

Pension Administration Services, Inc.

**FEDERATED STATES OF MICRONESIA  
SOCIAL SECURITY ADMINISTRATION**

**ACTUARIAL VALUATION  
AS OF JANUARY 1, 2004**

**PREPARED BY:  
PENSION ADMINISTRATION SERVICES, INC.  
OCTOBER 28, 2004**

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**SECTION I**

**FOREWORD**

This report contains the results of the ninth actuarial valuation of the Federated States of Micronesia Security Administration and is the first performed by Pension Administration Services, Inc. The valuation was conducted as of January 1, 2004 and the results contained herein report costs applicable to the fiscal year ending December 31, 2004.

Section 707 of Title 53 stipulates that the Board shall employ an actuary to make actuarial valuations of the Social Security System not less frequently than every three years.

The purpose of this actuarial valuation is to:

- Compare the accrued liability to the market value of trust assets in order to determine the current funded status.
- Provide a basis for determining the effect of any future proposed changes to the system.

**SECTION II**

**ACTUARIAL VALUATION RESULTS**

**A. Introduction**

This section contains the detailed results of the actuarial valuation. These results are classified in subsections B through F as noted below:

- B. Actuarial Certification
- C. Summary of Valuation Results
- D. Accrued Liability, Funded Ratio, and Deficiency
- E. Discussion of the Unfunded Accrued Liability
- F. Comments and Suggestions to Control and Reduce the Unfunded Accrued Liability

**B. Actuarial Certification**

This report presents the results of an actuarial valuation of the Federated States of Micronesia Social Security Administration which was conducted as of January 1, 2004. This is the first actuarial valuation performed by Pension Administration Services, Inc. and was performed using worker data and asset information supplied by the Federated States of Micronesia Social Security Administration. This data was not audited, but was checked for reasonableness and consistency with prior year's data when possible. The valuation results presented are dependent on the accuracy of the worker and asset information.

Although it is impossible to completely mimic the assumptions and methods used by the prior actuary without having complete access to their computer system, we have made every attempt to utilize their assumptions and methods whenever it was possible and reasonable to do so.

Actuarial assumptions are used to build a mathematical model of a retirement system. Because the Administration is intended to continue well into the future and indeed past the lifetime of the current workers, these assumptions must be chosen with the very long-term in mind. This is why the assumption regarding the return on trust assets does not change with every valuation to reflect the current investment environment. Choosing realistic long-term assumptions smooths out otherwise inherent fluctuations in the measurement of liabilities that would result if assumptions were changed with every valuation. This consistency allows for valid comparisons of unfunded accrued liability, the funded ratio, and the deficiency from one valuation to the next.

This valuation has been completed in accordance with generally accepted actuarial principles and practices. The valuation has been prepared under the supervision of Michael W. Spaid, a Fellow of the Conference of Consulting Actuaries, an Associate of the Society of Actuaries, an Enrolled Actuary under ERISA, a Member of the American Society of Pension Actuaries, and a Member of the American Academy of Actuaries.

Certified by:

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Michael W. Spaid, A.S.A.  
Chief Actuary

Pension Administration Services, Inc.  
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**C. Summary of Valuation Results**

The principal results of this valuation are the calculation of the accrued liability, the funded ratio (market value of trust assets divided by accrued liability), and the deficiency. This valuation reflects the increase to the maximum taxable wages from \$3,000 per quarter to \$5,000 per quarter.

The accrued liability represents the current value of benefits already earned, or accrued, as of the valuation date including benefits currently in pay status.

The funded ratio is an indication of how well funded the Administration is at any point in time with respect to benefits already earned. A funded ratio of 100% would indicate that the Administration's liability for benefits already earned was fully funded by current trust assets. A funded ratio of 25% would indicate that current trust assets were only great enough to cover 25% of the benefits already earned. The greater the funded ratio, the better funded the Administration is with respect to benefits already earned.

The deficiency is calculated as the accrued liability less the market value of trust assets and further reduced by the estimated value of future employee contributions in excess of that needed to fund future benefits and system expenses.

As of January 1, 2004 the total accrued liability stood at \$240,247,000 and the market value of trust assets was \$37,347,000, resulting in an unfunded accrued liability of \$202,900,000.

In addition, as of January 1, 2004 the estimated value of future employee contributions in excess of that needed to fund future benefits and system expenses was \$39,465,000. Once this is subtracted from the unfunded accrued liability this means that the deficiency is \$163,435,000. The deficiency represents the value of benefits already earned that are not covered by existing assets and are not anticipated to be covered by expected future contributions.

The unfunded accrued liability is greatly affected by the level of trust assets which, in return is affected by the investment performance of the trust. After two years of negative investment returns (-10.82% for FY2001 and -8.32% for FY2002) the trust experienced a positive return for FY2003 of 12.55%. These large fluctuations can by themselves increase or decrease the unfunded accrued liability by millions of dollars.

When discussing the funded status of a retirement system, a usual benchmark is the funded ratio of the system which, as mentioned above, is calculated as the market value of trust assets divided by accrued liability. The funded ratio is unchanged at January 1, 2004 from 16% at January 1, 2002.

