VALUATION OF THE MILITARY RETIREMENT FUND

SEPTEMBER 30, 2023

DoD Office of the Actuary

January 2025

CONTENTS

SUPPLEMENTARY INFORMATION

ACTUARIAL CERTIFICATION

This report on the valuation of the Military Retirement Fund as of September 30, 2023, has been prepared in accordance with all applicable Actuarial Standards of Practice. We have relied upon information maintained by other Department of Defense activities. The purpose of the actuarial valuation documented in this report is to calculate actuarial liabilities and funding amounts to meet the requirements of Chapter 74, Title 10, United States Code. Use of this report for other purposes may not be appropriate.

We have performed the valuation using methods and assumptions approved by the DoD Board of Actuaries. The annual, long-term economic assumptions are a 2.50% rate of inflation, a 2.75% across-the-board salary increase, and a 4.00% interest rate.

Actuarial methods and assumptions used in the preparation of this report are reasonable, and the valuation results present a fair picture of the financial condition of the Military Retirement Fund.

Underlying data, methods, and assumptions used to calculate actuarial liabilities and funding amounts are provided in the "Technical Reference to the FY 2023 Military Retirement Fund Valuation."

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USE OF REPORT

Intended Audience:
- Those seeking actuarial or financial information about the Military Retirement Fund (MRF or Fund).

Report Limitations:
- Actual experience might differ from the valuation assumptions.

- Refer to the *General Information and Key Results* section for a high-level summary.

- Data and assumptions used to determine actuarial liabilities and funding amounts are provided in appendices located in the "Technical Reference to the FY 2023 Military Retirement Fund Valuation Report".

- Figures in tables may not add exactly due to rounding.

- References to "active duty" personnel throughout the report also include full-time support reservists. Similarly, references to "reservists" or "selected reservists" exclude full-time support reservists.

ABBREVIATIONS

Board	DoD Board of Actuaries
BRS	Blended Retirement System
COLA	Cost-of-Living Adjustment
CSB/REDUX	Career Status Bonus Retirement System combined with the REDUX System
DFAS	Defense Finance and Accounting Service
DMDC	Defense Manpower Data Center
DoD	U.S. Department of Defense
FY	Fiscal Year
MRF	Military Retirement Fund
NCP	Normal Cost Percentage
OACT	DoD Office of the Actuary
OMB	U.S. Office of Management and Budget
PACT	Promise to Address Comprehensive Toxics
P.L.	Public Law
SBP	Survivor Benefit Plan
SOA	Society of Actuaries
UFL	Unfunded Liability
U.S.C.	United States Code
VA	U.S. Department of Veterans Affairs

GENERAL INFORMATION AND KEY RESULTS

1. **Name of Plan:**
   Military Retirement Fund

2. **Name and Address of Plan Sponsor:**
   Department of Defense
   1400 Defense Pentagon
   Washington, DC 20301-1400
   Website: https://www.defense.gov/

3. **Type of Plan:**
   Defined Benefit with a Defined Contribution component under the BRS (not part of the MRF)

4. **Establishment of Funding Arrangement:**
   Chapter 74 of Title 10, U.S.C.

5. **Administrative Costs:**
   Not borne by the Plan

6. **Funding Arrangement:**
   Trust Fund

7. **Actuarial Cost Method:**
   Aggregate Entry-Age Normal

8. **Oversight:**
   DoD Board of Actuaries. The Board advises the Secretary of Defense on actuarial matters needed to make budgetary determinations to finance liabilities of the MRF on an actuarially sound basis. The current members of the Board (as of this valuation report date) are:

   Marcia A. Dush, Chairperson
   John H. Moore
   Michael E. Clark

9. **Plan Participant Information:**

	Participants (in 000s)	Annualized Pay ($ in billions)
Active Duty and Full-time Reservists:	1,402	$74.13
Selected Drilling Reservists:	675	$9.05
Non-Selected Reservists – w/20 years:	174	-N/A-
Nondisabled Retirees:	1,915	$67.97
Disabled Retirees:	138	$2.49
Surviving Families:	313	$5.23

GENERAL INFORMATION AND KEY RESULTS (Cont.)

10. Valuation Input Data:

Produced from files maintained by the Defense Manpower Data Center (DMDC) and made available to the Beacon Analytic Environment

11. Retirement Criteria:

A. Nondisabled Retirement from Active Duty – Immediate, after 20 years of service

B. Disabled Retirement – Immediate, generally with no years of service requirement

C. Nondisabled Retirement from Reserve Duty – Age 60 (or earlier in some cases) after 20 years of creditable service

12. Actuarial Assumptions:

A. Economic:
(Annual Rates)

1) Inflation 2.50%
2) Salary 2.75%
3) Interest 4.00%

B. Demographic:

1) Mortality and other assumptions: Based on MRF experience.
2) Percent of a Typical New Entrant Cohort Serving 20 Or More Years:
Full-time (FT) personnel: 19% Part-time (PT) personnel: 16%

13. Accounting Results During Fiscal Year 2023:
($ in billions)

A. Benefits paid to participants	$74.7
B. Contributions from Services	$28.1
C. Treasury Normal Cost Contribution	$10.6
D. Treasury Amortization Payment	$120.4
E. Investment Income	$55.1

14. Actuarial Results at End of Fiscal Year 2023:
($ in billions)

A. Present Value of Future Benefits	$2,559.7
B. Actuarial Accrued Liability	$2,129.6
C. Actuarial Value of Assets	$1,418.7
D. Unfunded Accrued Liability	$710.9
E. Funded Ratio (C./B.)	67%

15. NCPs for Fiscal Year 2025:

	DoD	Treasury	Total
Full-time	26.6%	30.8%	57.4%
Part-time	21.5%	9.8%	31.3%

SUMMARY OF CHANGES

At the July 2023 meeting, the Board approved the following changes for the September 30, 2023, valuation. For access to the official transcript of the meeting, follow this link: https://actuary.defense.gov/External-Links/.

