

Calculating Wages And The Value Of Fringe Benefits In Cases Involving Military Personnel

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Introduction

When calculating economic losses for any occupation/profession one usually sees various nuances particular to that occupation/profession - calculating economic losses for military personnel is no exception. Wages, wage growth rates and fringe benefits for members of the United States military are, no pun intended, very regimented and structured. This article will hopefully provide the practicing economist with a thumb nail sketch of how to calculate the economic damages in a case involving a member of our armed forces.

To put the size of the United States military in perspective, as of September 30, 1994 there was a total of 1,692,439 military personnel in the Army (568,436), Navy (505,275), Marine Corps (178,526) and Air Force (440,202) of the United States. Of this total, 257,029 were either commissioned or warrant officers, while 1,435,410 were enlisted personnel. There are more than 2,000 basic and advanced military occupational specialties for enlisted personnel and 1,600 for officers. In fact, the Armed Forces constitute the United States largest employer. However, there has been a considerable downsizing in the military in terms of personnel. For example, in 1974 total military personnel stood at 2,162,005 and in 1984 at 2,123,428. The planned military drawdown should lower the number of military personnel through 1997 and then hold relatively constant from there on out, unless unanticipated world events were to change matters.

Before getting into the main body of the paper the definitions of a commissioned officer and enlisted member should be made. Commissioned officers enter the military for an indefinite period of time having received their commissions through the ROTC, military academies, other officers schools, or by direct commission. Their total numbers in a given year are approved by Congress. Enlisted personnel enter initially on an enlistment contract of a minimum of 3 years up to a maximum of 6 years. They can re-enlist when their initial contracts are up, and often incentives are offered to them to re-enlist, or they can apply to become officers, or go to the national guard/reserves, or leave the military completely.

Wages and Wage Growth Rates

Wages

Wages are referred to in the military manuals as basic pay and are determined by pay grade and years of service. Commissioned officers run from grades O-1 through O-10, while enlisted personnel run from grades E-1 through E-9. There are also warrant officers that run from grades W-1 through W-5, however this is a relatively small category.

The range of pay is very wide. For example, according to the 1995 Uniformed Services Almanac, a commissioned officer grade O-10, with over 26 years of service, has

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an annual basic pay of \$108,201, whereas an enlisted man grade E-1 with less than two years of service has an annual basic pay of \$10,253.

In addition to basic pay there are several categories of special and incentive pay which should be included under wages, if applicable. These include sea, submarine, recruiting and hostile fire or imminent danger pay, to name but a few of these categories. Care should be taken when considering adding any special and/or incentive pay to basic pay in determining whether or not this type of pay is of a recurring or a non-recurring nature.

Wage Growth Rates

In any calculation of economic loss not only is a base wage level crucial, but also determining a wage growth rate into the future from a base year. Wage growth rates for military personnel are a function of three factors :

- 1) promotions in rank
- 2) years of service
- 3) annual increases due to inflation

Table I in the appendix (available from the 1995 Uniformed Services Almanac) shows the average time in service for promotions in the four branches of the military. For example, currently in the Army and Air Force it takes an average of 10.6 years to be promoted from a commissioned officer grade 0-1 to grade 0-4. Tables II and III in the appendix show that by using the actual data from the 1985 and 1995 Uniformed Services Almanacs, respectively, one can calculate the actual wage growth rate for a commissioned officer grade 0-1, with under 2 years service of \$14,263 in 1985, to a commissioned officer grade 0-4 with over 10 years experience of \$41,184 in 1995. The average annual compound growth rate between these grades was 11.2 percent. Of the 11.2 percent per year increase, annual inflation increases granted accounts for approximately 3.0 percent of the increase with the balance of 8.2 percent the result of increased years of service and promotions.

Annual inflationary increases in active duty pay are granted by Congress and are not tied to any inflationary index. Table IV in the appendix shows that these increases are at the discretion of Congress by the fact that no increases were given in 1983 or 1986, while 11.7 percent and 14.3 percent increases were given in 1980 and 1981 when inflation was at 3.9 percent and 6.9 percent, respectively.