The taxable wage base was increased from \$3,000 per quarter to \$5,000 per quarter and it is important to note that while this will increase contributions, it also, to a certain extent, increased the unfunded accrued liability. This is because the benefits are calculated as a percentage of compensation earned up to the taxable wage base and the accrued liability is a measure of these benefits.

**D. Unfunded Accrued Liability, Funded Ratio, and Deficiency**

The accrued liability represents the value of benefits already earned and which are in pay status as well as benefits earned as of the valuation date by those who are still working and are expected to earn future benefits. One can think of this as the amount needed today to pay for all benefits earned as of today that are either already being paid or may be paid in the future.

This determination of the accrued liability does not include former workers who are no longer making contributions, are not fully insured, and therefore are not entitled to a future benefit. Should these workers enter re-enter the workforce in the future, their benefits will then be included in the category of workers currently earning benefits.

Accrued Liability For:	Accrued Liability and Market Value of Assets as of January 1	
	2002	2004
Workers Earning Benefits	\$ 127,551,000	\$ 139,405,000
Retirees, Spouses, Children, and Disabled Workers Receiving Benefits	67,037,000	75,949,000
Fully Insured Inactive Workers Entitled to a Future Benefit	23,061,000	24,893,000
Total Accrued Liability	<u>\$ 217,649,000</u>	<u>\$ 240,247,000</u>
Market Value of Assets	<u>(35,523,000)</u>	<u>(37,347,000)</u>
Unfunded Accrued Liability	\$ 182,126,000	\$ 202,900,000
Funded Ratio	16%	16%

The unfunded accrued liability is the excess of the accrued liability over the market value of assets. The funded ratio indicates what percent of the accrued liability is covered by the market value of assets.

The taxable wage base has increased from \$3,000 per quarter in the prior valuation to \$5,000 per quarter in this valuation.

*All values shown as of January 1, 2002 were taken from the January 1, 2002 actuarial valuation report prepared by the prior actuary and are provided for comparison purposes only. The Total Accrued Liability as of January 1, 2002 shown in the prior valuation included \$1,896,000 for former employees who are not fully insured and not entitled to a future benefit.*

The unfunded accrued liability can also be further reduced by considering the current value of future employee and employer contributions that are in excess of that needed to pay for future benefits earned and future expenses.

Currently we estimate that a combined employer and employee contribution rate of approximately 8.7% would pay for future benefits earned by new workers who would enter the Administration in the future and would cover future expenses. Since the current combined tax rate is 12% of covered earnings, this excess can be used to reduce the unfunded accrued liability as shown below.

	Determination of the Total Deficiency as of January 1	
	2002	2004
Total Accrued Liability	\$ 217,649,000	\$ 240,247,000
Market Value of Assets	(35,523,000)	(37,347,000)
Current Value of Excess Employee Contributions from Active Workers	(44,599,000)	(39,465,000)
Total Deficiency	\$ 137,527,000	\$ 163,435,000

The current value of excess employee contributions from active workers as of January 1, 2004 includes an allowance for future system expenses.

*All values shown as of January 1, 2002 were taken from the January 1, 2002 actuarial valuation report prepared by the prior actuary and are provided for comparison purposes only. The Total Accrued Liability as of January 1, 2002 shown in the prior valuation included \$1,896,000 for former employees who are not fully insured and not entitled to a future benefit.*

**E. Discussion of the Unfunded Accrued Liability**

The unfunded accrued liability is the excess of the accrued liability over the market value of assets. The funded ratio indicates what percent of the accrued liability is covered by the market value of assets.

When the market value of assets equals or exceeds the accrued liability there is no unfunded accrued liability and the retirement system is said to be fully funded. Although it is not critical that the Administration be fully funded, it is important that there is a positive trend in increasing the funded ratio from year-to-year. It is important to note that the funded ratio can decrease due to poor performance by the trust assets and also due to increasing benefits payable to both current and future beneficiaries.

Past valuations have gone into great detail describing the danger of an ever increasing unfunded accrued liability so this report will only agree that this is a continuing and serious issue. If the Administration were to cease operations with an unfunded accrued liability, there would not be enough money in the trust at that time to fully provide benefits already in pay status or promised in the future.

Actuaries estimate the “expected” accrued liability in the year following an actuarial valuation to be equal to the accrued liability as of the valuation date plus the cost associated with additional benefits earned during the year (this cost is calculated as part of the valuation process, and is not the actual employee and employer contributions received during the year) multiplied by one year of interest. Thus one can see that the accrued liability is expected to increase from one year to the next not only due to interest on the accrued liability but also due to the addition of costs associated with additional benefits earned.

The Board may wish to implement a funding policy to bring the funded ratio from its existing level of 16% to 30-50% over the next 20 to 30 years. It is difficult to make progress without a plan and a clear-cut plan like this would serve to keep all interested parties focused on the continued long-term viability of the Administration.