Changes in Actuarial Assumptions

VA Parameters and Disability Rates

The Board approved updated VA parameters and disability rates due to expected increased VA disability claims under the Promise to Address Comprehensive Toxics (PACT) Act. For new nondisabled retirees, the VA parameters were adjusted such that the annual increase in concurrent receipt outlays in an open group projection is 10% in 40 years. For both active and reserve, permanent and temporary disability retirement rates were increased by 10%. These changes led to a 3.3% and 1.4% decrease in FY 2025 full-time and part-time DoD NCPs respectively. There was an increase in the 9/30/2023 accrued liability of $0.4 billion due to the change in disability rates. See Technical Reference Appendix F.

Reserve Rates

The Board approved updated assumptions and methods used to calculate reserve retirement rates and blow-up factors, and the elimination of the reserve career points adjustment factors. These changes resulted in no change (to the 3rd decimal place), and a 0.1% decrease in FY 2025 full-time and part-time DoD NCPs respectively. Additionally, there was a decrease in the 09/30/2023 accrued liability of $16.8 billion (0.8%). See Technical Reference Appendix H

Mortality Improvement Factors

The Board approved updated mortality improvement factors incorporating 2021 and 2022 data with 0% and 25% weighting respectively. Additionally, the Board approved the use of military retiree long-term rates of mortality improvement for survivors and the elimination of COVID loads. These changes resulted in decreases of 0.1% and 0.2% in FY 2025 full-time and part-time DoD NCPs respectively, and a decrease in the 9/30/2023 accrued liability of $33.8 billion (1.6%).
See Appendix J.

SBP Parameters

The Board approved updated SBP parameters using FY 2021 experience for the election rates and premium reduction factors for new retirees, and parameters modeling survivor benefits for continuing retirees. These changes resulted in an increase of 0.4% for both full-time and part-time FY 2025 DoD NCPs and a decrease in the 09/30/2023 accrued liability of $1.4 billion (0.1%).
See Appendix F.

SUMMARY OF ANTICIPATED CHANGES

At the July 2024 meeting, the Board approved the following changes for the September 30, 2024, valuation. For access to the official transcript of the meeting, follow this link: https://actuary.defense.gov/External-Links/.

Changes in Actuarial Assumptions

VA Parameters

The Board approved updates to full and partial VA offset parameters for new nondisabled retirees. The result is a 2.4% decrease and 0.4% increase to the FY 2026 full-time and part-time DoD NCPs, respectively, and an increase in the 09/30/2023 accrued liability of $1.5 billion (less than 0.1%). See Technical Reference Appendix F.

Mortality Improvement Factors

The Board approved updated mortality improvement factors, adding 2023 military data for both retirees and survivors, and an increase in the ultimate female percentage from 15% to 20% in the male/female adjustment factors. The result is a 0.2% increase in both full-time and part-time FY 2026 DoD NCPs and an increase in the 09/30/2023 accrued liability of $28.4 billion (1.3%). See Technical Reference Appendix J.

New Entrant Distribution

The Board approved updates to the experience period of the new entrant distribution from FYs 15-19 to FYs 21-23. The result is a 0.1% decrease and 0.4% increase to the FY 2026 full-time and part-time DoD NCPs, respectively, and an increase in the 9/30/2023 accrued liability of $1.1 billion (less than 0.1%). See Technical Reference Appendices G and H.

Disability Factors

The Board approved updates to the experience period of the disability benefit multiplier factors from FYs 10-11 for active duty and FYs 09-10 for reserve duty to FYs 21-23. Additionally, the Board approved combining the factors for active and reserve, and permanent and temporary disability. The result is a 0.1% increase and 0.3% increase to the FY 2026 full-time and part-time DoD NCPs, respectively, and an increase in the 09/30/2023 accrued liability of $2.7 billion (0.1%). See Technical Reference Appendix F.

Survivor and Spouse Mortality Rates

The Board approved updates to the experience period underlying survivor death rates from FYs 14-15 to FYs 20, 22 and 23. Additionally, the Board approved updates to non-survivor spouse death rates from a standard actuarial mortality table to military-specific survivor death rates with an age adjustment. The result is a 0.1% increase and no change to the FY 2026 full-time and part-time DoD NCPs, respectively, and an increase in the 09/30/2023 accrued liability of $1.0 billion (less than 0.1%). See Technical Reference Appendix I.

VALUATION OF THE MILITARY RETIREMENT FUND

INTRODUCTION

The MRF provides payments for retirement from active duty and reserves, disability retirement, and survivor benefits. A detailed description of benefits can be found in Technical Reference Appendix A.

Chapter 74 of Title 10, U.S.C. established an aggregate entry-age normal cost funding method for the MRF starting October 1, 1984. Under this law, DoD pays the normal cost and the Treasury makes payments to amortize the unfunded liability and any gains or losses, and the normal cost for Concurrent Receipt benefits.

This law also established an independent three-member DoD Retirement Board of Actuaries to review valuations of the MRF; determine the method of amortizing unfunded liabilities; report annually to the Secretary of Defense; and report to the President and the Congress on the status of the MRF at least once every four years. The current Board members are Marcia Dush, John Moore, and Mike Clark.

DATA AND PROCEDURE

Valuation input data is produced from files maintained by DMDC and made available to the Beacon Analytic Environment. Retiree and survivor input data comes from pay files submitted by DFAS. Active duty data comes from the Active Duty Military Personnel Master File, and reserve data comes from the Reserve Component Common Personnel Data System Master File submitted by the Services. OACT reviews the data for reasonableness and consistency against figures provided by the DoD Comptroller and relies on the file suppliers for accuracy and comprehensiveness.

Where applicable, dollar amounts include the subsequent January 1st increase in basic pay. These totals are summarized in Table 1.

TABLE 1

Initial Accounting Figures
($ in billions)

	2023	2022
Total Active Duty Personnel + Full-Time Reservists	1,402,290	1,433,234
Total Annualized Basic Pay	$74.13	$71.98
Non-BRS	613,718	685,998
Total Annualized Basic Pay	$42.88	$44.24
BRS	788,572	747,236
Total Annualized Basic Pay	$31.25	$27.74
Total Selected Drilling Reservists	675,047	681,979
Total Annualized Basic Pay	$9.05	$8.62
Non-BRS	343,744	385,823
Total Annualized Basic Pay	$5.86	$5.98
BRS	331,303	296,156
Total Annualized Basic Pay	$3.19	$2.63
Total Non-Selected Reservists (with 20 years)	173,902	180,712
Total Annualized Basic Pay	-N/A-	-N/A-
Total Number of Non-disabled Retirees	1,914,874	1,907,227
Total Annualized Retired Pay	$67.97	$62.13
Total Number of Disabled Retirees	138,359	136,468
Total Annualized Retired Pay	$2.49	$2.23
Total Number of Surviving Families	312,532	319,238
Total Annualized Survivor Annuities	$5.23	$4.91

* Figures include USCG.

