

Pension Funding Reality Check: Why the Current Rules Obscure the True Funded Status

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Abstract

Several companies in the airline industry are considering the termination of their defined benefit plans, which could result in billions of unfunded liabilities being dumped upon the Pension Benefit Guaranty Corporation (PBGC). Faced with these impending liabilities, Bradley Belt, the PBGC's executive director, has called for comprehensive pension reform to strengthen the funding of the defined benefit system.

An analysis of the recent actuarial filings of one of the troubled airlines shows that the dire financial health of its plans was obscured by misleading data that indicated that the plans were not severely underfunded and that no contributions were required. Although the filings were technically in compliance, they showed how ineffective this information is for disclosing the true funding status. If a better measure of funding status had been required, additional contributions would have been made, and the financial distress facing the company, its participants, and the PBGC would not have been so severe.

This paper presents this analysis and proposes guiding principles for a simpler, more effective funding system that would better serve plan sponsors, their participants, the regulating agencies, and the general public. The objective of the new system would be to have plan assets funded at termination liability over a reasonable period of time.

The United Airlines Story

United Airlines sponsors four defined benefit plans, which are funded through its group investment trust. Each group of employees (pilots, flight attendants, ground employees, and management/administrative employees) are covered under a separate plan.

Actuarial information is disclosed on Form 5500 Schedule B. For the purposes of this analysis, I examined the Schedule B data from 2000 through 2003. As of the date of this paper, the Schedule B information for 2004 was not yet publicly available. In this paper I will aggregate the results for all four plans. Please refer to Appendix A for the data on each plan.

United uses an averaging method to calculate the actuarial value of assets. The valuation liability interest rate for all plans in each of these years was 9.25 percent, and the actuarial value of assets exceeded the accrued liability calculated using 9.25 percent in each year prior to 2003. The aggregate ratio of actuarial value to accrued liability was 126 percent in 2000, 122 percent in 2001, and 116 percent in 2002. In 2003 this ratio dropped to 87 percent. Each plan had a significant credit balance prior to January 1, 2003.

On a current liability basis, the plans also appeared well funded. For 2000 and 2001, the current liability interest rate could be between 90 and 105 percent of the four-year weighted average of 30-year U.S. Treasury rates. For 2002 and 2003, the upper limit was raised from 105 percent of the average interest rate to 120 percent. United used the highest current liability interest rate allowed by law, which was 6.31 percent in 2000, 6.21 percent in 2001, 6.85 percent in 2002, and 6.65 percent in 2003. The ratio of the actuarial value of assets to current liability was 98 percent in 2000, 95 percent in 2001, and 99 percent in 2002.

Prior to 2003, the current liability ratios were all above 90 percent, and no deficit reduction contributions were required. United was not required to make any contributions during these plan years and did not do so. In fact, the Schedule B data led one to believe that these plans were in great shape.

The funding shortfall began to be evident with the 2003 Schedule B data. Two of the plans were amended, resulting in increased unfunded liability. The aggregate current liability ratio dropped to 72 percent, and three of the plans had additional funding charges. The company contributed \$133 million to these three plans, but two of the plans still had funding deficiencies at the end of the year.

If we fast forward to 2005, we find that the company has failed to make over \$800 million in required contributions. On a termination basis, according to the PBGC, the plan is now only 42 percent funded with a shortfall of \$9.8 billion, of which only \$6.6 billion is guaranteed. Since the difference is not guaranteed, United participants stand to lose \$3.2 billion in pension benefit value. An agreement now has been reached between the PBGC and United in bankruptcy court under which the PBGC will terminate the plans and become trustee. Faced with possible benefit cuts, United workers are threatening to strike.

Obviously, something has gone terribly wrong.

What Went Wrong

Prior to 2003, United was in compliance with all funding regulations. The data disclosed in the Schedule B followed standard actuarial practices, and the assumptions were typical of those of other large companies.

Companies often use a smoothing method for valuing assets to control the volatility of asset returns. The January 2000 valuation followed a period of strong investment gains, and these gains were not fully recognized in the actuarial value. Accordingly, the actuarial value (\$7.83 billion) was less than the market value of assets (\$8.83 billion).

