14.58%	18.08%	\$248,474	15.48%	18.98%	\$919,254	55.62%	\$401,177	\$401,177
18	\$1,652,848	\$57,850	\$30,645	1.85%	5.35%	\$204,228	12.36%	15.86%	\$758,067	44.53%	\$413,212	\$413,212
19	\$1,702,433	\$59,585	\$32,940	1.92%	5.43%	\$170,066	9.99%	13.49%	\$633,709	36.14%	\$425,608	\$425,608
20	\$1,753,506	\$61,373	\$359,408	20.50%	24.00%	\$213,520	12.18%	15.68%	\$792,748	43.89%	\$438,377	\$438,377
21	\$1,806,111	\$63,214	\$172,399	9.55%	13.05%	\$207,506	11.49%	14.99%	\$771,186	41.46%	\$451,528	\$451,528
22	\$1,860,295	\$65,110	\$137,176	7.37%	10.87%	\$195,299	10.50%	14.00%	\$727,016	37.94%	\$465,074	\$465,074
23	\$1,916,103	\$67,064	\$456,359	23.82%	27.32%	\$254,426	13.28%	16.78%	\$943,320	47.80%	\$479,026	\$479,026
24	\$1,973,587	\$69,076	\$284,696	14.43%	17.93%	\$264,024	13.38%	16.88%	\$978,795	48.15%	\$493,397	\$493,397
25	\$2,032,794	\$71,149	\$496,719	24.44%	27.94%	\$317,236	15.61%	19.11%	\$1,177,525	56.05%	\$508,199	\$508,199
26	\$2,093,778	\$73,282	\$12,810	0.61%	4.11%	\$255,062	12.18%	15.68%	\$946,976	43.91%	\$523,444	\$523,444
27	\$2,156,591	\$75,461	\$585,587	27.15%	30.65%	\$329,501	15.28%	16.78%	\$1,219,236	54.89%	\$539,148	\$539,148
28	\$2,221,289	\$77,745	(\$81,687)	-3.68%	-0.18%	\$244,573	11.01%	14.51%	\$909,635	39.76%	\$555,322	\$555,322
29	\$2,287,928	\$80,077	\$634,648	27.74%	31.24%	\$322,021	14.51%	18.01%	\$1,229,422	52.17%	\$571,982	\$571,982
30	\$2,356,566	\$82,480	(\$159,357)	-6.76%	-3.26%	\$230,064	9.76%	13.25%	\$857,676	35.34%	\$589,141	\$589,141
31	\$2,427,262		AVERAGE	10.42	13.92%		9.77%	13.27%		35.36%		