Population and pay projections are generated by an actuarial projection model (GORGO[1]). GORGO is a deterministic model, which assumes the average outcome will occur annually.

Active duty and reserve data is grouped into cells by age nearest birthday and number of years of service, and each cell contains the counts and average basic pay. Retiree and survivor data is grouped into cells by age, and each cell contains the counts and annualized retired pay or survivor annuity. Data is shown in Technical Reference Appendix C.

The starting populations are projected into the future. Each year, personnel are moved from one population category to another (e.g., from active to retired, or dropped from the system altogether) by means of decrements such as withdrawal, nondisability retirement, temporary disability,

[1] GORGO was named after a monster featured in a 1961 British science fiction movie based on a variation of *Godzilla*.

permanent disability, transfer, and death with and without survivors. The basic pay scale is increased at the valuation across-the-board salary increase assumption. Basic pay is also increased by promotion and merit increases. Retired pay and survivor annuities are increased by the valuation COLA assumption each year for retirees and survivors who receive a full COLA. At the end of each year, the counts and the amounts paid in basic pay and benefits are saved, and the population is aged. After 100 years, the present values of the series of basic pay and benefit payments are calculated using the valuation interest rate. Because no new entrants come into the system, the projection is said to be "closed group."

There is also an option in GORGO for an "open group" projection in which new entrants are added each year to meet DoD projected end strengths. Results of an open group projection of the MRF are in Technical Reference Appendix K.

Table 8 shows an open group projection of the flow of plan assets over the next 20 years, including the total basic payroll, the normal cost contributions, the payments to amortize the unfunded liability, investment income, fund disbursements, and the fund balance. All these items are discussed in detail throughout the text of this report and the Technical Reference. An overview of the GORGO process is illustrated in Figure 1.

FIGURE 1

GORGO PROCESS OVERVIEW

Long-term annual economic assumptions, i.e., the rate of inflation, the across-the-board pay increase, and the valuation interest rate, were decided upon by the Board after extensive analysis of the current environment and future expectations. A discussion of these assumptions is in Technical Reference Appendix D.

The decrement rates and other non-economic assumptions can be categorized as follows:

1. Active duty decrement rates
2. Retiree and survivor decrement rates
3. Drilling and non-drilling (with 20 good years) reserve decrement rates
4. Actuarial projection model parameters
5. Mortality improvement factors

The decrement rates and GORGO parameters are based on military-specific experience. The rates and descriptions of how they were derived are in Technical Reference Appendices G through J. The actuarial projection model parameters, dealing with such matters as the survivor benefit elections, premium deductions, and member/beneficiary age differences, are in Technical Reference Appendix F.

In general, the valuation results are most sensitive to changes in the long-term economic and retention assumptions. Table 6 provides an analysis of sensitivity to the long-term interest and withdrawal rate assumptions.

ASSETS

The assets of the MRF are invested in special-issue Treasury obligations bearing interest at rates determined by the Secretary of the Treasury, taking into consideration current market yields for outstanding marketable U.S. obligations of comparable maturities. Each security issued to the Fund mirrors a security that has been issued to the public, i.e., it has the same maturity date, coupon rate, and other security-specific characteristics. The "mirrored" security may have been issued recently or at any time in the past. Under current procedures adopted by Treasury, the Fund's investment manager is permitted to redeem long-term special issue securities at any time before maturity for their fair market value, which is based on the public issue bid price with the same maturity date, coupon rate, and other security-specific characteristics. However, Treasury policy encourages a buy-and-hold approach considering the needs of the Fund in determining the maturities of securities purchased.

The investment manager follows the asset investment strategy approved by the DFAS Investment Board at their semiannual meetings. The current strategy is to invest the assets to generate sufficient cash to fund benefit payments and expenses as they come due. An expected average maturity of future investments of 20 years is targeted, taking into consideration current and expected economic conditions. Most purchases are in Treasury Inflation-Protected Securities (TIPS), which hedge most of the inflationary pressures while minimizing liquidity risks to the Fund.

For purposes of determining the unfunded liability, the assets of the Fund are valued using the amortized cost method. Under this method, the yield to maturity of a security valued at any point in time is equal to the yield to maturity at the time of purchase. In the valuation of the MRF, the amortized cost value is referred to as the "actuarial value of assets," which is determined by amortizing premium and discount over the life of the securities. The total investment return includes the interest coupons received, the change in the amortized cost value during the year, and

the inflation compensation accrued from the holdings of TIPS. The actuarial value of assets used in the determination of the unfunded liability includes the "accrued interest," which is the amount of the next interest coupon payment that has accrued since the date of the last coupon payment. Table 2 presents a statement of the actuarial value of assets. Table 3 presents a statement of changes in the actuarial value of assets.

TABLE 2

DEPARTMENT OF DEFENSE
MILITARY RETIREMENT FUND
STATEMENT OF ACTUARIAL VALUE OF ASSETS
($ in millions, plan year-end September 30)

	2023	2022
Assets		
1) Investments, at book value:		
U.S. Government securities[1]	$1,410,159	$1,271,997
2) Accounts receivable:		
a) Accrued interest[2]	$6,923	$6,376
b) Due from military retirees or their survivors	$187	$160
c) Intragovernmental	$696	$0
3) Cash ('Fund Balance with Treasury')	$708	$611
Actuarial value of assets (1 + 2 + 3)	$1,418,673	$1,279,144

[1] Book value is determined by 1) amortizing premium and discount over the life of the securities using the effective interest method and 2) including additional inflation compensation from TIPS. Additional adjustment made as a result of FY 2011 National Defense Authorization Act (P.L. 111-383) regarding retired pay date as follows:

	2023	2022
Investments, at book value (actual)	$1,404,294	$1,267,189
October Expenditures paid in September	$5,865	$4,808
Investments, at book value (adjusted)	$1,410,159	$1,271,997

[2] Includes accrued interest receivable and interest purchased.