The asset return for 2000 was approximately 0 percent. As of January 2001, the actuarial value increased to \$8.36 billion, but the market value dropped to \$8.45 billion. In 2001 the trust lost approximately 5 percent. As of January 2002, the losses from 2000 and 2001 were not fully recognized, so the actuarial value (\$8.68 billion) exceeded the market value (\$7.52 billion). The 2002 return was approximately -9 percent. As of January 2003, the actuarial value dropped to \$7.50 billion, and the market value was \$6.25 billion.

The valuation interest rate, which was 9.25 percent, represents the expected long-term rate of return on plan assets. This assumes that the plan will be in operation for many years to come. Current liability is calculated using an interest rate range around the average 30-year Treasury rate and is intended to approximate the current funded status. It also serves as a warning signal when plans become underfunded and deficit reduction contributions are required if the ratio falls below 90 percent. Because United's funded status deteriorated so quickly, I want to focus on the current liability funded ratio.

The use of the four-year average and the spread (5 percent in 2000 and 2001, 20 percent in 2002 in 2003) are both artificial mechanisms. By definition, “current” should not have anything to do with interest rates in effect four years ago. Similar to the averaging method for asset valuation, the spread is intended to smooth volatility. A truer measure would use no averaging, in neither asset valuation nor interest rates, and no spread. For purposes of this paper, we will define “market liability” as the present value of accrued benefits using the 30-year U.S. Treasury rate as of the valuation date with no averaging or spread.

I did not have access to the liability calculated using the actual 30-year Treasury rate. However, the 2002 Schedule B included current liability measured on both an RPA '94 basis using 6.85 percent and an OBRA '87 basis using 6.28 percent. By dividing the change in liability value relative to the interest rate change, we can calculate the duration for each plan. The values for the market liability were derived by multiplying current liability by one plus the duration times the difference between the current liability interest rate and the actual 30-year Treasury rate.¹

The following table shows the aggregate current liability compared to the market liability, actuarial value of assets compared to market value, and the different funded ratios.

Year	Current Liability (billions)	Market Liability (billions)	Actuarial Value of Assets (billions)	Market Value of Assets (billions)	Actuarial Value Divided by Current Liabilities	Market Value Divided by Market Liabilities
2000	\$7.972	\$7.688	\$7.834	\$8.832	98.3%	114.9%
2001	8.797	9.453	8.360	8.449	95.0	89.4
2002	8.733	10.092	8.677	7.522	99.4	74.5t
2003	10.371	12.522	7.498	6.249	72.3	49.9t

We see that the market-based funded ratio plummeted, while the current liability ratio stayed in the mid- to high 90's up until 2003. The current liability funding ratio failed as a solvency measure.

¹ For example, the 30-year rate as of January 2002 was 5.45 percent. The pilot plan duration (9.90) was calculated by dividing the percentage increase in the OBRA '87 current liability over the RPA '94 current liability (5.64 percent) divided by the change in interest rate (0.57 percent). The market liability (\$4.31 billion) was estimated by increasing the RPA '94 liability (\$3.78 billion) by a factor of 13.86 percent ($9.90 \times (6.85 \text{ percent} - 5.45 \text{ percent})$).

The 2004 Schedule B is not yet publicly available. However, the fund earned approximately 23 percent in 2003, and the aggregate market value of assets as of December 31, 2003, was \$7.062 billion. The 30-year interest rate as of January 2004 was 4.98 percent. The estimated market liability as of January 1, 2004 (projected using 2003 benefit accrual, benefit payments, and the duration adjustment) equals \$12.933 billion. On this basis, the market funded ratio would be 54.6 percent. This is a slight improvement over 2003 due to the investment gains.

Since January 2004 there have been additional benefit accruals, lower interest rates, and no contributions, thus further eroding the funded status. It is understandable how the funded ratio could approach 42 percent as reported by the PBGC.

United was following current funding law, but the funding rules did not require a contribution until 2003, so the plans' unfunded liability continued to grow. In fact, the current liability interest rate spread was increased to 120 percent in January 2002 to allow employers to avoid deficit reduction contributions.

The current funding rules are designed to allow maximum flexibility and remove volatility. The deficit reduction contribution is intended to bring a plan back to an adequate funded level quickly, but this is not effective if the basic measures are artificial to begin with. The Schedule B disclosure is at best ineffective and at worst misleading.

Before we discuss possible remedies, it is helpful to revisit basic funding concepts.

What Do We Mean by "Solvency"?