Having said this, it is also important that until a long-term trend of increasing the funded ratio and decreasing the deficiency has been realized, that the Administration not increase future benefits or grant benefit increases to those already in pay status without making other changes that would pay for these benefit increases.

It is important to note that the taxable wage base has increased from \$3,000 per quarter in the prior valuation to \$5,000 per quarter in this valuation. Increasing the taxable wage base not only increases the amount of future contributions collected but also increases the accrued liability because benefits are calculated as a percentage of compensation earned up to the taxable wage base and the accrued liability is a measure of these benefits. If the taxable wage base had remained at \$3,000 per quarter, the accrued liability as of January 1, 2004 would have been \$236,218,000, which is \$4,029,000 less than its current level of \$240,247,000.

**F. Comments and Suggestions to Control and Reduce the Unfunded Accrued Liability**

The ultimate goal of the Administration must be to remain viable and with this in mind it is important to insure that income will support the level of benefits provided. By viable, we mean that the Administration will continue to exist and be able to pay promised benefits well into the future. Although the Administration realized a 12.55% return on trust assets during fiscal year 2003, because this is the first positive return in three years, it cannot be considered a long-term trend and should not be used to justify immediate benefit increases of any kind. Large benefit increases coupled with a recurrent downturn in the world economy could cause the Administration to pay more in benefits and expenses each year than it realizes in contributions and earnings and should this situation persist long enough, trust assets could be completely exhausted and the Administration could become unable to continue to pay benefits. The inability of the Administration to pay promised benefits would be a great loss to the people of the Federated States of Micronesia and would certainly have a negative effect on almost every sector of the local economy.

In order to improve the funded ratio the Administration may want to consider implementing a maximum benefit to limit the size of the benefit that may be earned. The maximum benefit could be set at 90% to 100% of the workers greatest covered earnings during the workers most recent past 20 to 40 quarters, or the maximum could be a set dollar amount, just as the minimum benefit is a set dollar amount. Most would find it fair that benefits paid to a beneficiary should not exceed what he was earning prior to retirement and a benefit maximum is well within the overall philosophy of social security benefits whereby wealthier individuals will, by having their benefits capped, help fund the benefits of others. For reference, the United States Social Security System imposes a maximum benefit to limit the amount of payments to high income earners.

The Administration may also want to consider combining a maximum benefit with increasing the age at which a fully insured worker is eligible to retire, which is currently 60. Retirement benefits could be made available to fully insured workers who were born before a certain date at age 60 (no change here) and others born after that date would see their retirement age increase from 60 to 61, 62 or 63 depending on their date of birth. Increasing the retirement age, combined with a cap on the maximum benefit that may be paid can reduce the accrued liability and increase the funded ratio. An increase in the retirement age like this was implemented by the Social Security System in the United States some years ago.

And finally, we support the Administration in the ongoing effort to verify eligibility for benefit payments to all current beneficiaries. Payment verification greatly reduces the possibility that payments are being made to some beneficiaries who are either no longer entitled to benefits (such as benefits to a surviving spouse who has remarried) or are deceased. Ensuring that benefits are only paid to eligible beneficiaries reduces the unfunded accrued liability from what it would otherwise be if benefit payments continued to those who are no longer eligible for benefits.

**SECTION III**

**TRUST ASSETS**

**A. Statement of Net Assets**

<u>ASSETS</u>	<u>12/31/2002</u>	<u>12/31/2003</u>
Cash and equivalents	\$ 2,787,529	\$ 2,171,221
Investments, at fair value	29,019,959	33,318,406
General receivables, net of an allowance for doubtful accounts	9,129	1,712,396
Accrued interest receivable	129,828	138,278
Advances, net of an allowance for doubtful Accounts	434	7,500
Accrued Contributions	1,539,664	
Prepaid expenses	2,897	1,500
Fixed assets, net	<u>90,251</u>	<u>80,527</u>
Total Assets	<u>\$ 33,579,691</u>	<u>\$ 37,429,828</u>
 <u>LIABILITIES</u>		
Accounts payable – beneficiaries	\$ 11,643	\$ 11,643
Accounts payable – general	19,761	50,464
Taxes/personnel benefits payable	<u>16,693</u>	<u>20,819</u>
Total Liabilities	<u>48,097</u>	<u>82,926</u>
 NET ASSETS		
Restricted:		
Held in trust for retirement, disability and survivors' benefits	<u>\$ 33,531,594</u>	<u>\$ 37,346,902</u>

*Statement of net assets as of 12/31/2002 was adjusted by including accrued contributions and the net value of capital assets as indicated in the 2003 auditor's report.*