TABLE 3

DEPARTMENT OF DEFENSE
MILITARY RETIREMENT FUND
STATEMENT OF CHANGES IN ACTUARIAL VALUE OF ASSETS
($ in millions, plan year-end September 30)

	2023	2022
1) Actuarial value of assets at beginning of plan year:	$1,279,144	$1,106,499
2) Investment income:		
a) Interest/Inflation	$59,261	$99,489
b) Net appreciation (depreciation) in book value of investments[1]	($4,187)	($6,354)
3) Contributions:		
a) From Services	$28,057	$26,009
b) Appropriation to amortize the unfunded liability	$120,438	$114,463
c) Appropriation for Treasury Normal Cost Contribution	$10,612	$10,569
4) Total additions (2 + 3):	$214,181	$244,176
5) Change in Accounts Receivable	$27	$0
6) Benefits paid to participants:	$74,680	$71,532
Actuarial value of assets (1 + 4 + 5 - 6):	$1,418,673	$1,279,144

1. Investments bought, sold and held during the plan year ended September 30 Appreciation/(Depreciation) in value as follows:

	2023	2022
Amortized discount	$3,074	$911
Amortized premium	($7,261)	($7,265)
Gain (loss) on sale *	$0	$0
	($4,187)	($6,354)

* Gain/(Loss) on sale is only shown for informational purposes and is not included in the net appreciation (depreciation).

NORMAL COST

The aggregate entry-age NCP is the level percentage of basic pay that is contributed over the active career of a typical group of new entrants to pay for the future retirement and survivor benefits of that group. It is determined using a new entrant cohort as the starting population in a GORGO projection. Their basic pay and benefits are projected for 100 years and then discounted back to the valuation date. Mathematically, an NCP is calculated by dividing the present value of future benefits by the present value of future basic pay for the entire cohort using the assumed interest rate.

Two separate NCPs are used for the valuation of the MRF—one for active duty personnel and full-time reservists (full-time), and one for part-time reservists (part-time). Full-time and part-time NCPs are calculated for each of the separate benefit formulas. Only full-time personnel are under the CSB/REDUX benefit formula.

Treasury pays the normal cost due to Concurrent Receipt benefits into the Fund at the beginning of each year. The NCPs are disaggregated in Table 4; DoD and Treasury NCPs are displayed separately in Table 5.

The FY 2024 Weighted NCPs in Table 4 are calculated using the NCP weighting factors (see Technical Reference Appendix E), along with BRS opt-in rates (see Appendix F). Due to federal budget deadlines, the NCPs used to determine the actual contributions to the Fund must be established in advance of implementation and may vary from those actually derived in a valuation.

TABLE 4

FY 2024 NORMAL COST AS A PERCENT OF BASIC PAY (NCPs)
(DoD NCPs in Parentheses)

FULL-TIME	HIGH-3	CSB/ REDUX*	BRS	FY 2024 Weighted
Nondisability benefits	56.0 (24.6)	55.2 (24.3)	43.8 (20.3)	50.0 (22.5)
Disability benefits	4.7 (1.2)	4.7 (1.2)	4.7 (1.2)	4.7 (1.2)
Survivor benefits	3.4 (3.4)	3.4 (3.4)	2.9 (2.9)	3.2 (3.2)
Total	64.2 (29.2)	63.4 (28.9)	51.5 (24.3)	57.9 (26.8)
PART-TIME				
Nondisability benefits	26.6 (18.1)	-N/A-	21.2 (14.5)	24.5 (16.7)
Disability benefits	3.7 (1.7)	-N/A-	3.7 (1.7)	3.7 (1.7)
Survivor benefits	3.4 (3.4)	-N/A-	2.8 (2.8)	3.2 (3.2)
Total	33.7 (23.2)	-N/A-	27.8 (19.1)	31.4 (21.6)

* Only full-time personnel are under the CSB/Redux benefit formula

Based on current active decrement rates, 19 percent of a typical group of new entrants attain 20 years of active duty service and become eligible for nondisability retirement. Specifically, 60 percent of new officers and 16 percent of new enlistees attain 20 years of active duty service.

It should be noted that some military personnel who begin their careers on active duty move to the reserves and retire from there. This is reflected by adding a portion of the reserve benefit to the full-time normal cost (see Technical Reference Appendix F). Based on current reserve decrement rates, 16 percent of a typical group of members entering the reserves for the first time (including members with prior active or non-drilling reserve time) become eligible for a nondisability retirement (55% for officers, and 15% for enlisted).

Table 9 lists the projected weighted aggregate full-time and part-time NCPs under current law in the normal cost columns. The columns are separated into the DoD and Treasury NCPs. With the passage of the law on BRS, projected NCPs will converge to the level of the BRS NCPs as all non-retired personnel will eventually have entered the uniformed service on or after December 31, 2017.

AMORTIZATION OF UNFUNDED LIABILITY

Because normal cost contributions for service prior to October 1, 1984, were not made into the MRF, there was an initial unfunded accrued liability of $528.7 billion as of September 30, 1984. NDAA 2021 added the USCG to the MRF beginning in FY 2023 with an initial unfunded liability of $59.7 billion. The Board determines the amortization methodology for the unfunded liability, and both initial unfunded liabilities are expected to be fully amortized in FY 2026.

Changes in the unfunded liability can arise because of modifications to benefit provisions, changes in actuarial assumptions, and deviations in actual experience from expected experience (gains and losses).

UNFUNDED ACCRUED LIABILITY

Table 5 summarizes the calculation of the unfunded accrued liability as of September 30, 2023. The present value of future benefits is obtained by projecting benefits for the total covered population (closed group) and discounting them back to the valuation date using the assumed long-term interest rate.

The present value of future normal cost contributions is obtained by projecting full-time and part-time basic pay for the covered population, multiplying the pay by the total projected full-time and part-time NCPs, and discounting the results back to the valuation date.

To assess system financial risks, certain underlying valuation assumptions were tested for their respective impacts, which are shown in Table 6. The absolute levels of change tested in Table 6 were selected to show directional magnitudes, not anticipated changes.

In FY 2023, there was a gain of $26.2 billion. The components of this gain are outlined in Table 7.