To some, solvency may mean that the plan is on track to meet its obligations, assuming that the plan and the company continue in operation, assets earn an expected high rate of return, and the plan sponsor can meet future funding requirements. Depending on the funding method, asset valuation method, and assumptions used, there are many different measures of funded status, each of which may satisfy the general definition of being "on track." In this case, the liability is not a termination or settlement liability. "Funding target" may be a better definition.

I would argue that true solvency should mean that the plan can meet its obligations, even in a worst-case scenario. For most plans, this would be the termination liability. The termination liability is typically much higher than current liability because annuity prices, lump sums, and early retirement subsidies would become due upon

plan termination. Likewise, only market value of assets has any meaning at plan termination.

A plan that is 100 percent funded on an ongoing basis may be significantly underfunded on a plan termination basis. This has been especially true in recent years as interest rates have dropped. The spread between valuation interest rates and 30-year U.S. Treasury rates has grown from under 1 percent in the early 1990s to over 3 percent today. If only the ongoing plan funded status is disclosed to plan participants and shareholders, this hides a potentially large deficit if the plan terminates.

The True Cost of a Pension Plan

If you examine the entire life cycle of a pension plan, there are two basic income categories, contributions and investment returns, and two disbursement categories, benefit payments and expenses. The benefit payments and expenses are determined from the plan provisions and demographic experience. Assuming that the disbursements are independent of the income, the income side of the sheet becomes a financing decision. A plan sponsor could “front load” contributions, (i.e., make greater contributions in earlier years), in which case more of the income would be generated from investments. In the opposite case, a plan sponsor could delay contributions as long as legally possible, and since asset levels would be lower, less income would be generated from investments. In the latter case, the employer actually would pay more since there is less investment income. Different funding methods produce different contribution patterns. In this way, the issue is not which method produced higher or lower contributions. It is a timing decision: pay it now or pay it later.

A plan sponsor, concerned about high pension costs and the inability of recouping excess funded amounts, might opt for minimum contributions. In this case the plan might be underfunded at plan termination, and if the company is unable to fund the deficit, the PBGC and plan participants are at risk. Funding rules should encourage higher funding levels to increase benefit security for participants and the PBGC, but allow companies to use surplus assets for other purposes.

The issues of plan solvency and contribution financing are addressed in the following principles.

Guiding Principles for a Better Funding System

The United story tells of one extreme case where the funding system failed spectacularly. It is time to start from scratch to design a new system that will strengthen funding and help preserve the fragile defined benefit system.

1. *There can be no smoothing in the measurement of assets and liabilities.*
Measurement of assets and liabilities must be done on a market basis, and the only true measure of solvency for liability is termination liability. The liability should be equal to the amount needed to settle the obligation and should be determined by either annuity purchase rates or minimum lump sums. Thirty-year Treasury rates have been used for the lump-sum interest rate basis, although this will be subject to debate along with other pension reform proposals.

For cash balance plans, the termination liability should be the sum of the account balances. For plans that offer a lump sum, the liability should equal the total lump-sum payments.

An ongoing plan valuation is useful for setting long-term contribution policy, but this does not apply at plan termination. Indeed, companies could follow whatever contribution policy they wish, assuming they meet the minimum standard. If there is a sufficient spread between the minimum required and maximum deductible contribution, an employer could set their own contribution strategy. If they want to fund only the minimum required, then they should expect some volatility if they are continually chasing a minimum funding threshold. This is evident today, as some companies are making contributions only to have plan assets exceed the accumulated benefit obligation, and thus avoid the minimum liability under SFAS No. 87.

There should be no contribution holiday or “credit balance” if the termination liability exceeds the market value of assets. If a company wants to put money away as a reserve for contributions in a future year, it could create this reserve outside the pension trust.

2. *There should be a reasonable transition period to allow plans to become well funded on a termination basis.*

Most plans are underfunded on a plan termination basis. However, as discussed above, this should be the funding goal. Since we cannot expect sponsors to become 100 percent funded overnight, a reasonable amortization period would be set up. Severely underfunded plans should be required to accelerate funding much quicker than other plans.

For example, the unfunded liability could be split into three levels. One amortization would apply to the portion of the funded ratio below 50 percent, a different amortization from 50 percent to 75 percent, and a lesser amount from 75 percent to 100 percent.