Using pay scale data together with average promotion time data for commissioned officers and enlisted personnel covering various periods of time indicates that wage growth rates in the double digit range have been the norm historically. Inflation is a relatively small reason for these high wage growth rates. The bigger factors are promotions and years of service, plus the fact that there are relatively low base year earnings in effect for newly commissioned officers and enlisted members. Unless something dramatic changes with the military pay/promotion/service structure in determining pay increases in the future, high wage growth rates can be expected to persist. However, government reductions in military spending could put a damper on future wage growth rates.

Fringe Benefits

There are a whole range of fringe benefits available to military personnel, in particular allowances for room and board and a noncontributory pension. This section will focus on the more important components of benefits available.

Basic Allowances for Subsistence (BAS)

This is a tax-free payment made to military individuals as a food allowance for all officers and for enlisted members who qualify only if living off-base. In 1995 the monthly BAS for all grades of officers was \$146.16 per month, whereas in 1985 it was \$106.18 per month which reflects a 3.3 percent compound average annual increase, pretty much in line with overall inflation.

Basic Allowances for Quarters (BAQ)

This is also a payment made to military individuals for a housing supplement only if living off-base, and is also tax-free. The amounts are increased for officers with dependents. In 1995 the monthly BAQ for a commissioned officer grade O-4 with dependents was \$705.90 per month, whereas in 1985 for a commissioned officer grade O-1 with dependents was \$323.70 per month which reflects an 8.1 percent compound average annual increase, more in line with the prior calculated wage growth rate for an officer with an average promotion track over the time period than with overall inflation. Unlike BAS, BAQ varies across officer grade. In 1995, a commissioned officer grade O-10 with dependents received \$922.50 per month in BAQ, whereas a commissioned officer grade O-1 with dependents received \$445.80 per month. The BAQ for enlisted men also varies across grade and for those with and without dependents.

Variable Housing Allowance (VHA)

This is also a tax-free payment made to military personnel for an off-base housing supplement in high housing cost areas of the country, in addition to their BAQ. For example, in 1995 a commissioned officer grade O-4 with dependents living in high cost San Francisco received a VHA of \$739.06 per month, whereas in low cost Grand Forks, North Dakota, zero VHA per month. The VHA varies by Military Housing Area (MHA) and is documented in the Uniformed Services Almanac by MHA.

Pension

The vesting period on a military pension is generally 20 years of service, considerably longer than most public and private jobs by a factor of 2-4 times. However, once an individual vests the pension benefits are unaffected by social security pension payments. Recently, in certain areas where there is a surplus of military personnel, early retirement and exit bonuses have been offered as inducements for personnel to leave earlier than 20 years.

For military personnel on active duty prior to August 1986 the pension is basic pay

multiplied by 2.5 percent times years of service. This results in a 50 percent factor (20 times 2.5 percent) for a military person with 20 years of service up to a maximum 75 percent factor for a military person with 30 or more years of service.

For military personnel on active duty after September 1986 their pension is the average of their three highest years of basic pay multiplied by 2.5 percent, minus one percent for each year of service less than 30 years. This results in a 40 percent factor ((20 times 2.5 percent)-(10 times 1 percent)) for a military person with 20 years of service up to a maximum 75 percent factor for a military person with 30 or more years of service.

Table IV in the Appendix shows the historical increases in the pension of military personnel due to inflation. The annual increases in their pension had over the past decade been on December 1st of each year payable on January 1st of the following year. This was based upon the increase in inflation, as measured by the Consumer Price Index (CPI) from the Bureau of Labor Statistics, for the third quarter of the year over the third quarter of the prior year, i.e. the inflationary increase to military retirees pensions is the same factor as the cost-of-living adjustment (COLA) made to social security pension payments on January 1st of each year. However, as of 1994 the increase in military retirees pensions has been delayed to March 1st of the following year, payable April 1st.

Other Benefits

Other fringe benefits available to military personnel include employer's share of social security (FICA 7.65%), health, dental, life insurance, clothing allowance, educational assistance and base privileges, to name but some of the categories. Base privileges of an on-base commissary entail tax-free shopping and discounts. The Veterans Administration (VA) also provides medical assistance to retirees with service connected disabilities from the military. The VA will provide, on a means tested basis, medical assistance to retirees with non service connected disabilities who have at least two years service in the military.