These changes in unfunded liability were used to calculate the October 1, 2024, unfunded liability payment. The total payment was determined to be $154.387 billion. This includes (1) a payment of $111.282 billion to amortize the original unfunded liability, plus (2) a payment of $21.530 billion to amortize the original unfunded liability for USCG, plus (3) an amount of $18.514 billion to

amortize changes in actuarial assumptions, plus (4) an amount of $7.861 billion to amortize benefit changes, less (5) an amount of $6.671 billion to amortize total combined experience gains and losses through FY 2023, plus (6) $1.871 billion to amortize over one year the loss due to sequestration of the October 1, 2023, Treasury Concurrent Receipt normal cost contribution. Tables 10 and 11 show the projection of the unfunded liability payments and unfunded liability balances.

TABLE 5

MILITARY RETIREMENT FUND
ACTUARIAL STATUS INFORMATION
($ in billions, plan year-end September 30)

		2023	2022
1.	Present value of future benefits (PVFB)		
	a. Retirees and Survivors	$1,396.3	$1,372.1
	b. Reserves	$244.5	$248.3
	c. Active Duty	$918.9	$906.5
	TOTAL	$2,559.7	$2,526.8
2.	Present value of future normal cost contributions (PVFNC)[1]	$430.1	$418.4
3.	Actuarial accrued liability (1. – 2.)[2]	$2,129.6	$2,108.4
4.	Actuarial value of assets[3]	$1,418.7	$1,279.1
5.	Unfunded accrued liability (3. – 4.)	$710.9	$829.3
6.	Funded Ratio (4. / 3.)	67%	61%
7.	DoD NCP to be applied to basic pay in fiscal year[4]	FY 2025	FY 2024
	a. Full-time	26.6%	30.0%
	b. Part-time	21.5%	23.1%
8.	Treasury NCP to be applied to basic pay in fiscal year[5]	FY 2025	FY 2024
	a. Full-time	30.8%	27.9%
	b. Part-time	9.8%	8.5%

[1] The September 30, 2023, PVFNC reflects a reduction of $1,798.859 million due to sequestration of the October 1, 2023, Treasury Concurrent Receipt normal cost contribution. The September 30, 2022, PVFNC reflects a reduction of $960.559 million due to sequestration of the October 1, 2022, Treasury Concurrent Receipt normal cost contribution.

[2] The valuation liability satisfies the requirement for pension plan funding valuations to separately calculate and disclose low-default-risk measurements. This is because the valuation interest rate is based on Fund assets that are held entirely in low-risk Treasury securities.

[3] The actuarial value of assets is determined using the amortized cost method from Table 2.

[4] Due to the need to establish the NCPs in advance of implementation, the percentages used in a fiscal year may vary from the ones in the valuation.

[5] Treasury pays the normal cost resulting from the increase in benefits due to Concurrent Receipt.

TABLE 6

MILITARY RETIREMENT FUND
SENSITIVITY TESTS*
($ in billions)

Long-Term Real Interest Rate Assumption
[Baseline Real Interest = 1.50%, Appendix D]

		Baseline	0.25% Lower	0.25% Higher
1.	Present value of future benefits	$2,560.0	$2,698.8	$2,431.7
2.	Actuarial accrued liability	$2,129.6	$2,226.4	$2,039.5
3.	Unfunded accrued liability	$710.9	$807.7	$620.8
4.a.	FY 2025 FT NCP [DoD + Treasury]	57.4%	62.4%	52.9%
4.b.	FY 2025 PT NCP [DoD + Treasury]	31.3%	34.3%	28.4%

Retention Assumptions
[FT Retention = 'Withdrawal Rates', Appendix G]
[PT Retention = 'Separation Rates', Appendix H]

		Baseline	25% Lower	25% Higher
1.	Present value of future benefits	$2,560.0	$2,701.2	$2,450.2
2.	Actuarial accrued liability	$2,129.6	$2,137.6	$2,122.3
3.	Unfunded accrued liability	$710.9	$718.9	$703.6
4.a.	FY 2025 FT NCP [DoD + Treasury]	57.4%	66.5%	48.7%
4.b.	FY 2025 PT NCP [DoD + Treasury]	31.3%	39.2%	23.9%
5.a.	New Entrants eligible for FT retirement (%)	19%	28%	13%
5.b.	New Entrants eligible for PT retirement (%)	16%	31%	9%

* A sensitivity test measures the impact of a change in an actuarial assumption on an actuarial determination. Baseline figures are from Table 5.

TABLE 7

MILITARY RETIREMENT SYSTEM
FY 2023 CHANGE IN UNFUNDED LIABILITY*
($ in billions, plan year-end September 30)

		2023	
1.	Actual unfunded accrued liability (9/30/23)	$710.9	
2.	Expected unfunded accrued liability (9/30/23)	$737.2	
3.	Total (gain)/loss **	($26.2)	1.2%
a.	Total experience (gain)/loss	$23.7	1.1%
	Interest assumption	$2.7	0.2%
	COLA assumption	$9.6	0.5%
	Salary assumption	$12.7	0.6%
	Non-economic experience	($1.3)	0.1%
b.	10/1/23 unpaid contribution ***	$1.8	0.1%
c.	Total benefit change (gain)/loss	$0.0	0.0%
d.	Total assumption change (gain)/loss	($51.7)	2.4%
	Mortality Improvement Factors	($33.8)	1.6%
	Reserve Rates	($16.8)	0.8%
	SBP Parameters	($1.4)	0.1%
	Disability Rates	$0.4	0.0%

In this table, negative values represent actuarial gains and positive values represent actuarial losses.

* Percentages shown are ratios of absolute values of each gain or loss component to the accrued liability (Table 5, line 3), except for the interest gain, which is the ratio to the actuarial value of assets.

** The reasons for the total experience (gain)/loss:
- Interest = 4.00% long-term assumed vs. 3.98% FY23 actual dollar-weighted fund yield
- COLA = 2.50% long-term assumed vs. 3.2% January 1, 2024, actual
- Salary = 2.75% long-term assumed vs. 5.2% January 1, 2024, actual

*** October 1, 2023, unpaid contribution loss is due to sequestration of the Treasury Concurrent Receipt normal cost contribution.