For example, assume a plan has market value of assets equal to \$40 million and has a termination liability of \$100 million. The amount needed to become 50 percent funded, or \$10 million, would be paid within two years. The amount from 50 to 75 percent, or \$25 million, would be amortized over five years. The amount from 75 to 100 percent would be amortized over eight years. In this example, the contribution toward the unfunded liability would equal

\$10 million divided by 2	=	\$ 5,000,000
\$25 million divided by 5	=	\$ 5,000,000
\$25 million divided by 8	=	<u>\$ 3,125,000</u>
		\$13,125,000

This method would give companies an incentive to get to the different funding milestones of 50 percent, 75 percent, and 100 percent. This would allow all plans to reach 100 percent funding on a plan termination basis over several years, and ensure a true measure of solvency for participants and the PBGC.

The unfunded contribution would be in addition to the normal cost, calculated using the unit credit cost method and plan termination assumptions. To the extent that the investment returns exceed the interest rate used to compute the liability, these gains would automatically shorten the amortization period. The treatment of investment gains is discussed in more detail below.

3. *Employers should be allowed to overfund their plans in prosperous times, and be able to use surplus assets for other purposes.*

Companies are averse to funding at higher levels because of the inability to use surplus assets. If companies were permitted to use assets above a certain threshold above the termination liability to pay retiree medical or severance benefits, they would be more comfortable funding their plans at higher levels. The threshold would be sufficiently high (for example, 125 percent of termination liability) to ensure that the future funded status is not compromised.

Also, the maximum deductible contribution level should be very high so as not to discourage funding. A high threshold equal to 150 percent of termination liability could be adopted.

I would even recommend letting companies withdraw surplus assets above a certain threshold. Companies would be required to pay tax, but no penalty, on withdrawals of surplus assets over 125 percent of liability. The tax would be required because the company received a tax deduction when the original contributions were made.

4. *There should be better disclosure of the true funded status.*

The summary annual report does not provide actuarial information, the Schedule B is too technical, and the assumptions and methods are artificial, as noted in the case of United. A basic disclosure, featuring the market value of assets, termination liability, minimum required contribution, and actual contribution, would give participants and regulators the key funding measures needed to assess the plan's solvency and show the commitment of the employer to funding the plan.

Investment Gains

Most plans are not going to terminate soon and have a long-term investment strategy that includes higher-yielding investments such as stocks, real estate, and high-yield bonds. The termination liability is not going to be based on long-term return assumptions. If a plan is 100 percent funded at termination liability and assets earn a higher return, there will be investment gains.

Appendix B shows a cash flow stream that starts at \$100, grows to \$253 after 19 years, then declines to zero over the next 55 years. The present value of the cash flows using an 8 percent discount rate equals \$1,707. The present value discounted at 5

percent is \$2,476. For this example, assume that the plan has assets of \$1,707 and will earn 8 percent each year, but the termination liability is calculated using 5 percent. Although the plan is 100 percent funded on an ongoing basis, with discount rate equal to the expected return, the market funded ratio is only 69 percent. Assume no benefit accruals.

The proposed method would require contributions to fund the deficit for nine years. After the plan becomes 100 percent funded, the investment gains would cause the funded ratio to grow further for the next six years. Using the principles above, the plan sponsor would be permitted to withdraw assets over 125 percent of the termination liability. In this example the plan sponsor would begin to withdraw this surplus in year 15 and would continue to do so thereafter.

It is interesting to note that the present value of the contributions equals the present value of the withdrawals. Thus, the long-term economic impact to the plan sponsor is equivalent to a scenario of zero contributions. This is intuitive considering that the plan was 100 percent funded using an 8 percent discount rate and the assets earned exactly 8 percent. However, for all but the first few years, the plan would have been sufficient to cover the termination liability, thus giving security to both plan participants and the PBGC in the event of an early termination. In essence, the difference between the termination liability and ongoing liability has become a contingency reserve.

What if This Standard Had Been Applied to United?

Although the termination liability would be higher using PBGC methodology, I will use “market liability” as an estimate of the termination liability for purposes of this analysis.

As of January 2000, the market value of assets exceeded market liability by \$1.144 billion. The unit credit normal cost,² valued at the 30-year U.S. Treasury rate, would have been \$307 million. Because the surplus exceeded the normal cost, no contribution would have been required. However, the company would have been able to make a deductible contribution if it chose to, since the market funded ratio was 114.9 percent.