**B. Statement of Changes in Net Assets**

	<u>12/31/2002</u>	<u>12/31/2003</u>
Additions:		
Contributions	\$ <u>11,715,449</u>	\$ <u>11,398,884</u>
Investment income:		
Net increase in the fair value of investments	(3,131,727)	3,982,671
Interest income	129,828	138,278
Miscellaneous income	<u>4,937</u>	<u>65,454</u>
Total investment income	(2,996,962)	4,186,403
Adjustment per 2003 financial statement	90,251	
Total additions	<u>8,808,738</u>	<u>15,585,287</u>
Deductions:		
Benefit payments	9,970,947	10,835,214
Refund contributions	19,687	30,634
Administrative expenses, net	<u>809,256</u>	<u>904,131</u>
Total deductions	<u>10,799,890</u>	<u>11,769,979</u>
Change in net assets	(1,991,152)	3,815,308
Net assets at beginning of year	<u>35,522,746</u>	<u>33,531,594</u>
Net assets at end of year	\$ <u><u>33,531,594</u></u>	\$ <u><u>37,346,902</u></u>

*Statement of changes in net assets as of 12/31/2002 was adjusted by including accrued contributions and the net value of capital assets as indicated in the 2003 auditor's report.*

**C. Trust Asset History**

<u>Fiscal Year End</u>	<u>Beginning of Year Market Value of Assets</u>	<u>Prior Year Adjustment</u>	<u>Contributions</u>	<u>Trust Gain or (Loss)</u>	<u>Other Income</u>	<u>Benefit Payments</u>	<u>Administrative Expenses</u>
3/31/1996	19,708,993		7,679,774	3,672,982	4,600	(6,140,340)	(738,817)
3/31/1997	24,187,192		8,220,669	2,706,638	7,917	(6,562,802)	(654,383)
3/31/1998	27,905,231		8,953,398	7,876,250	5,057	(7,736,924)	(721,912)
3/31/1999	36,281,100		8,041,629	4,189,816	4,894	(8,222,560)	(803,865)
3/31/2000	37,419,014		8,357,388	4,084,332	9,951	(8,996,669)	(1,018,511)
12/31/2000	41,927,505		6,914,430	(1,527,557)	5,441	(6,893,415)	(666,969)
12/31/2001	39,759,435	(16,237)	10,486,084	(4,305,329)	4,422	(9,582,168)	(823,461)
12/31/2002	35,522,746	90,251	11,715,449	(3,001,899)	4,937	(9,990,634)	(809,256)
12/31/2003	33,531,594		11,398,884	4,120,949	65,454	(10,865,848)	(904,131)
12/31/2004	37,346,902						

*Historical asset information up to and including fiscal year ended 12/31/01 was taken from prior actuarial valuations prepared by the prior actuary.*

**D. Trust Investment Experience History**

<u>Fiscal Year End</u>	<u>Return</u>
3/31/1996	18.26%
3/31/1997	10.96%
3/31/1998	27.97%
3/31/1999	11.71%
3/31/2000	10.56%
12/31/2000	-3.67%
12/31/2001	-10.82%
12/31/2002	-8.32%
12/31/2003	12.55%

Return for 9 months

*Historical trust investment experience information up to and including the fiscal year that ended 12/31/01 was taken from prior actuarial valuations prepared by the prior actuary.*

**Average Annual Return**

4 ¾ Year Average	-0.42%
8 ¾ Year Average	7.21%

## SECTION IV

### **ACTUARIAL ASSUMPTIONS, AND SUMMARY OF KEY SYSTEM FEATURES**

#### **A. Actuarial Assumptions**

Actuarial Cost

Method: Individual Entry Age Method, Level Percent of Pay

Investment Income: 7.5% per year

Expenses: 0.75% of Covered Wages

Salary Increase: 4.5% per year

Mortality: 1984 Unisex Pension Mortality Table for participants not yet in receipt of benefits. The same mortality table for retirees and beneficiaries in receipt of benefits except that they are considered to be two years older than they actually are.

Disabled

Mortality: PBGC Mortality Table for Disabled Persons receiving Social Security

Retirement Age: Age 60 if eligible, otherwise when eligible but not later than age 70  
Active workers who are older than 60 are assumed to retire at the end of the next fiscal year if they earned 4 quarters of coverage during the fiscal year that just ended.

Pre-retirement

Spouse Benefit: 80% of the workers are assumed to be married and males are assumed to be 3 years older than their spouses.

Surviving male spouses are assumed to remarry 2 years after death of the worker and surviving female spouses are assumed to remarry 6 years after death of the worker.

Representative percentages of those who receive a pre-retirement spouse benefit who remarry are shown in the following table.

Age	Male Spouse Remarry within 2 years		Female Spouse Remarry within 6 years	
	Remarry	Does not Remarry	Remarry	Does not Remarry
20	39.22%	60.78%	76.71%	23.29%
30	32.35%	67.65%	48.92%	51.08%
40	20.70%	79.30%	26.80%	73.20%
50	14.44%	85.56%	9.75%	90.25%
60	7.40%	92.60%	2.52%	97.48%

Surviving spouse benefits continue if the spouse is employed but the benefits are subject to the earnings test.

**Pre-retirement**

**Children’s Benefit:** Married workers are assumed to have 3 children and each child is assumed to be age 13 at the time of death of the worker.

**Post Retirement**

**Survivor’s Benefit:** 80% of active workers are assumed to be married when they retire. Males are assumed to be 3 years older than their spouses. It is assumed that 10% of male spouses and 60% of female spouses have Old Age Benefits smaller than the survivor’s benefit.