TABLE 8

MILITARY RETIREMENT SYSTEM
PROJECTED FLOW OF PLAN ASSETS[1]
($ as a proportion of payroll in billions)

Fiscal Year	Basic Payroll [2]	From DoD, for Normal Costs [3]		From Treasury, for Normal Costs [3]		From Treasury, for Amortization of Unfunded Liability [4]		Investment Income		Fund Disbursements [5]		Fund Balance, End of Year [6]	
2024	$84.8	$24.7	(29.2%)	$19.9	(23.4%)	$151.5	(178.6%)	$62.5	(73.7%)	$77.8	(91.7%)	$1,599.6	(1,885.6%)
2025	87.0	22.6	(26.0)	22.6	(26.0)	154.4	(177.4)	69.9	(80.3)	80.3	(92.3)	1,788.8	(2,055.7)
2026	96.2	24.9	(25.9)	27.3	(28.4)	156.7	(162.9)	77.8	(80.8)	82.5	(85.8)	1,993.0	(2,071.7)
2027	102.2	26.3	(25.8)	28.9	(28.2)	20.8	(20.4)	80.5	(78.8)	84.6	(82.8)	2,064.9	(2,020.1)
2028	108.0	27.7	(25.6)	30.3	(28.1)	21.4	(19.8)	83.5	(77.3)	86.8	(80.4)	2,140.9	(1,982.0)
2029	113.8	29.0	(25.5)	31.7	(27.9)	22.0	(19.3)	86.6	(76.1)	89.0	(78.2)	2,221.1	(1,951.4)
2030	119.6	30.3	(25.4)	33.1	(27.7)	22.6	(18.9)	89.9	(75.1)	91.3	(76.4)	2,305.7	(1,928.3)
2031	125.1	31.6	(25.2)	34.4	(27.5)	23.2	(18.5)	93.3	(74.6)	93.6	(74.9)	2,394.5	(1,914.8)
2032	130.7	32.8	(25.1)	35.7	(27.4)	23.8	(18.2)	96.9	(74.2)	96.0	(73.5)	2,487.8	(1,904.2)
2033	136.5	34.1	(25.0)	37.1	(27.2)	24.5	(17.9)	100.7	(73.8)	98.5	(72.2)	2,585.8	(1,894.2)
2034	142.5	35.5	(24.9)	38.5	(27.1)	25.2	(17.7)	104.7	(73.5)	101.0	(70.9)	2,688.6	(1,887.0)
2035	148.6	36.9	(24.8)	40.0	(26.9)	25.8	(17.4)	108.8	(73.2)	103.6	(69.7)	2,796.5	(1,881.3)
2036	155.0	38.2	(24.7)	41.4	(26.7)	26.6	(17.1)	113.2	(73.0)	106.2	(68.5)	2,909.8	(1,877.3)
2037	161.5	39.7	(24.6)	42.9	(26.6)	27.3	(16.9)	117.8	(72.9)	108.8	(67.4)	3,028.7	(1,875.1)
2038	168.2	41.1	(24.5)	44.5	(26.4)	28.0	(16.7)	122.6	(72.9)	111.6	(66.4)	3,153.3	(1,874.8)
2039	175.1	42.7	(24.4)	46.1	(26.3)	28.8	(16.5)	127.7	(72.9)	114.6	(65.4)	3,284.0	(1,875.6)
2040	182.3	44.3	(24.3)	47.8	(26.2)	29.6	(16.2)	133.0	(73.0)	117.3	(64.4)	3,421.4	(1,877.2)
2041	189.8	46.0	(24.3)	49.6	(26.1)	30.4	(16.0)	138.6	(73.0)	120.1	(63.3)	3,565.9	(1,879.1)
2042	197.6	47.8	(24.2)	51.5	(26.1)	22.0	(11.1)	144.1	(72.9)	122.9	(62.2)	3,708.5	(1,876.5)
2043	205.9	49.7	(24.2)	53.6	(26.0)	0.0	(0.0)	149.0	(72.4)	125.6	(61.0)	3,835.2	(1,863.0)

TABLE 8 FOOTNOTES

NOTE REGARDING OPEN GROUP PROJECTION: The open group projection in this report is based on benefit provisions, data, methods, and assumptions as of the valuation date. The values are displayed in future-year dollars.

[1] By law, DoD contributes the normal cost and Treasury makes payments on the unfunded liability and the portion of the normal cost attributable to Concurrent Receipt benefits.

[2] DoD-projected end strengths are used through the end of FY 2029 and held constant thereafter.

[3] Sequestration is reflected in the table through FY 2025.

[4] Reflects amortization payments for FY 2025 and thereafter determined in the September 30, 2023, valuation.

[5] Disbursements are on a cash basis and are paid on the first of the month.

[6] This fund balance (on a book value basis) reflects cash disbursements during the year.

OTHER NOTES: Mortality rates that are applied in the valuation are subject to annual rates of improvement. See Technical Reference Appendix J. People and pay underlying the projection can be found in Technical Reference Appendix K.

ECONOMIC ASSUMPTIONS USED IN PROJECTION OF PLAN ASSETS

Fiscal Year	COLA (%)	Basic Pay (%)	Interest (%)
2025	2.80	4.50	4.00
2026	2.30	2.60	4.00
2027	2.30	2.60	4.00
2028	2.30	2.60	4.00
2029	2.30	2.60	4.00
2030	2.30	2.60	4.00
2031	2.30	2.60	4.00
2032	2.30	2.60	4.00
2033+	2.50	2.75	4.00

FY 2025 through FY 2032 COLA and basic pay are short-term OMB assumptions; FY 2033 and beyond are long-term assumptions for COLA and basic pay. The long--term interest assumption is used for all years. COLA represents the cost-of-living increases to retiree and survivor annuities. Basic Pay is the rate at which the entire military pay table increases and occurs each January 1st. The interest assumption represents the annual aggregate Fund yield on all cash flows.