* GROWTH RATE 3%

ILLUSTRATION 7

YEAR	PORTFOLIO BOY #	2.5% DIVIDEND INCOME	RANDOM CURRENT CAP GAINS	7 CURR CG	CURRENT TOTAL RETURN	21.5% RELEASED CAP GAINS	7 CG	MODIFIED TOTAL RETURN	UNRELEASED CAP GAINS	UNRELEASED CAP GAINS as % of EQY VALUE	START-UP BALANCE BOY
1	\$1,000,000	\$35,000	\$37,437	3.74%	7.24%	\$41,799	6.18%	9.66%	\$233,135	22.63%	\$250,000
2	\$1,000,000	\$36,050	\$55,040	6.31%	9.81%	\$64,102	6.22%	9.72%	\$241,772	22.79%	\$257,500
3	\$1,000,900	\$37,132	\$265,608	25.04%	28.54%	\$199,027	10.28%	13.78%	\$401,249	37.18%	\$265,225
4	\$1,092,727	\$38,245	\$28,521	2.61%	6.11%	\$93,476	8.55%	12.05%	\$349,490	31.05%	\$273,182
5	\$1,125,509	\$39,393	\$179,217	15.92%	15.42%	\$113,671	10.10%	13.60%	\$423,473	36.53%	\$281,377
6	\$1,159,274	\$40,575	\$11,790	1.02%	4.52%	\$93,582	6.07%	11.57%	\$350,377	29.34%	\$289,819
7	\$1,194,052	\$41,792	(\$16,149)	-1.35%	2.15%	\$71,859	6.02%	9.52%	\$271,324	22.66%	\$298,513
8	\$1,229,874	\$43,046	\$126,983	10.25%	13.75%	\$85,443	6.95%	10.45%	\$321,189	25.35%	\$307,468
9	\$1,266,770	\$44,337	\$113,318	8.95%	12.45%	\$93,419	7.37%	10.67%	\$350,588	26.87%	\$314,693
10	\$1,304,773	\$45,667	\$357,788	27.42%	30.92%	\$152,301	11.67%	15.17%	\$565,861	42.11%	\$321,189
11	\$1,343,916	\$47,037	\$131,395	9.78%	17.29%	\$149,910	11.15%	14.65%	\$557,426	40.27%	\$335,979
12	\$1,384,234	\$48,449	\$312,045	22.54%	26.04%	\$124,936	13.50%	17.00%	\$692,916	49.60%	\$346,059
13	\$1,425,761	\$49,902	(\$138,265)	-9.70%	-6.20%	\$119,249	8.36%	11.86%	\$446,092	30.38%	\$356,440
14	\$1,468,534	\$51,399	(\$98,330)	-6.70%	-3.20%	\$74,789	5.09%	8.59%	\$284,007	18.78%	\$367,133
15	\$1,512,590	\$52,941	(\$122,451)	-8.10%	-4.40%	\$34,725	2.30%	5.80%	\$138,156	8.87%	\$378,147
16	\$1,557,967	\$54,529	(\$118,237)	-7.59%	-4.09%	\$4,285	0.28%	3.78%	\$27,329	1.70%	\$389,492
17	\$1,604,706	\$56,165	(\$90,352)	-5.63%	-2.13%	(\$13,552)	-0.84%	2.66%	(\$37,446)	-2.27%	\$401,177
18	\$1,652,948	\$57,850	\$248,650	15.04%	18.54%	\$45,409	2.75%	6.25%	\$178,192	10.47%	\$413,212
19	\$1,702,433	\$59,582	\$426,243	25.04%	28.54%	\$129,954	7.63%	11.13%	\$487,250	27.79%	\$425,608
20	\$1,753,506	\$61,373	\$374,414	21.35%	24.85%	\$185,258	10.56%	14.06%	\$689,557	38.18%	\$438,377
21	\$1,806,111	\$63,214	\$441,326	24.44%	27.94%	\$243,140	13.46%	16.96%	\$901,299	48.45%	\$451,528
22	\$1,860,295	\$65,110	(\$168,071)	-9.03%	-5.53%	\$157,642	8.47%	11.97%	\$589,528	30.77%	\$465,074
23	\$1,916,103	\$67,064	(\$77,387)	-4.04%	-0.54%	\$110,110	5.75%	9.25%	\$416,402	21.10%	\$479,026
24	\$1,973,587	\$69,076	\$311,195	15.77%	19.27%	\$156,433	7.93%	11.43%	\$585,965	28.83%	\$493,397
25	\$2,032,794	\$71,148	\$147,823	7.27%	10.77%	\$157,764	7.76%	11.26%	\$591,270	28.24%	\$508,199
26	\$2,093,778	\$73,281	\$547,169	26.13%	29.63%	\$244,764	11.69%	15.19%	\$909,378	42.17%	\$523,444
27	\$2,156,591	\$75,481	\$419,868	19.47%	22.97%	\$225,788	13.25%	16.75%	\$1,059,633	47.70%	\$539,148
28	\$2,221,289	\$77,745	\$598,223	26.93%	30.43%	\$356,439	16.05%	19.55%	\$1,318,076	57.61%	\$555,322
29	\$2,287,928	\$80,077	(\$8,836)	-0.39%	3.11%	\$281,487	12.30%	15.80%	\$1,044,913	44.34%	\$571,982
30	\$2,356,566	\$82,480	\$128,742	5.46%	8.96%	\$252,336	10.71%	14.21%	\$928,994	38.69%	\$589,141
31	\$2,427,262										
			AVERAGE	8.9%	12.43%		8.32%	11.82%		30.22%	

