# FEDERATED STATES OF MICRONESIA SOCIAL SECURITY ADMINISTRATION

ACTUARIAL VALUATION AS OF JANUARY 1, 2006

PREPARED BY: PACIFIC ACTUARIAL SERVICES OCTOBER 2006

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#### **SECTION I**

#### **FOREWORD**

This report contains the results of the tenth actuarial valuation of the Federated States of Micronesia Security Administration. The valuation was conducted as of January 1, 2006, and the results contained herein report costs applicable to the fiscal year ending December 31, 2006.

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. <u>Introduction</u>

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. Unfunded Accrued Liability, Funded Ratio, and Deficiency
- E. Discussion of the Unfunded Accrued Liability
- F. Comments and Suggestions to Manage 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, 2006 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 the year's data when possible. The valuation results presented are dependent on the accuracy of the worker and asset information.

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 Professionals and Actuaries, a Member of the American Academy of Actuaries and a Member of the College of Pension Actuaries.

Certified by:

Michael W. Spaid, F.C.A, A.S.A. Consulting Actuary

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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, and the deficiency.

The accrued liability represents the current value of benefits already earned, 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, 2006 the total accrued liability stood at \$262,187,000 and the market value of Trust assets was \$42,657,000, resulting in an unfunded accrued liability of \$219,530,000.

In addition, as of January 1, 2006 the estimated value of future employee contributions in excess of that needed to fund future benefits and system expenses was \$42,056,000. Once this is subtracted from the unfunded accrued liability this means that the deficiency is \$177,474,000. 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 experiencing negative investment returns for fiscal years 2001 and 2002 the Trust has realized positive returns beginning in 2003 with the Trust earning 9.44% during fiscal year 2005.

When discussing the funded status of a retirement system, a common 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 as of January 1, 2006 is 16%.

## 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 re-enter the workforce in the future, their benefits will then be included in the category of workers currently earning benefits.

	Accrued Liability and Market Value of Assets as of January 1		
Accrued Liability For:	2004	2006	
Workers Earning Benefits	\$ 139,405,000	\$ 148,638,000	
Retirees, Spouses, Children, and Disabled Workers Receiving Benefits	75,949,000	83,957,000	
Fully Insured Inactive Workers Entitled to a Future Benefit	24,893,000	29,592,000	
Total Accrued Liability	\$ 240,247,000	\$ 262,187,000	
Market Value of Assets	(37,347,000)	(42,657,000)	
Unfunded Accrued Liability	\$ 202,900,000	\$ 219,530,000	
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 percentage of the accrued liability is covered by the market value of assets.

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 employee and employer contribution rate of approximately 8.8% 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. It is important to note that because the current contribution rate is sufficient to cover future benefits that the unfunded accrued liability and total deficiency shown below do not exist because of current system provisions but are the result of prior benefits already earned.

	Determination of the Total		
	Deficiency as of January 1		
	2004	2006	
Total Accrued Liability	\$ 240,247,000	\$ 262,187,000	
Market Value of Assets	(37,347,000)	(42,657,000)	
Current Value of Excess Employee Contributions from Active Workers	(39,465,000)	(42,657,000)	
Total Deficiency*	\$ 163,435,000	\$ 177,474,000	

<sup>\*</sup>The current value of excess employee contributions from active workers includes an allowance for future system expenses.

#### 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 percentage of the accrued liability is covered by the market value of assets. The accrued liability is expected to increase from year to year as workers earn additional benefits and get closer to retirement age and in fact the accrued liability shown in this valuation is greater than that in the prior valuation.

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 and this report agrees 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. Therefore it is important that benefits are not increased until a long-term trend of increasing the funded ratio and decreasing the unfunded accrued liability has been realized.