TABLE 9

MILITARY RETIREMENT FUND
PROJECTED PAYROLL AND NORMAL COST PAYMENTS
($ as a proportion of payroll in billions)

Fiscal	Payroll			DoD Normal Cost Payments				Treasury Normal Cost Payments				Normal Cost Payments	
Year	Full-Time	Part-Time	Total	Full-Time		Part-Time		Full-Time		Part-Time		Total	
2024	$74.6	$10.3	$84.8	$22.4	(30.0%)	$2.4	(23.1%)	$19.1	(27.9%)	$0.8	(8.5%)	$44.6	(52.6%)
2025	76.6	10.4	87.0	20.4	26.6	2.2	21.5	21.7	30.8	0.9	9.8	45.2	(52.0)
2026	86.3	9.9	96.2	22.8	26.4	2.1	21.3	26.4	30.5	1.0	9.7	52.2	(54.3)
2027	92.1	10.2	102.2	24.2	26.3	2.1	21.2	27.9	30.3	1.0	9.6	55.2	(54.0)
2028	97.6	10.4	108.0	25.5	26.1	2.2	21.0	29.3	30.0	1.0	9.6	58.0	(53.7)
2029	103.1	10.7	113.8	26.8	26.0	2.2	20.9	30.7	29.8	1.0	9.5	60.7	(53.4)
2030	108.5	11.0	119.6	28.0	25.8	2.3	20.8	32.1	29.5	1.0	9.5	63.4	(53.0)
2031	113.7	11.4	125.1	29.2	25.7	2.3	20.6	33.3	29.3	1.1	9.4	66.0	(52.8)
2032	119.0	11.7	130.7	30.4	25.6	2.4	20.5	34.6	29.1	1.1	9.4	68.6	(52.5)
2033	124.5	12.0	136.5	31.7	25.5	2.5	20.4	36.0	28.9	1.1	9.3	71.3	(52.2)
2034	130.1	12.4	142.5	33.0	25.3	2.5	20.3	37.4	28.7	1.2	9.3	74.0	(52.0)
2035	135.9	12.8	148.6	34.3	25.2	2.6	20.2	38.8	28.6	1.2	9.2	76.8	(51.7)
2036	141.8	13.2	155.0	35.6	25.1	2.7	20.1	40.2	28.4	1.2	9.2	79.7	(51.4)
2037	147.9	13.6	161.5	37.0	25.0	2.7	20.0	41.7	28.2	1.2	9.1	82.6	(51.1)
2038	154.2	14.0	168.2	38.4	24.9	2.8	19.9	43.2	28.0	1.3	9.1	85.6	(50.9)
2039	160.7	14.4	175.1	39.8	24.8	2.8	19.8	44.8	27.9	1.3	9.1	88.8	(50.7)
2040	167.5	14.8	182.3	41.4	24.7	2.9	19.7	46.5	27.7	1.3	9.0	92.1	(50.5)
2041	174.5	15.2	189.8	43.0	24.7	3.0	19.7	48.2	27.6	1.4	9.0	95.6	(50.4)
2042	181.9	15.7	197.6	44.8	24.6	3.1	19.6	50.1	27.6	1.4	9.0	99.4	(50.3)
2043	189.7	16.1	205.9	46.6	24.6	3.2	19.5	52.1	27.5	1.4	9.0	103.3	(50.2)

TABLE 10

MILITARY RETIREMENT FUND
PROJECTED UNFUNDED LIABILITY PAYMENTS ON OCTOBER 1
($ in billions)

Calendar Year	Original UFL	Assumption Changes	Benefit Changes	Actuarial Experience	Total
2024	$132.812	$18.514	$7.861	($4.800)	$154.387
2025	136.464	19.023	8.078	(6.855)	156.710
2026	0.000	19.546	8.300	(7.043)	20.803
2027	0.000	20.084	8.528	(7.237)	21.375
2028	0.000	20.636	8.762	(7.436)	21.962
2029	0.000	21.203	9.003	(7.640)	22.566
2030	0.000	21.787	9.251	(7.850)	23.188
2031	0.000	22.386	9.505	(8.066)	23.825
2032	0.000	23.001	9.767	(8.288)	24.480
2033	0.000	23.634	10.035	(8.516)	25.153
2034	0.000	24.284	10.312	(8.750)	25.846
2035	0.000	24.951	10.595	(8.991)	26.555
2036	0.000	25.638	10.886	(9.238)	27.286
2037	0.000	26.343	11.186	(9.492)	28.037
2038	0.000	27.067	11.493	(9.753)	28.807
2039	0.000	27.811	11.810	(10.022)	29.599
2040	0.000	28.576	12.134	(10.297)	30.413
2041	0.000	20.662	8.774	(7.445)	21.991
2042	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000

Note: Actuarial Experience includes impact of sequestered Treasury Normal Cost payments.

TABLE 11

MILITARY RETIREMENT FUND
PROJECTED UNFUNDED LIABILITY BALANCE
(before payment on September 30)
($ in billions)

Calendar Year	Original UFL	Assumption Changes	Benefit Changes	Actuarial Experience	Total
2024	$264.027	$296.825	$126.038	($105.084)	$581.806
2025	136.464	289.443	122.904	(104.295)	444.515
2026	0.000	281.237	119.419	(101.338)	299.318
2027	0.000	272.159	115.564	(98.067)	289.656
2028	0.000	262.158	111.317	(94.463)	279.012
2029	0.000	251.183	106.657	(90.508)	267.332
2030	0.000	239.179	101.561	(86.183)	254.556
2031	0.000	226.087	96.002	(81.466)	240.623
2032	0.000	211.849	89.957	(76.336)	225.470
2033	0.000	196.402	83.397	(70.770)	209.030
2034	0.000	179.679	76.297	(64.744)	191.232
2035	0.000	161.611	68.624	(58.234)	172.001
2036	0.000	142.126	60.350	(51.213)	151.264
2037	0.000	121.148	51.443	(43.654)	128.937
2038	0.000	98.597	41.867	(35.528)	104.936
2039	0.000	74.391	31.589	(26.806)	79.174
2040	0.000	48.443	20.570	(17.456)	51.558
2041	0.000	20.662	8.774	(7.445)	21.991
2042	0.000	0.000	0.000	0.000	0.000
2043	0.000	0.000	0.000	0.000	0.000

Note: Actuarial Experience includes impact of sequestered Treasury Normal Cost payments.