GROWTH RATE 3%

ILLUSTRATION 8

YEAR	PORTFOLIO BOY #	2.5% DIVIDEND INCOME	SANDY CURRENT CAP GAINS	1 CURR CB	CURRENT TOTAL RETURN	21.5% RELEASED CAP GAINS	1 CB RELEASED	MODIFIER TOTAL UNRELEASED CAP GAINS	UNRELEASED CAP GAINS as % of EBY VALUE		STAFF-UP BALANCE BOY
									\$250,000	\$250,000	
1	\$1,000,000	\$35,000	\$40,313	4.03%	7.53%	\$62,417	6.24%	9.74%	\$235,396	22.85%	\$250,000
2	\$1,070,000	\$36,050	\$300,647	29.15%	32.69%	\$115,249	11.19%	14.69%	\$428,519	40.39%	\$257,500
3	\$1,060,900	\$37,132	\$11,309	1.07%	4.57%	\$94,563	8.91%	12.41%	\$353,221	32.32%	\$265,225
4	\$1,092,727	\$38,245	(\$44,951)	-4.11%	-0.61%	\$66,278	6.07%	9.57%	\$250,187	22.23%	\$273,132
5	\$1,125,509	\$39,393	\$56,387	5.01%	8.51%	\$65,913	5.86%	9.36%	\$249,102	21.49%	\$281,377
6	\$1,159,274	\$40,575	\$77,013	6.64%	10.14%	\$70,115	6.05%	9.55%	\$264,695	22.17%	\$289,819
7	\$1,194,052	\$41,792	\$81,871	6.86%	10.36%	\$74,512	6.24%	9.74%	\$281,010	22.85%	\$298,513
8	\$1,229,874	\$43,045	\$252,694	20.87%	24.37%	\$115,606	9.40%	12.90%	\$421,321	34.05%	\$307,468
9	\$1,266,770	\$44,337	\$340,230	26.86%	30.36%	\$165,884	12.10%	16.60%	\$615,169	47.15%	\$316,693
10	\$1,304,773	\$45,667	\$259,718	19.91%	23.41%	\$188,101	14.42%	17.92%	\$696,572	51.83%	\$326,193
11	\$1,343,916	\$47,037	\$35,532	2.64%	6.14%	\$157,402	11.71%	15.21%	\$584,781	42.25%	\$335,979
12	\$1,384,234	\$48,448	(\$19,590)	-1.42%	2.09%	\$121,516	8.78%	12.28%	\$454,057	31.85%	\$346,058
13	\$1,425,761	\$49,902	\$282,608	19.82%	23.32%	\$158,363	11.11%	14.61%	\$583,975	40.11%	\$356,440
14	\$1,468,534	\$51,399	\$41,431	2.82%	6.32%	\$135,537	9.22%	12.73%	\$505,882	33.44%	\$367,133
15	\$1,512,590	\$52,941	(\$136,576)	-9.03%	-5.53%	\$79,401	5.25%	8.75%	\$301,250	19.34%	\$378,147
16	\$1,557,967	\$54,529	(\$82,006)	-5.26%	-1.76%	\$47,137	3.03%	6.53%	\$183,791	11.45%	\$389,492
17	\$1,604,706	\$56,165	\$99,032	6.17%	9.67%	\$60,807	3.79%	7.29%	\$234,052	14.16%	\$401,177
18	\$1,652,848	\$57,850	(\$134,559)	-8.14%	-4.64%	\$21,391	1.29%	4.79%	\$90,498	5.32%	\$413,212
19	\$1,702,433	\$59,585	\$278,684	16.37%	19.87%	\$79,374	4.66%	8.16%	\$302,576	17.26%	\$425,608
20	\$1,753,506	\$61,373	\$112,687	6.43%	9.93%	\$89,282	5.09%	8.59%	\$339,133	18.78%	\$438,377
21	\$1,806,111	\$63,214	(\$135,701)	-7.51%	-4.01%	\$43,738	2.42%	5.92%	\$173,240	9.31%	\$451,528
22	\$1,860,295	\$65,110	\$327,403	17.60%	21.10%	\$107,638	5.79%	9.29%	\$406,957	21.24%	\$465,074
23	\$1,916,103	\$67,064	\$265,270	10.71%	14.21%	\$131,629	6.87%	10.37%	\$494,969	25.08%	\$479,026
24	\$1,973,587	\$69,076	\$312,689	15.84%	19.34%	\$173,647	8.80%	12.30%	\$648,814	31.92%	\$493,397
25	\$2,032,794	\$71,148	\$211,654	10.41%	13.91%	\$185,007	9.10%	12.60%	\$690,738	32.99%	\$508,199
26	\$2,093,778	\$73,282	(\$55,238)	-2.64%	0.86%	\$136,632	6.53%	10.03%	\$514,571	23.86%	\$523,444
27	\$2,156,591	\$75,481	(\$43,692)	-2.03%	1.47%	\$101,239	4.69%	8.19%	\$385,814	17.37%	\$539,148
28	\$2,221,289	\$77,745	\$217,350	9.78%	13.28%	\$129,680	5.84%	9.34%	\$490,144	21.42%	\$555,322
29	\$2,287,928	\$80,077	(\$222,463)	-9.72%	-6.22%	\$57,551	2.52%	6.02%	\$227,289	9.64%	\$571,982
30	\$2,356,566	\$82,480	\$255,332	10.83%	14.33%	\$103,763	4.40%	7.90%	\$396,531	16.34%	\$589,141
31	\$2,427,262		AVERAGE	6.7%	10.17%		6.95%	10.45%		25.35%	

* GROWTH RATE 3%