**Disability:** Rates are from the 2003 US Social Security Trustees Report Intermediate Assumptions.

**Turnover:** None for citizens of the Federated States of Micronesia.

5% of citizens of countries other than the Federated States of Micronesia are assumed to leave each year, except for that 80% are assumed to leave in their third year of employment. It is also assumed that 80% of workers who are not citizens of the Federated States of Micronesia leave when they retire.

**Earnings Applied**

To the Earnings Test: Retirees: 80% of what the retiree was earning prior to retirement

Surviving Spouses of Active Workers: 75% of what the worker was earning prior to death.

Surviving Spouses of Inactive Workers: Quarterly earnings of twice the quarterly benefit plus \$300.

Children: None

Disabled: None

**Workers included**

In the Valuation:

Workers who have covered quarters in at least one of the last three years, are not currently indicated in the data files supplied by the administration as actively receiving a benefit or closed with no future benefits payable and who are age 21 or older are assumed to continue working and earn 4 quarters of coverage until they become disabled, die, or retire. Workers who have not earned any quarters of coverage during the last two years are assumed to stay out of the work force. Salary used as a basis to project future salaries is the greater of the salary earned during the last three years. If this salary is based on less than four quarters of coverage, it is converted to an annual salary.

**B. Summary of Key Features**

Applicable Laws

Public Law 2-74, as amended by Public Laws 5-120, 6-111, 7-118, 7-119,7-120, 9-56, 12-51, and 12-76.

Workers and Employer's Contributions

Workers, self-employed workers and employers each pay 6% of earnings up to a maximum of \$5,000 of earnings per quarter.

Self-employed with employees - remuneration shall be deemed to be twice the amount paid to the highest paid employee reported by the self-employed person in quarter, up to \$5,000 taxable per quarter.

Self-employed with no employee - Remuneration is deemed to be 2.5% of the gross revenue of the business for the previous calendar year subject to \$5,000 taxable per quarter.

Coverage

All employees employed by an employer incorporated or doing business in the Federated States of Micronesia are covered unless both the employer and employee are currently subject to another recognized social security system.

Eligibility for and Computation of Benefits is based on the following definitions:

Quarters of Coverage: A calendar quarter in which contributions were made for at least \$50 of earnings.

Currently Insured: Credited with at least 8 quarters of coverage during the most recent previous 13 calendar quarters.

Fully Insured: Credited with at least one quarter of coverage for each year since the later of attainment of age 21 or June 30, 1968 and having not less than 12 quarters of coverage.

Maximum Covered Earnings: Earnings up to a maximum of \$5,000 each quarter.

Minimum Benefit: \$50 per month.

Basic Benefit

A worker's Basic Benefit is calculated as 1/12 of:

1. 16.5% of the first \$10,000 of total Maximum Covered Earnings for which contributions have been made, plus
2. 3.0% of the next \$30,000 of total Maximum Covered Earnings for which contributions have been made, plus
3. 2.0% of total Maximum Covered Earnings in excess of \$40,000 for which contributions have been made.

Old Age Insurance Benefit

Eligibility: Age 60 and Fully Insured

Amount: Greater of the Basic Benefit and the Minimum Benefit, subject to the earnings test.

Disability Insurance Benefit

Eligibility: Disabled for three months and Fully Insured at time of disability

Amount: Unreduced Basic Benefit earned at time of disability. Sum of disability benefit and workers compensation benefit may not exceed 80% of the highest covered compensation earned in the year of disability and the prior five years. The benefit ceases should the worker recover from the disability.

Surviving Spouse Benefit

Eligibility: Worker must have been Fully Insured at time of death.

Amount: 60% of the Basic Benefit earned at the time of death, subject to the earnings test. Paid until the earlier of the date the spouse remarries or dies. This benefit is reduced by any Old Age Insurance Benefit that the spouse may be entitled to based on his or her own earnings history.

Surviving Child Benefit

Eligibility: Worker must have been Fully or Currently Insured at time of death.

Amount: 15% of the Basic Benefit for each dependent child under the age of 18 or 22 if a student. The benefit ceases if the child marries or is adopted by a close relative.

The minimum total Survivor benefit is \$50 per month and is subject to the Earnings Test.

The sum of all survivors' benefits cannot exceed 100% of the Basic Benefit earned at the time of death.

Lump Sum Death Benefit

Eligibility: After the death of any covered worker and rights to all survivors benefits have ceased.

Amount: Four percent of total Maximum Covered Earnings for which contributions have been paid, less the value of any benefits already paid.

Lump Sum Benefit (other than death)

Eligibility: Age 60 and not fully insured, native born citizen of the Federated States of Micronesia or resident for at least 10 years and must have lived in the Federated States of Micronesia for at least one year immediately preceding death.

Amount: Four percent of total Maximum Covered Earnings for which contributions have been paid.

Earnings Test

Benefits are reduced by \$1 for every \$2 of earnings in excess of \$300 received each quarter.