Conclusion

Military wages and fringe benefits are very well defined and structured. The Uniformed Services Almanac and the Retired Military Almanac provide the economist with all the necessary information on wages and fringe benefits. Even though base wages appear to be somewhat modest compared to the private sector, with just average promotions in grade levels over time, wage growth rates can easily surpass those in the private sector.

The fringe benefit package offered by the military is almost impossible to beat in non-military occupations. The average fringe benefit package offered by employers according to the U.S. Chamber of Commerce is somewhere in the 25 percent - 30 percent range (when one correctly deducts out pay for time not worked from the gross fringe benefit package figure). The comparable military fringe benefit percent is very conservatively approximately 55 percent - 60 percent, excluding any VHA benefits, mainly due to the food and board benefits. However, the vesting period on the military pension of 20 years is considerably longer than most non-military pension schemes.

Appendix

- Table I Average Time in Service for Promotion by Service
 (as of September 30, 1994)
- Table II Armed Forces Officers Pay, Basic Pay Rates
 (effective January 1, 1985)
- Table III Armed Forces Officers Pay, Basic Pay Rates
 (effective January 1, 1995)
- Table IV Active Duty and Retired Pay Increase Table

Table I

AVERAGE TIME IN SERVICE FOR PROMOTION BY SERVICE
[YEARS.MONTHS] (As of September 30, 1994)

GRADE	ARMY	NAVY	USAF	USMC
O-7	25.7	26.7	24.9	26.0
O-6	20.0	19.5	19.7	21.9
O-5	16.0	14.5	15.4	17.2
O-4	10.6	9.3	10.6	11.9
O-3	3.6	3.7	3.6	5.0
O-2	2.0	2.0	1.8	2.0
E-9	20.9	19.4	21.1	21.7
E-8	17.5	16.2	18.3	18.1
E-7	12.9	11.9	15.1	14.0
E-6	8.3	8.4	12.1	9.8
E-5	4.6	4.6	6.9	5.5
E-4	1.9	2.1	2.8	2.8

Table II

ARMED FORCES OFFICERS' PAY
Basic Pay Rates, Effective 1 January 1985

Pay Grade	YEARS OF SERVICE										YEARS OF SERVICE									
	Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 24	Over 26	Over 28	Over 30	Over 32	Over 34	
COMMISSIONED OFFICERS																				
O-10	\$5,069.40	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	\$5,247.90	
O-9	4,493.10	4,610.70	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	4,708.80	
O-8	4,069.50	4,191.30	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	4,290.90	
O-7	3,581.60	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	3,611.40	
O-6	2,506.20	2,753.70	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	2,834.00	
O-5	2,004.60	2,234.10	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	2,516.40	
O-4	1,689.60	2,057.40	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	
O-3	570.20	1,755.30	1,876.50	2,076.30	2,175.50	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	2,254.20	
O-2	1,369.20	1,485.20	1,798.10	1,856.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	1,895.70	
O-11	11,885.60	12,275.50	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	14,952.20	
COMMISSIONED OFFICERS WITH MORE THAN 4 YEARS OF ACTIVE DUTY AS AN ENLISTED OR WARRANT OFFICER																				
O-3E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O-2E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O-1E	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WARRANT OFFICERS																				
W-4	1,599.60	1,716.00	1,716.00	1,755.30	1,835.10	1,916.10	1,996.50	2,136.00	2,235.70	2,493.30	2,592.90	2,592.90	2,592.90	2,592.90	2,592.90	2,592.90	2,592.90	2,592.90	2,592.90	2,592.90
W-3	1,453.50	1,577.10	1,577.10	1,597.20	1,616.10	1,734.30	1,835.10	1,895.70	1,955.70	2,014.20	2,136.00	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80	2,194.80
W-2	1,273.50	1,377.60	1,377.60	1,417.80	1,455.20	1,577.10	1,636.80	1,696.80	1,755.30	1,816.80	1,876.50	1,935.90	1,935.90	1,935.90	1,935.90	1,935.90	1,935.90	1,935.90	1,935.90	1,935.90
W-1	1,061.10	1,216.50	1,216.50	1,317.90	1,377.60	1,436.70	1,495.20	1,557.30	1,616.80	1,675.90	1,734.30	1,796.10	1,796.10	1,796.10	1,796.10	1,796.10	1,796.10	1,796.10	1,796.10	1,796.10