TRANSACTION PROCESS

The description of deficit, debt, and funding impact contained in this section are applicable under the current practices of the federal government regarding budget accounting and tax policy. These practices do not provide for increases in taxes to fund the MRF beyond what is required to pay benefits to retirees and survivors each year but do result in increases in the national debt.

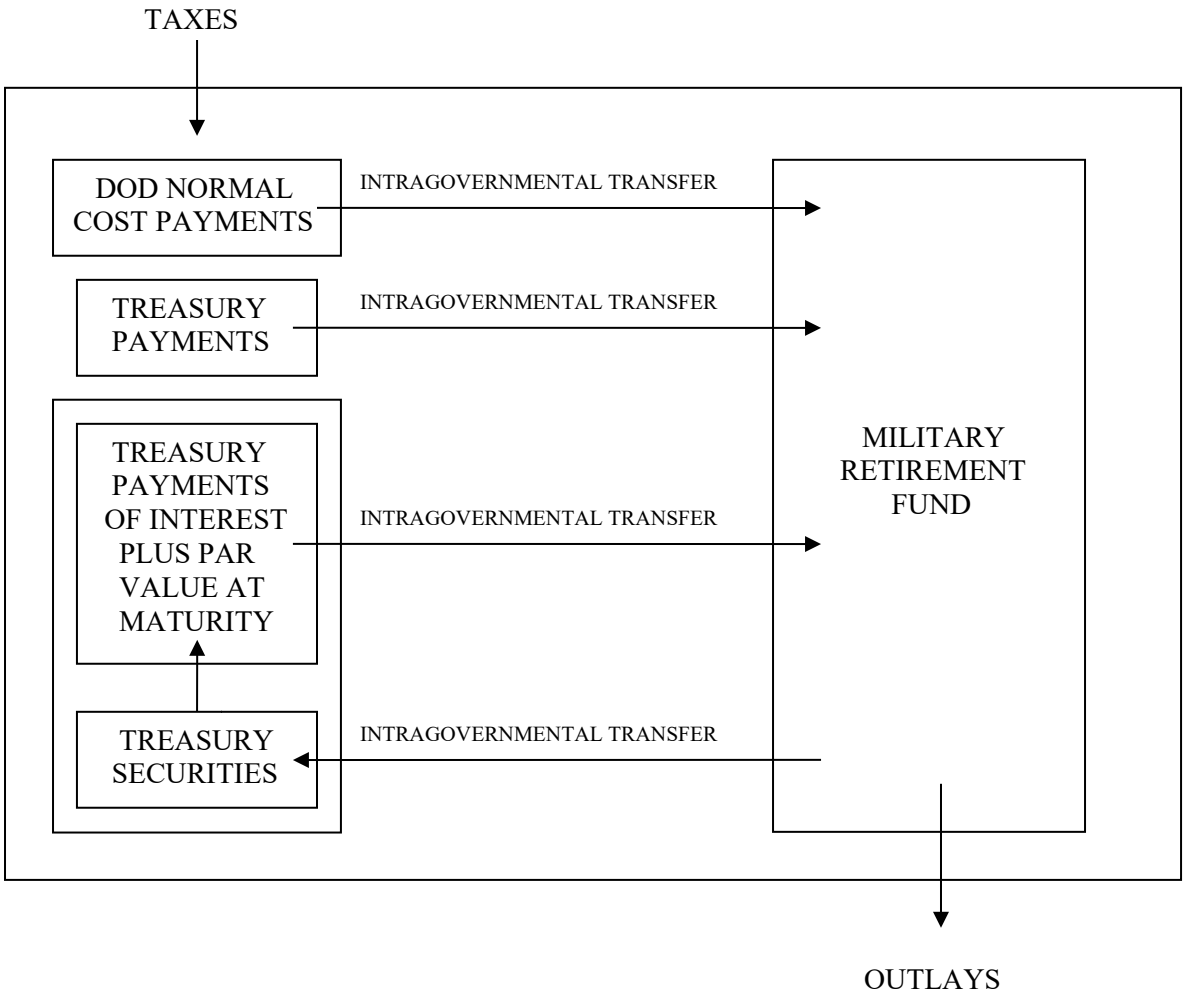
The MRF is a trust fund inside the Unified Budget of the federal government. It has three sources of income: (1) normal cost payments made by DoD, (2) unfunded liability and Concurrent Receipt normal cost payments made by Treasury, and (3) interest earnings on investments in government securities made by Treasury and the payments of the par values of these securities at maturity. All three of these items are intragovernmental transfers consisting of debits from one government account and credits to another.

The Fund has two types of payouts: payments to retirees and survivors, and purchases of U.S. Treasury securities. The purchase of a Treasury security is also an intragovernmental transfer, while a payment to a retiree or a survivor is not.

The only transactions in a particular year that directly affect the deficit of the Unified Budget are those that pass in or out of the government, such as tax collections ("in") and retiree or survivor payments ("out"). The intragovernmental transfers are debits and credits within the federal budget, with no direct effect on the deficit. See Figure 2.

FIGURE 2

UNIFIED BUDGET



All intragovernmental transfers in Figure 2 generate both a credit and an associated equal debit within the Unified Budget. Consequently, under current federal budget accounting practices, contributions to the Fund beyond what are required to pay benefits that year have no impact on the total federal deficit. Just as in the pay-as-you-go method, the only transactions that directly affect the deficit in the retirement system accounting process are payments to retirees and survivors (i.e., outlays).

On the other hand, the purchase of securities by the Fund does increase the national debt, specifically the portion of the debt held by the government. The portion held by the public will not change. However, the total debt will increase, and this requires an increase in the statutory borrowing authority (debt ceiling).

With the normal cost payments in the DoD budget, policymakers can see the impact on future retirement costs if they make manpower decisions. For example, if a decision were made today to double the size of the active duty and reserve forces, the DoD budget would have an immediate increase in retirement funding obligations. Under the pay-as-you-go method, retirement expenses would not be considered until the participants retire.

The Fund can be viewed as earmarking future tax receipts for the benefit of military retirees. As such, the existence of the Fund promotes a measure of "psychological security" for military members, retirees, and survivors.

The fact that costs are fully recognized in advance provides greater benefit security over the long term. Also, when there is a Fund, the system is not as dependent on obtaining the necessary appropriation from Congress each year to pay benefits for that year. This can provide additional benefit security in the short run.