**SECTION V**

**AGE, SERVICE, BENEFIT, AND COMPENSATION DATA**

**A. Summary of Characteristics of Workers and Beneficiaries Included in the January 1, 2004 Valuation**

Active Workers – Average Age, Average Completed Years of Service, and Average Valuation Compensation

Worker	Number of Workers	Average Age	Average Completed Years of Service	Average Valuation Compensation
Men	14,030	39.99	9.55	\$ 5,293
Women	7,414	36.54	8.15	\$ 4,757
Total	21,444	38.80	9.07	\$ 5,108

The average annual accrued basic benefit is as of January 1, 2004 and is based on total remuneration for which contributions have been made through December 31, 2003.

Status	Number	Average Age	Average Annual Accrued Basic Benefit
Active	21,444	38.80	\$ 2,097
Inactive and Fully Insured	1,915	51.11	\$ 2,836
Retired	2,084	69.80	\$ 2,948
Disabled	160	54.47	\$ 3,218
Spouse	1,640	63.18	\$ 1,635
Child	2,203	14.88	\$ 434

Active Status- Not in pay status and currently earning additional benefits

Inactive and Fully Insured Status - Not in pay status, not currently earning additional benefits, and entitled to a benefit in the future

Pension Administration Services, Inc.

Average Compensation Distribution by Nearest Age and Covered Service

ACTIVE EMPLOYEES - Men

Nearest Age	Nearest Completed Years of Service							Total
	1	5	10	15	20	25	30 & More	
20	440 \$1,428.97	62 \$2,851.72	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	502 \$1,604.69
25	1,167 \$1,650.81	523 \$3,584.50	19 \$5,877.70	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	1,709 \$2,289.56
30	753 \$1,720.65	872 \$3,792.93	290 \$6,164.64	19 \$9,010.90	0 \$0.00	0 \$0.00	0 \$0.00	1,934 \$3,392.99
35	595 \$1,809.65	726 \$3,640.21	523 \$6,559.96	170 \$8,588.57	5 \$8,905.37	0 \$0.00	0 \$0.00	2,019 \$4,286.76
40	386 \$1,963.93	565 \$3,875.24	479 \$5,459.79	431 \$8,713.95	157 \$10,895.25	7 \$8,461.00	0 \$0.00	2,025 \$5,475.71
45	246 \$2,967.75	414 \$3,564.11	360 \$4,891.88	353 \$7,674.81	414 \$9,848.72	175 \$9,771.67	4 \$12,027.55	1,966 \$6,363.89
50	177 \$3,403.29	252 \$4,791.60	236 \$5,373.55	230 \$5,868.68	345 \$9,180.06	436 \$11,197.17	119 \$12,840.73	1,795 \$7,802.20
55	87 \$3,881.56	152 \$3,611.65	142 \$3,571.63	129 \$5,310.95	140 \$6,483.50	233 \$9,705.48	468 \$12,522.55	1,351 \$8,222.48
60	34 \$3,173.68	70 \$5,781.10	43 \$6,054.46	43 \$4,531.92	36 \$4,864.89	30 \$12,097.08	205 \$12,280.02	461 \$8,727.22
65	33 \$6,292.83	46 \$2,849.62	13 \$9,180.99	2 \$3,237.50	5 \$7,575.51	6 \$21,146.41	15 \$19,366.86	120 \$7,665.27
70 & Older	70 \$1,013.43	43 \$1,644.90	8 \$4,891.02	2 \$3,141.71	4 \$9,122.85	4 \$16,522.55	17 \$22,490.17	148 \$4,540.52
Total	3,988 \$1,941.42	3,725 \$3,766.37	2,113 \$5,632.16	1,379 \$7,497.26	1,106 \$9,183.33	891 \$10,626.82	828 \$12,834.48	14,030 \$5,293.21

Pension Administration Services, Inc.