The market funded ratio as of January 2001 dropped to 89.4 percent. The proposed method would require a deficit contribution equal to the unfunded liability

² The 2002 Schedule B disclosed the current liability increase for benefit accrual at both 6.85 and 6.28 percent. The benefit accruals using the 30-year U.S. Treasury rate were calculated by applying the same duration methodology used to calculate the market liability.

(\$1 billion) divided by eight, or \$125 million. The unit credit normal cost would have been \$452 million. We will assume that the company would have made a contribution equal to \$577 million at the end of 2001.

As of January 2002, the unfunded market liability grew to \$2.570 billion, which would have been offset by the \$577 million contribution. The unfunded liability contribution would be one-eighth of this amount, or \$249 million. The total 2002 contribution, including normal cost of \$532 million, would have been \$781 million.

The unfunded liability as of January 2003 would have been \$6.273 billion less the contributions of \$577 million and \$781 million. This assumes no investment gain or loss on the contributions. The funded ratio, which was 50 percent with no contributions, is now 61 percent with the two contributions. The first \$3.131 billion (25 percent of the \$12.522 billion liability) would be amortized over eight years, and the remaining \$1.784 would be amortized over five years. The 2003 unfunded contribution would have been \$748 million. Together with the normal cost of \$581 million, the total required contribution for 2003 would have been \$1.329 billion.

In January 2004 the funded status improved with strong investment performance. The difference between market liability and market value of assets was \$5.871 billion. However, if the proposed contributions had been made, the assets would have been higher by \$2.687 billion. On this basis, the funded ratio would have been about 75 percent. The unfunded contribution for 2004 would have been \$398 million. Assuming that the 2004 normal cost was the same as the 2003 normal cost, the 2004 required contribution would have been \$979 million.

Year	Actual Unfunded Market Liability (billions)	Actual Market Funded Ratio	Unfunded Market Liability with Contributions (billions)	Market Funded Ratio with Contributions
2000	(\$1.14)	115%	(\$1.14)	115%
2001	1.00	89	1.00	89
2002	2.57	75	1.99	80
2003	6.27	50	4.92	61
2004	5.87	55	3.18	75

Over these five years, this funding standard would have required that the company add about \$3.7 billion to the plans. While the contributions would not have raised the funded ratio to 100 percent, it would have alleviated much of the unfunded liability facing the PBGC.

In addition, if the true funded status had been disclosed, employees, their unions, and the PBGC would have exerted pressure on the company to address the deficiency earlier, either by making contributions or by freezing the plans earlier if the company was unable to fund the plan.

Summary

If this method were adopted, the funding requirements would be raised significantly, which would cause more plan sponsors to freeze or terminate their plans. This is unfortunate, because, for many reasons, defined benefit plans are the most cost-effective vehicle for providing retirement security to employees.

But there is no denying that defined benefit plans are inherently risky to employers, who are responsible for maintaining well-funded plans regardless of the investment experience and interest rate environment. Plan sponsors can enjoy contribution holidays when the market is up and must make contributions when the market is down. It is a volatile system.

Many of the recent changes in funding law, such as the 20 percent range for the current liability rate in 2002 and 2003, the temporary long-term corporate bond average, and the reduced deficit contribution for airlines and steel companies, were designed to create flexibility but actually allowed companies to avoid facing their plans' true unfunded liabilities. As seen in the case of United, when the funding standards are relaxed too much, plans can become underfunded quickly, and the entire pension system is weakened. The pendulum should shift the other way to strengthen funding standards, reduce the liability of the PBGC, and protect the benefit security of plan participants.

Appendix A
United Airlines Schedule B

	CL Interest Rate		6.31%	6.31%	30 Year TSR					6.63%
2000	Market Value Assets	Actuarial Value Assets	Current Liability RPA '94 (Highest)	Current Liability OBRA '87	CL Funded Ratio	Begin of Year Cred Balance	Accrued Liability	AL Funded Ratio	Liability using 30 Year TSR	MV / 30 Yr Ratio
Ground Employees	\$ 1,590,535,575	\$ 1,422,319,648	\$ 1,426,653,760	\$ 1,426,653,760	99.7%	\$ 323,426,682	\$ 1,163,104,284	122.3%	\$ 1,367,518,155	116.3%
Pilots	\$ 4,093,323,974	\$ 3,586,776,681	\$ 3,513,807,738	\$ 3,513,807,738	102.1%	\$ 469,628,762	\$ 2,783,589,917	128.9%	\$ 3,402,524,787	120.3%
Management,Administrative	\$ 1,747,197,920	\$ 1,545,966,464	\$ 1,621,853,512	\$ 1,621,853,512	95.3%	\$ 143,169,511	\$ 1,316,957,657	117.4%	\$ 1,578,716,109	110.7%
Flight Attendants	\$ 1,401,240,686	\$ 1,279,099,875	\$ 1,409,309,975	\$ 1,409,309,975	90.8%	\$ 357,878,736	\$ 948,599,086	134.8%	\$ 1,339,443,854	104.6%
Total	\$ 8,832,298,155	\$ 7,834,162,668	\$ 7,971,624,985	\$ 7,971,624,985	98.3%	\$ 1,294,103,691	\$ 6,212,250,944	126.1%	\$ 7,688,202,904	114.9%