#### F. Comments and Suggestions to Manage the Unfunded Accrued Liability

Benefit payments and administrative expenses exceeded the amount of contributions collected during fiscal year 2005, and continue to do so for fiscal year 2006. This puts the Administration in the position of having to dip into the Trust in order to meet its financial commitments. As the amount of benefit payments grow in the future it is possible that enough of the Trust will be spent that the actual corpus of the Trust will diminish enough that the dollar amount of investment income will also decrease significantly because there will be less money in the Trust on which to earn income. This could develop into a dangerous situation where the Trust becomes completely depleted. Because of this the Administration has asked that we include in this report means to limit the growth of benefit payments and the unfunded accrued liability.

The accrued liability is expected to increase from year to year and in fact the accrued liability has increased since the prior valuation. Because the unfunded accrued liability is simply the difference between the accrued liability and Trust assets, the size of the unfunded accrued liability can be limited in three ways; increase the return on invested assets, increase revenue through additional funding, and limit the growth of future benefit payments. We will only deal with the last two of these issues here because the topic of investment return is much better addressed with the Administration's investment advisors. We will first discuss ways that the Administration may increase revenue though additional funding and will then address ways to limit future benefit growth.

#### **Increasing Revenue**

Perhaps the most immediate source of additional revenue could come through an increase in the tax rate levied on workers, self-employed workers, and employers, but if this is to be seriously considered one must proceed with extreme caution. If the tax rate is increased too much it will further encourage both employees and employers to avoid paying the Social Security tax and this could have the result of actually decreasing the contributions collected. If the tax rate is increased, the increase should be large enough to boost the contributions collected to cover 115% to 120% of current benefit payments and administrative expenses. Based on the 2005 financial data it appears that an immediate increase in the tax rate from 6% to 7% would suffice and based on actual contributions collected during 2005 this would result in approximately \$14.2 million in total annual contributions collected (of course, the actual figure will depend on actual future covered payroll.) This increase should give the Administration some room to cover upcoming benefit payments which will most likely also increase in the future.

Another source of additional funding is to look directly to the FSM Federal Government for additional funds. Keeping in mind that the more money there is in the Trust the larger the potential dollar amount of investment return; the Federal Government could make a one-time investment in Social Security by allocating six months of benefit payments to the Trust, which currently would be approximately \$6 million. Alternatively or in addition to a single payment, some of the funding received through Compact II could be allocated to Social Security on an annual basis.

#### **Limiting Benefit Growth**

We understand that the Administration has drafted a bill that would add a fourth tier to the existing benefit structure. This proposed change will not affect those who are already in pay status but will limit future benefit payments to high wage earners while leaving the benefits for many workers unchanged. According to a benefit study completed in 2005, if implemented, this new benefit structure will immediately reduce the unfunded accrued liability and we endorse this very important change to the benefit structure.

The benefit paid to a surviving spouse is currently paid until the earlier of the date the spouse remarries or dies and is subject to the earnings test. Limiting the actual period that a benefit is paid to a surviving spouse under the age of 60, perhaps to the later of five years or the date the youngest surviving child of the deceased spouse turns 18, could also reduce the unfunded accrued liability as well as future benefit payments.

The Administration has asked us to explore the financial impact of increasing the age at which a worker is eligible for full, unreduced benefits to 65. Fully insured workers would be eligible for early retirement at age 60 with benefits reduced 2/3% for each month prior to age 65 that benefits commence. This means that at age 60 a worker could retire and receive a benefit equal to 60% of his or her benefit earned as of that date that would otherwise be payable at age 65. Those who choose to retire prior to age 65 and continue to work would not be subject to the Earnings Test until they reach 65 and would continue to be subject to Social Security taxes with their benefit adjusted January 1 of each year following their early retirement to reflect their additional covered wages. The following is an example of how the benefit would be calculated for someone who had earned an annual benefit of \$3,000 that would otherwise be payable at age 65, elects early retirement on January 1 when he turns 60, and then continues to work until age 65, earning \$12,000 each year. His initial annual benefit beginning at age 60 would be 60% (100% minus 2/3% per month for 60 months) of the unreduced benefit he could receive at age 65 so his initial annual early retirement benefit beginning at age 60 would be \$1,800. We will assume that under the current benefit structure he will earn an additional annual benefit payable at age 65 equal to 2% of \$12,000, or \$240, each year that he continues to work until age 65. Each of these increments will then be subject to the appropriate adjustment factor depending on when they start to be paid.