Average Compensation Distribution by Nearest Age and Covered Service

ACTIVE EMPLOYEES - Women

Nearest Age	Nearest Completed Years of Service							Total
	1	5	10	15	20	25	30 & More	
20	486 \$1,777.70	121 \$3,501.29	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	607 \$2,121.28
25	749 \$2,076.53	516 \$3,744.06	10 \$4,662.13	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	1,275 \$2,771.67
30	378 \$2,205.82	611 \$3,993.30	220 \$5,913.64	13 \$7,655.20	0 \$0.00	0 \$0.00	0 \$0.00	1,222 \$3,825.06
35	220 \$2,438.44	375 \$3,779.04	327 \$6,416.31	150 \$8,217.36	8 \$11,272.25	0 \$0.00	0 \$0.00	1,080 \$4,976.40
40	151 \$2,557.43	255 \$3,787.11	235 \$5,275.33	192 \$8,134.01	119 \$9,727.37	9 \$8,926.60	0 \$0.00	961 \$5,610.00
45	122 \$2,806.74	158 \$3,365.91	158 \$4,813.33	173 \$6,189.31	185 \$8,994.41	117 \$10,964.68	2 \$4,276.14	915 \$6,186.75
50	70 \$1,925.31	103 \$4,326.32	104 \$3,886.81	99 \$6,117.52	104 \$8,041.01	160 \$9,928.27	91 \$10,727.93	731 \$6,828.01
55	44 \$2,375.58	59 \$4,909.59	53 \$4,674.85	41 \$6,302.74	42 \$8,176.59	45 \$9,541.64	141 \$9,898.41	425 \$7,220.79
60	17 \$697.74	28 \$4,566.97	14 \$3,398.99	7 \$11,096.53	7 \$3,959.80	9 \$13,406.85	41 \$11,740.44	123 \$7,274.28
65	15 \$473.95	8 \$6,676.24	5 \$2,828.03	2 \$16,245.13	1 \$10,016.80	5 \$16,614.99	6 \$12,347.98	42 \$6,531.65
70 & Older	19 \$2,752.16	9 \$582.99	2 \$17,192.00	3 \$8,564.51	0 \$0.00	0 \$0.00	0 \$0.00	33 \$3,564.11
Total	2,271 \$2,126.24	2,243 \$3,848.41	1,128 \$5,491.20	680 \$7,300.75	466 \$8,860.77	345 \$10,390.84	281 \$10,448.10	7,414 \$4,757.10

Pension Administration Services, Inc.

Average Compensation Distribution by Nearest Age and Covered Service

ACTIVE EMPLOYEES - Everyone

Nearest Age	Nearest Completed Years of Service							Total
	1	5	10	15	20	25	30 & More	
20	926 \$1,612.00	183 \$3,281.22	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	1,109 \$1,887.44
25	1,916 \$1,817.24	1,039 \$3,663.74	29 \$5,458.54	0 \$0.00	0 \$0.00	0 \$0.00	0 \$0.00	2,984 \$2,495.56
30	1,131 \$1,882.80	1,483 \$3,875.49	510 \$6,056.37	32 \$8,460.15	0 \$0.00	0 \$0.00	0 \$0.00	3,156 \$3,560.29
35	815 \$1,979.39	1,101 \$3,687.50	850 \$6,504.70	320 \$8,414.56	13 \$10,361.91	0 \$0.00	0 \$0.00	3,099 \$4,527.11
40	537 \$2,130.82	820 \$3,847.83	714 \$5,399.08	623 \$8,535.22	276 \$10,391.72	16 \$8,722.90	0 \$0.00	2,986 \$5,518.93
45	368 \$2,914.37	572 \$3,509.36	518 \$4,867.92	526 \$7,186.24	599 \$9,584.87	292 \$10,249.69	6 \$9,443.75	2,881 \$6,307.63
50	247 \$2,984.43	355 \$4,656.60	340 \$4,918.78	329 \$5,943.57	449 \$8,916.23	596 \$10,856.53	210 \$11,925.19	2,526 \$7,520.28
55	131 \$3,375.73	211 \$3,974.58	195 \$3,871.48	170 \$5,550.15	182 \$6,874.21	278 \$9,678.96	609 \$11,915.00	1,776 \$7,982.78
60	51 \$2,348.37	98 \$5,434.20	57 \$5,402.24	50 \$5,450.96	43 \$4,717.55	39 \$12,399.33	246 \$12,190.10	584 \$8,421.21
65	48 \$4,474.43	54 \$3,416.53	18 \$7,416.28	4 \$9,741.32	6 \$7,982.39	11 \$19,086.67	21 \$17,361.46	162 \$7,371.37
70 & Older	89 \$1,384.62	52 \$1,461.10	10 \$7,351.21	5 \$6,395.39	4 \$9,122.85	4 \$16,522.55	17 \$22,490.17	181 \$4,362.50
Total	6,259 \$2,008.48	5,968 \$3,797.20	3,241 \$5,583.10	2,059 \$7,432.36	1,572 \$9,087.72	1,236 \$10,560.95	1,109 \$12,229.82	21,444 \$5,107.86

Pension Administration Services, Inc.

Average Accrued Benefit Distribution by Nearest Age, Sex and Status

Nearest Age	ACTIVE EMPLOYEES				INACTIVE, FULLY INSURED EMPLOYEES			
	Men		Women		Men		Women	
	Number	Avg Acc Ben	Number	Avg Acc Ben	Number	Avg Acc Ben	Number	Avg Acc Ben
20	502	\$387.16	607	\$604.04	0	\$0.00	0	\$0.00
25	1,709	\$750.84	1,275	\$936.08	0	\$0.00	1	\$592.52
30	1,934	\$1,315.24	1,222	\$1,527.99	1	\$2,633.59	2	\$2,673.92
35	2,019	\$1,689.63	1,080	\$2,002.76	26	\$2,533.77	29	\$2,586.22
40	2,025	\$2,188.50	961	\$2,342.39	94	\$2,704.61	72	\$2,773.06
45	1,966	\$2,671.24	915	\$2,729.03	247	\$2,702.01	154	\$2,659.57
50	1,795	\$3,252.83	731	\$3,169.86	269	\$2,950.75	187	\$2,765.00
55	1,351	\$3,797.03	425	\$3,425.45	318	\$3,017.02	187	\$2,882.70
60	461	\$3,815.91	123	\$3,319.55	165	\$2,974.59	63	\$3,000.30
65	120	\$2,110.22	42	\$2,254.19	38	\$2,641.93	19	\$2,774.92
70 & Older	148	\$1,564.27	33	\$948.05	33	\$2,622.14	13	\$2,407.70
Total	14,030	\$2,161.68	7,414	\$1,975.41	1,191	\$2,872.41	727	\$2,777.63