	CL Interest Rate		6.21%	6.21%	30 Year TSR					5.54%
2001	Market Value Assets	Actuarial Value Assets	Current Liability RPA '94 (Highest)	Current Liability OBRA '87	CL Funded Ratio	Begin of Year Cred Balance	Accrued Liability	AL Funded Ratio	Liability using 30 Year TSR	MV / 30 Yr Ratio
Ground Employees	\$ 1,528,068,513	\$ 1,524,558,704	\$ 1,544,592,060	\$ 1,544,592,060	98.7%	\$ 318,084,920	\$ 1,243,607,043	122.6%	\$ 1,678,642,759	91.0%
Pilots	\$ 3,844,383,683	\$ 3,770,974,551	\$ 3,859,887,099	\$ 3,859,887,099	97.7%	\$ 513,069,422	\$ 3,010,443,588	125.3%	\$ 4,115,834,112	93.4%
Management,Administrative	\$ 1,692,943,635	\$ 1,667,525,872	\$ 1,801,634,459	\$ 1,801,634,459	92.6%	\$ 156,412,691	\$ 1,522,442,185	109.5%	\$ 1,901,965,167	89.0%
Flight Attendants	\$ 1,383,967,679	\$ 1,396,748,064	\$ 1,591,074,474	\$ 1,591,074,474	87.8%	\$ 357,753,444	\$ 1,073,516,605	130.1%	\$ 1,756,223,280	78.8%
Total	\$ 8,449,363,510	\$ 8,359,807,191	\$ 8,797,188,092	\$ 8,797,188,092	95.0%	\$ 1,345,320,477	\$ 6,850,009,421	122.0%	\$ 9,452,665,318	89.4%

	CL Interest Rate		6.85%	6.28%	30 Year TSR					5.45%	
2002	Market Value Assets	Actuarial Value Assets	Current Liability RPA '94 (Highest)	Current Liability OBRA '87	CL Funded Ratio	Begin of Year Cred Balance	Accrued Liability	AL Funded Ratio	Liability using 30 Year TSR	MV / 30 Yr Ratio	Duration
Ground Employees	\$ 1,369,100,443	\$ 1,592,434,689	\$ 1,534,373,735	\$ 1,647,662,409	103.8%	\$ 324,761,880	\$ 1,333,187,960	119.4%	\$ 1,812,626,619	75.5%	12.95
Pilots	\$ 3,327,687,412	\$ 3,840,924,188	\$ 3,783,777,077	\$ 3,997,229,485	101.5%	\$ 560,528,344	\$ 3,251,572,860	118.1%	\$ 4,308,046,149	77.2%	9.90
Management,Administrative	\$ 1,539,930,498	\$ 1,759,053,681	\$ 1,836,070,228	\$ 1,923,057,666	95.8%	\$ 104,411,038	\$ 1,674,569,835	105.0%	\$ 2,049,723,584	75.1%	8.31
Flight Attendants	\$ 1,285,112,935	\$ 1,484,270,650	\$ 1,579,208,089	\$ 1,718,659,959	94.0%	\$ 289,766,980	\$ 1,199,717,126	123.7%	\$ 1,921,721,454	66.9%	15.49
Total	\$ 7,521,831,288	\$ 8,676,683,208	\$ 8,733,429,129	\$ 9,286,609,519	99.4%	\$ 1,279,468,242	\$ 7,459,047,781	116.3%	\$ 10,092,117,806	74.5%	11.11