Benefit paid	Adjustment	Benefit Increase	
<u>From</u>	<u>Factor</u>	Effective January 1	Total Benefit
Age 60 to 61	0.60	\$ 1,800 (initial benefit)	\$1,800 (initial benefit)
Age 61 to 62	0.68	163	1,963
Age 62 to 63	0.76	182	2,145
Age 63 to 64	0.84	202	2,347
Age 64 to 65	0.92	221	2,568
Age 65 on	1.00	240	2,808

We have estimated that these changes in the retirement age and benefit structure would reduce the unfunded accrued liability by approximately \$41 million and increase the funded ratio to 19%.

# **SECTION III**

# TRUST ASSETS

# A. <u>Statement of Net Assets</u>

<u>ASSETS</u>		12/31/2004		12/31/2005
Cash and equivalents Investments, at fair value General receivables Accrued interest receivable Advances Prepaid expenses Fixed assets, net	\$	1,789,785 35,855,045 1,979,938 167,605 5,941 2,705 91,221	\$	2,873,476 37,809,060 1,813,151 144,007 9,708 3,600 79,944
Total Assets	\$_	39,892,240	\$_	42,732,946
<u>LIABILITIES</u>				
Accounts payable – general Taxes/personnel benefits payable Accrued PCT monthly fees  Total Liabilities	\$	76,807 20,666 12,930 110,403	\$ _	42,569 19,604 13,711 75,884
NET ASSETS				
Held in trust for retirement, disability and survivors' benefits		39,781,837		42,657,062
Total liabilities and net assets	\$_	39,892,240	\$_	42,732,946

# B. Statement of Changes in Net Assets

	12/31/2004	12/31/2005
Additions: Contributions	\$ 12,275,901	\$_12,129,796
Investment income: Net increase in the fair value of investments Miscellaneous income	2,351,940 52,002	3,648,998 65,924
Total investment income	2,403,942	3,714,922
Total additions	14,679,843	15,844,718
Deductions:		
Benefit payments	11,309,808	12,006,929
Refund contributions	11,430	22,120
Administrative expenses, net	923,670	940,444
Total deductions	12,244,908	12,969,493
Change in net assets	2,434,935	2,875,225
Net assets at beginning of year	37,346,902	39,781,837
Net assets at end of year	\$ 39,781,837	\$ 42,657,062

## C. <u>Trust Asset History</u>

	Beginning of						
Fiscal	Year Market	Prior Year		Trust Gain	Other	Benefit	Administrative
Year End	Value of Assets	<u>Adjustment</u>	<b>Contributions</b>	or (Loss)	Income	<b>Payments</b>	<b>Expenses</b>
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	39,491,014		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		12,275,901	2,351,940	52,002	(11,321,238)	(923,670)
12/31/2005	39,781,837		12,129,796	3,648,998	65,924	(12,029,049)	(940,444)
12/31/2006	42,657,062						

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

Fiscal		
Year End	<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%	Return for 9 months
12/31/2001	-10.82%	
12/31/2002	-8.32%	
12/31/2003	12.55%	
12/31/2004	6.43%	
12/31/2005	9.44%	

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

5 Year Average	1.40%
9 3/4 Year Average	6 28%

#### **SECTION IV**

# ACTUARIAL ASSUMPTIONS, AND SUMMARY OF KEY SYSTEM FEATURES

#### A. <u>Actuarial Assumptions</u>

**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: Salaries are assumed to increase 4.5% per year into the future

Mortality: 1984 Unisex Pension Mortality Table. For participants not yet in

receipt of a benefit, males are considered to be three years older than they actually are with no adjustment for females. For beneficiaries in receipt of benefits, males are considered to be five years older than they actually are and females are considered to be one year 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 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.