## SECTION VI

### EXPLANATION OF THE UNFUNDED ACCRUED LIABILITY

Although the accrued liability is often discussed, not very many people, other than actuaries, really understand the ins and outs of what it is. The accrued liability can be a fairly complicated concept to explain.

However, one can think of the accrued liability as the current value of benefits already earned including benefits that are already in pay status. The unfunded accrued liability is just the accrued liability less the market value of assets. Both of these numbers change depending on when they are measured and the accrued liability changes depending on the actuarial assumptions and method used to calculate it.

An active worker will earn the right to a future retirement benefit along with other future benefits such as disability and survivor benefits. The dollar amount of each of these benefits depends on the total amount of his earnings on which social security tax has been paid. When the valuation is performed, the worker's current pay is projected into the future (up to the wage base) until his retirement age and then the dollar amount of the various benefits that he may become entitled to in the future is calculated. As part of the valuation process a theoretical annual payment on behalf of this worker is calculated, known as the "normal cost". The normal cost is the theoretical annual payment that, if made each year during the worker's years of employment, would be sufficient to fund all of his future potential benefits. It is important to note that the normal cost is calculated separately for each worker and that it is not necessarily equal to the amount contributed each year by the employee and his employer.

The accrued liability for someone who is still working is calculated as the current value of all benefits that he might receive in the future, less the current value of his future normal costs (not the employee and employer contributions actually collected).

But more simply the accrued liability for an active worker can be approximated as the current accumulated value of all of his past normal costs (again, not employee and employer contributions actually collected).

For someone who is no longer working but is entitled to future benefits, the accrued liability is just the current value of all benefits that he might receive in the future and for someone who is currently receiving a benefit, the accrued liability is the current value of the benefits that are currently being paid and will continue into the future.

Having said all of this, perhaps a very simple example of something else that will illustrate the concept of the accrued liability for an active worker would be helpful.

Suppose you borrow \$12,000 from a good friend who is not going to charge you any interest and you promise to pay it back, all \$12,000, at once in 5 years. You plan to put a little bit aside each month and will keep the money in a box, not a bank and so your savings will not earn any interest. (This example has been simplified by not assuming any interest to be paid or earned but it works with interest too.) Five years is 60 months, so if you put exactly \$200 into the box each and every month you will have accumulated exactly \$12,000 in 5 years. Think of this \$200 payment as the normal cost as described above.

Now let's say that you don't put \$200 in the box a few times. After 3 years you should have made 36 payments of \$200 and there should be \$7,200 in the box. This \$7,200 represents the "accrued liability" associated with your efforts to save money after 3 years. But when you count the money in the box you find that there is only \$6,800. The amount that is actually in the box represents the "market value of assets" at that point in time. When we subtract the market value of assets from the accrued liability, we arrive at the "unfunded accrued liability", which in this example is \$400 ( $\$7,200 - \$6,800$ ). In other words, you have \$400 less than you would have if you had made each \$200 payment as was scheduled.

To follow the first definition of the accrued liability described above, we can calculate the current value of the future benefits as the value today of what you must pay in the future. This is still \$12,000, what you must pay in two more years. The current value today of what you should deposit in the future is 24 more payments of \$200 each, or \$4,800. We can now calculate the accrued liability as the value of what you need to pay in the future, less the value today of the remaining 24 month payments of \$200 each, which is \$7,200 ( $\$12,000 - \$4,800$ ). In this very simple example, the accrued liability is the same either way it is calculated.

Now the \$400 shortfall may not be a bad thing. Maybe you missed two payments because you had other more pressing expenses and the next month you plan to put \$600 in the box. If you do, your accrued liability will be \$7,400 (one more month will have gone by so it has increased by \$200) but the market value of assets will be \$7,400 and the unfunded accrued liability has gone away.

Some would think it best if you made all of your payments exactly on time so that at any time there was no unfunded accrued liability, but really, the most important thing to you is that at the end of 5 years there is exactly \$12,000 in the box. A problem comes up if for some reason, there is not enough money in the box to pay off the debt when it comes due. This is the danger of an unfunded accrued liability that does not decrease over time, or even worse, one that increases over time. To expand on our example, you could borrow more money each year (increasing the accrued liability with each loan) until you have borrowed so much that you simply don't earn enough money to put sufficient funds in the box to ever pay it off. This would be like increasing and increasing benefits in a retirement system without a clear-cut plan on how to pay for the increases.