	CL Interest Rate		6.65%	6.09%	30 Year TSR					4.94%	
2003	Market Value Assets	Actuarial Value Assets	Current Liability RPA '94 (Highest)	Current Liability OBRA '87	CL Funded Ratio	Begin of Year Cred Balance	Accrued Liability	AL Funded Ratio	Liability using 30 Year TSR	MV / 30 Yr Ratio	Duration
Ground Employees	\$ 1,142,620,249	\$ 1,371,144,299	\$ 2,364,223,974	\$ 2,536,430,908	58.0%	\$ 333,714,934	\$ 1,995,169,561	68.7%	\$ 2,890,070,147	39.5%	13.01
Pilots	\$ 2,681,992,508	\$ 3,218,391,010	\$ 4,023,518,764	\$ 4,250,838,030	80.0%	\$ 525,477,986	\$ 3,330,523,080	96.6%	\$ 4,717,654,380	56.9%	10.09
Management,Administrative	\$ 1,293,407,131	\$ 1,552,088,557	\$ 2,184,600,322	\$ 2,338,476,718	71.0%	\$ 44,337,971	\$ 1,931,622,820	80.4%	\$ 2,654,472,888	48.7%	12.58
Flight Attendants	\$ 1,130,582,045	\$ 1,356,698,454	\$ 1,798,376,407	\$ 1,949,506,403	75.4%	\$ 262,628,692	\$ 1,346,668,004	100.7%	\$ 2,259,862,645	50.0%	15.01
Total	\$ 6,248,601,933	\$ 7,498,322,320	\$ 10,370,719,467	\$ 11,075,252,059	72.3%	\$ 1,166,159,583	\$ 8,603,983,465	87.1%	\$ 12,522,060,060	49.9%	12.13

	For Projection		6.65%		30 Year TSR					4.98%
2004	Market Value Assets	2003 CL Increase for Benefit Accrual	Used to Project CL Forward @6.65%	Benefit Payments 2003					Liability using 30 Year TSR	MV / 30 Yr Ratio
Ground Employees	\$ 1,293,195,485	\$ 69,172,763	\$ 2,438,104,006	\$ 152,057,696					\$ 2,967,697,559	43.6%
Pilots	\$ 2,897,003,669	\$ 173,664,783	\$ 4,078,873,547	\$ 384,633,637					\$ 4,766,098,468	60.8%
Management,Administrative	\$ 1,517,231,542	\$ 114,460,846	\$ 2,307,530,549	\$ 139,770,807					\$ 2,792,233,782	54.3%
Flight Attendants	\$ 1,354,333,001	\$ 78,237,938	\$ 1,924,796,705	\$ 74,147,103					\$ 2,407,170,143	56.3%
Total	\$ 7,061,763,697	\$ 435,536,330	\$ 10,749,304,807	\$ 750,609,243					\$ 12,933,199,951	54.6%

**Appendix B
Present Value of Cash Flows**

PV Cash Flows @8% \$ 333 \$ (333)