	Male Spouse Remarry within 2 years		Female Spouse Remarry within 6 years	
		Does not		Does not
Age	Remarry	Remarry	Remarry	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 60% of female spouses and 5% of male spouses will receive a survivor's benefit. In addition, 40% of female spouses and 90% of male spouses will also be entitled to a retirement benefit based on their own earnings record, but the survivor's benefit will be 15% greater than this 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 that 80% are assumed to leave in their third year of employment. It is assumed that 80% of workers who are not citizens of the Federated States of Micronesia leave when they become disabled or retire. It is also assumed that 80% of the surviving spouses and children of deceased foreign citizens leave after the worker dies. These surviving spouses and children are also assumed to not be citizens of the Federated States of Micronesia.

## 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 two years, are not currently indicated in the data files supplied by the Administration as deceased, disabled, retired, having received a lump sum 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 greatest of the salaries earned during the last two 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, 12-76, and 14-37.

#### 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 the quarter, up to \$5,000 taxable per quarter.

Self-employed with no employees - 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 or 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.

#### Payment to Foreign Citizens residing outside the FSM

Payments to citizens and nationals of the Republic of Palau, the Republic of the Marshall Islands and the United States shall be made as if they were citizens or nationals of the Federated States of Micronesia as long as those nations give citizens and nationals of the Federated States of Micronesia reciprocal treatment. For citizens and nationals of other countries, a lump sum payment equal to total worker paid contributions as of the date the worker turned age 60, became disabled, or died. The lump sum payment is reduced by any payments already made to the employee, surviving spouse or child before the lump sum is paid.

#### 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, 2006 Valuation

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

			Average	
	Number of		Completed Years	Average Valuation
Worker	Workers	Average Age	of Service	Compensation
Men	13,736	40.57	10.04	\$ 5,572
Women	7,854	37.32	8.36	\$ 4,765
Total	21,590	39.39	9.43	\$ 5,279

The average annual accrued basic benefit is as of January 1, 2006 and is based on total remuneration for which contributions have been made through December 31, 2005.

Status	Number	Average Age	Average Annual Accrued Basic Benefit
Active	21,590	39.39	\$ 2,191
Inactive and Fully Insured	2,017	51.62	\$ 2,898
Retired	2,185	70.04	\$ 3,140
Disabled	218	54.92	\$ 3,348
Spouse	1,795	64.57	\$ 1,722
Child	2,208	14.95	\$ 436

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

# **B.** Compensation Summary

Average Compensation Distribution by Nearest Age and Covered Service

ACTIVE EMPLOYEES - Men

Nearest	Nearest Completed Years of Service							
Age	1	5	10	15	20	25	30 & More	Total
20	397	48	0	0	0	0	0	445
	\$1,574.29	\$3,111.29	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,740.08
25	1,048	506	28	0	0	0	0	1,582
23	\$1,921.46	\$3,555.48	\$4,938.82	\$0.00	\$0.00	\$0.00	\$0.00	\$2,497.50
30	725	854	287	21	0	0	0	1,887
30	\$2,218.87	\$3,910.95	\$5,854.47	\$8,440.96	\$0.00	\$0.00	\$0.00	\$3,606.85
35	494	709	524	210	7	0	0	1,944
33	\$2,261.51	\$3,469.71	\$6,821.99	\$8,550.26	\$8,612.04	\$0.00	\$0.00	\$4,633.63
40	321	574	453	415	149	9	0	1,921
40	\$2,692.47	\$3,550.91	\$5,797.60	\$8,611.04	\$10,075.39		\$0.00	\$5,565.91
45	227	443	328	364	350	177	7	1,896
43	\$2,827.08	\$3,034.40	\$4,481.66	\$7,492.63	\$10,771.10	\$10,961.95	\$16,103.70	\$6,332.37
50	158	261	245	270	321	417	125	1,797
30	\$3,041.98	\$3,353.21	\$5,372.96	\$6,760.28	\$8,569.48		\$13,378.38	\$7,597.76
55	78	162	127	143	173		482	1,411
33	\$4,455.23	\$3,465.08	\$4,369.95	\$5,107.06	\$8,070.43	\$9,645.51	\$13,643.44	\$8,886.79
60	31	74	66	52	46		261	588
00	\$6,455.55	\$3,488.08	\$4,175.17	\$5,310.52	\$5,478.62	\$8,050.87	\$13,709.12	\$9,025.50
65	17	37	17	9	5	6	27	118
03	\$2,543.26	\$3,692.07	\$8,089.86	\$9,848.17	\$7,898.27	\$8,179.50	\$25,939.39	\$10,126.57
70 & Older	53	55	10	3	7	3	16	147
70 & Older	\$458.47	\$1,965.41	\$4,916.99	\$3,539.75	\$8,668.89	\$4,736.96	\$21,360.55	\$4,141.82
Total	3,549	3,723	2,085	1,487	1,058	916	918	13,736
	\$2,244.68	\$3,510.66	\$5,670.58	\$7,535.10	\$9,291.66	\$10,550.63	\$14,140.93	\$5,572.28

# **B.** Compensation Summary (Continued)

Average Compensation Distribution by Nearest Age and Covered Service

ACTIVE EMPLOYEES - Women

Nearest	Nearest Completed Years of Service								
Age	1	5	10	15	20	25	30 & More	Total	
20	469	51	0	0	0	0	0	520	
	\$1,754.45	\$2,823.37	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,859.29	
25	846	522	11	0	0	0	0	1,379	
23	\$1,998.16	\$3,821.11	\$6,846.30	\$0.00	\$0.00	\$0.00	\$0.00	\$2,726.88	
30	388	634	208	11	0	0	0	1,241	
30	\$2,694.41	\$4,324.80	\$6,029.71	\$7,726.74	\$0.00	\$0.00	\$0.00	\$4,130.97	
35	244	349	310	206	7	0	0	1,116	
33	\$2,600.99	\$3,456.37	\$6,080.14	\$7,616.44	\$9,172.90		\$0.00	\$4,801.93	
40	174	274	237	217	108	2	0	1,012	
40	\$1,984.71	\$3,061.45	\$5,167.69	\$8,067.13	\$10,183.85	\$13,721.29	\$0.00	\$5,224.10	
45	140	172	153	161	184	121	3	934	
43	\$2,146.60	\$3,429.51	\$4,625.10	\$6,886.75	\$9,423.16	\$10,427.94	\$17,444.72	\$6,161.44	
50	95	122	133	105	118	169	80	822	
50	\$3,012.34	\$3,777.89	\$4,288.27	\$5,671.92	\$7,149.43	\$10,487.45	\$12,654.94	\$6,741.33	
55	63	72	65	57	47	59		538	
33	\$2,485.87	\$2,997.05	\$3,583.40	\$5,919.71	\$8,083.39	\$9,928.16	\$10,539.59	\$6,975.56	
60	32	25	27	17	15	10	70	196	
00	\$2,030.03	\$5,955.39	\$2,352.54	\$7,592.77	\$6,449.21	\$12,685.90	\$11,373.16	\$7,276.33	
65	21	11	2	1	0	_	7	45	
	\$1,243.79	\$1,343.92	\$8,512.53	\$29,652.60	\$0.00	\$25,014.50	\$18,676.11		
70 & Older	31	13	2	4	1	0	0	51	
	\$1,558.50	\$1,473.72	\$18,780.09	\$8,120.89	\$21,500.00	\$0.00	\$0.00	\$3,117.95	
Total	2,503	2,245	1,148	779	480	364	335	7,854	
	\$2,165.96	\$3,730.53	\$5,285.78	\$7,236.85	\$8,832.75	\$10,574.91	\$11,450.78	\$4,765.34	