Discount Rate		5%	8%	125%						
Year	Benefit Cash Flow	Termination Liability	Plan Assets	Funded Ratio	Unfunded Liability	Unfunded Portion 8	Amortized Over 5	2	Required Contrib	Withdrawal over 125%
0	\$ 100	\$ 2,476	\$ 1,707	69%	\$ 769	\$ 619	\$ 150	\$ -	\$ 107	\$ -
1	\$ 105	\$ 2,500	\$ 1,851	74%	\$ 649	\$ 625	\$ 24	\$ -	\$ 83	\$ -
2	\$ 110	\$ 2,520	\$ 1,977	78%	\$ 543	\$ 543	\$ -	\$ -	\$ 68	\$ -
3	\$ 116	\$ 2,536	\$ 2,093	83%	\$ 443	\$ 443	\$ -	\$ -	\$ 55	\$ -
4	\$ 122	\$ 2,547	\$ 2,200	86%	\$ 347	\$ 347	\$ -	\$ -	\$ 43	\$ -
5	\$ 128	\$ 2,552	\$ 2,297	90%	\$ 255	\$ 255	\$ -	\$ -	\$ 32	\$ -
6	\$ 134	\$ 2,552	\$ 2,385	93%	\$ 167	\$ 167	\$ -	\$ -	\$ 21	\$ -
7	\$ 141	\$ 2,546	\$ 2,463	97%	\$ 83	\$ 83	\$ -	\$ -	\$ 10	\$ -
8	\$ 148	\$ 2,533	\$ 2,530	100%	\$ 3	\$ 3	\$ -	\$ -	\$ 0	\$ -
9	\$ 155	\$ 2,511	\$ 2,585	103%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	\$ 163	\$ 2,482	\$ 2,636	106%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11	\$ 171	\$ 2,443	\$ 2,685	110%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
12	\$ 180	\$ 2,394	\$ 2,728	114%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13	\$ 189	\$ 2,334	\$ 2,767	119%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
14	\$ 198	\$ 2,263	\$ 2,800	124%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15	\$ 208	\$ 2,178	\$ 2,826	130%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (104)
16	\$ 218	\$ 2,079	\$ 2,740	132%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (142)
17	\$ 229	\$ 1,964	\$ 2,599	132%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (144)
18	\$ 241	\$ 1,833	\$ 2,434	133%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (142)
19	\$ 253	\$ 1,684	\$ 2,246	133%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (140)
20	\$ 227	\$ 1,516	\$ 2,032	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (138)
21	\$ 205	\$ 1,364	\$ 1,830	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (125)
22	\$ 184	\$ 1,228	\$ 1,647	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (112)
23	\$ 166	\$ 1,105	\$ 1,482	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (101)
24	\$ 149	\$ 994	\$ 1,334	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (91)
25	\$ 134	\$ 895	\$ 1,200	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (82)
26	\$ 121	\$ 805	\$ 1,080	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (74)
27	\$ 109	\$ 725	\$ 972	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (66)
28	\$ 98	\$ 652	\$ 875	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (60)
29	\$ 88	\$ 587	\$ 787	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (54)
30	\$ 79	\$ 528	\$ 709	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (48)
31	\$ 71	\$ 475	\$ 638	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (43)
32	\$ 64	\$ 428	\$ 574	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (39)
33	\$ 58	\$ 385	\$ 516	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (35)
34	\$ 52	\$ 346	\$ 464	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (32)
35	\$ 47	\$ 312	\$ 418	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (29)
36	\$ 42	\$ 280	\$ 376	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (26)
37	\$ 38	\$ 252	\$ 338	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (23)
38	\$ 34	\$ 227	\$ 304	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (21)
39	\$ 31	\$ 204	\$ 274	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (19)
40	\$ 28	\$ 183	\$ 246	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (17)
41	\$ 25	\$ 165	\$ 221	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (15)
42	\$ 22	\$ 148	\$ 199	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (14)
43	\$ 20	\$ 133	\$ 179	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (12)
44	\$ 18	\$ 120	\$ 161	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (11)
45	\$ 16	\$ 108	\$ 145	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (10)
46	\$ 15	\$ 97	\$ 130	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (9)
47	\$ 13	\$ 87	\$ 117	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (8)
48	\$ 12	\$ 78	\$ 105	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (7)
49	\$ 11	\$ 70	\$ 94	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (6)
50	\$ 10	\$ 63	\$ 84	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (6)
51	\$ 9	\$ 56	\$ 76	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (5)
52	\$ 8	\$ 51	\$ 68	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (5)
53	\$ 7	\$ 45	\$ 61	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (4)
54	\$ 6	\$ 41	\$ 54	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (4)
55	\$ 6	\$ 36	\$ 49	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (3)
56	\$ 5	\$ 32	\$ 43	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (3)
57	\$ 5	\$ 29	\$ 39	134%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (3)
58	\$ 4	\$ 26	\$ 35	135%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (2)
59	\$ 4	\$ 23	\$ 31	135%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (2)
60	\$ 3	\$ 20	\$ 27	135%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (2)
61	\$ 3	\$ 18	\$ 24	135%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (2)
62	\$ 3	\$ 16	\$ 21	135%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (2)
63	\$ 2	\$ 14	\$ 19	135%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
64	\$ 2	\$ 12	\$ 16	135%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
65	\$ 2	\$ 10	\$ 14	136%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
66	\$ 2	\$ 9	\$ 12	136%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
67	\$ 2	\$ 8	\$ 10	136%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
68	\$ 1	\$ 6	\$ 9	137%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
69	\$ 1	\$ 5	\$ 7	138%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
70	\$ 1	\$ 4	\$ 6	139%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1)
71	\$ 1	\$ 3	\$ 5	140%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)
72	\$ 1	\$ 2	\$ 3	143%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)
73	\$ 1	\$ 2	\$ 2	149%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)
74	\$ 1	\$ 1	\$ 1	166%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (0)