# **B.** Compensation Summary (Continued)

Average Compensation Distribution by Nearest Age and Covered Service

ACTIVE EMPLOYEES - Everyone

Nearest	Nearest Completed Years of Service								
Age	1	5	10	15	20	25	30 & More	Total	
20	866	99	0	0	0	0	0	965	
	\$1,671.86	\$2,962.96	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,804.31	
25	1,894	1,028	39	0	0	0	0	2,961	
23	\$1,955.72	\$3,690.36	\$5,476.83	\$0.00	\$0.00	\$0.00	\$0.00	\$2,604.33	
30	1,113	1,488	495	32	0	0	0	3,128	
30	\$2,384.64	\$4,087.28	\$5,928.10	\$8,195.45	\$0.00	\$0.00	\$0.00	\$3,814.78	
35	738	1,058	834	416	14	0	0	3,060	
33	\$2,373.75	\$3,465.31	\$6,546.24	\$8,087.84	\$8,892.47	\$0.00	\$0.00	\$4,695.01	
40	495	848	690	632	257	11	0	2,933	
40	\$2,443.68	\$3,392.76	\$5,581.24	\$8,424.28	\$10,120.96	\$10,539.00	\$0.00	\$5,447.97	
45	367	615	481	525	534	298	10	2,830	
43	\$2,567.50	\$3,144.90	·	\$7,306.83	\$10,306.64	\$10,745.12	\$16,506.01	\$6,275.95	
50	253	383	378	375	439	586	205	2,619	
30	\$3,030.85	\$3,488.48	\$4,991.31	\$6,455.54	\$8,187.78	\$11,100.64	\$13,096.06	\$7,328.96	
55	141	234	192	200	220	305	657	1,949	
33	\$3,575.30	\$3,321.07	\$4,103.67	\$5,338.67	\$8,073.20	\$9,700.19	\$12,816.69	\$8,359.22	
60	63	99	93	69	61	68	331	784	
00	\$4,207.67	\$4,111.14	\$3,646.02	\$5,872.81	\$5,717.29	\$8,732.50	\$13,215.11	\$8,588.21	
65	38	48	19	10	5	9	34	163	
	\$1,825.13	\$3,153.95	\$8,134.35	\$11,828.61	\$7,898.27	\$13,791.17	\$24,444.01	\$9,130.62	
70 & Older	84	68	12	7	8	3	16	198	
70 & Older	\$864.43	\$1,871.41	\$7,227.51	\$6,157.54	\$10,272.78	\$4,736.96	\$21,360.55	\$3,878.10	
Total	6,052	5,968	3,233	2,266	1,538	1,280	1,253	21,590	
Total	\$2,212.12	\$3,593.37	\$5,533.94	\$7,432.57	\$9,148.44	\$10,557.54	\$13,421.70	\$5,278.73	

## C. Accrued Benefit Detail

Average Accrued Benefit Distribution by Nearest Age, Sex and Status

		ACTIVE EN	MPLOYEES		INACTIVE, FULLY INSURED EMPLOYEES			
Nearest	Men		Women		Men		Women	
Age	Number	Avg Acc Ben	Number	Avg Acc Ben	Number	Avg Acc Ben	Number	Avg Acc Ben
20	445	\$411.96	520	\$453.99	0	\$0.00	0	\$0.00
25	1,582	\$802.43	1,379	\$929.94	0	\$0.00	0	\$0.00
30	1,887	\$1,331.70	1,241	\$1,550.55	0	\$0.00	3	\$1,697.70
35	1,944	\$1,802.10	1,116	\$2,016.11	42	\$2,640.11	29	\$2,591.56
40	1,921	\$2,240.80	1,012	\$2,302.48	83	\$2,714.87	78	\$2,802.15
45	1,896	\$2,696.87	934	\$2,753.20	222	\$2,734.31	115	\$2,792.74
50	1,797	\$3,304.18	822	\$3,097.05	295	\$2,887.68	205	\$2,867.02
55	1,411	\$4,006.58	538	\$3,468.28	339	\$3,069.33	213	\$2,917.45
60	588	\$4,090.28	196	\$3,406.67	198	\$3,142.30	93	\$3,025.43
65	118	\$3,055.08	45	\$2,105.68	32	\$3,132.36	16	\$2,604.85
70 & Older	147	\$1,646.57	51	\$995.09	43	\$2,522.70	11	\$2,363.86
Total	13,736	\$2,292.18	7,854	\$2,014.16	1,254	\$2,923.84	763	\$2,854.76

#### **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 simply 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. 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 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 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. However 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.