NOTE: *Statutory limitation allows a maximum of \$5,724.90 per month regardless of years of service
 tCadet and midshipman pay is \$480.00

Table III

UNIFORMED SERVICES ALMANAC

ARMED FORCES OFFICERS' PAY Basic Pay Rates, Effective January 1, 1995											
YEARS OF SERVICE											
Pay Grade	Under 2	Over 2	Over 3	Over 4	Over 5	Over 6	Over 7	Over 8	Over 9	Over 10	Over 11
O-10	6978.30	7223.70	7223.70	7223.70	7501.20	7501.20	7916.70	8482.80	9051.00	9051.00	9614.70
O-9	6184.50	6346.50	6481.80	6481.80	6646.50	6646.50	6923.10	7501.20	7916.70	7916.70	8482.80
O-8	5601.60	5759.60	5906.40	5906.40	6246.50	6246.50	6646.50	6646.50	6923.10	7223.70	7501.20
O-7	4654.50	4921.00	4971.00	5193.90	5193.90	5193.90	5494.80	5769.50	6346.50	6783.00	6783.00
O-6	3449.70	3790.20	4038.60	4038.60	4038.60	4038.60	4038.60	4038.60	4176.00	4836.30	5082.90
O-5	2759.10	3239.70	3463.80	3463.80	3663.80	3663.80	3760.80	4012.80	4313.10	4560.00	4598.50
O-4	2325.60	2832.00	3021.00	3077.10	3212.70	3432.00	3624.90	3790.20	3956.70	4065.60	4065.60
O-3	2161.20	2416.50	2539.30	2856.10	2894.90	3102.30	3270.30	3432.00	3516.30	3516.30	3516.30
O-2	1884.60	2058.00	2472.90	2556.00	2608.80	2608.80	2608.80	2608.80	2608.80	2608.80	2608.80
O-1	1616.20	1701.10	2058.00	2058.00	2058.00	2058.00	2058.00	2058.00	2058.00	2058.00	2058.00
COMMISSIONED OFFICERS WITH OVER 4 YEARS OF ACTIVE SERVICE AS AN ENLISTED MEMBER OR WARRANT OFFICER											
O-3B	0.00	0.00	0.00	[2856.10]	[2994.90]	[3102.30]	[3270.30]	[3432.00]	[3568.50]	[3568.50]	[3568.50]
O-2B	0.00	0.00	0.00	[2556.00]	[2608.80]	[2632.00]	[2624.60]	[3021.00]	[3021.00]	[3021.00]	[3021.00]
O-1B	0.00	0.00	0.00	[2058.00]	[2199.00]	[2280.00]	[2262.50]	[2444.40]	[2556.00]	[2556.00]	[2556.00]
WARRANT OFFICERS											
W-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3757.80	3900.30
W-4	2202.00	2362.50	2416.50	2526.30	2637.60	2748.10	2840.60	3077.10	3185.10	3270.30	3375.90
W-3	2001.30	2170.80	2170.80	2199.00	2224.50	2387.40	2526.30	2608.80	2691.60	2777.00	2869.70
W-2	1752.90	1896.30	1896.30	1951.50	2058.00	2170.80	2253.30	2335.80	2416.50	2501.40	2593.30
W-1	1460.10	1674.30	1674.30	1814.10	1896.30	1977.60	2058.00	2143.20	2224.50	2307.30	2397.40

Note: Statutory limitation allows a maximum of \$9,016.80 per month regardless of years of service.
 Cadet and Midshipmen pay is \$556.04

Table IV

UNIFORMED SERVICES ALMANAC

ACTIVE DUTY AND RETIRED PAY INCREASE TABLE

Active Duty Basic Pay Increases						Retired Pay Increases					
Year	Month	Actual %	Cumulative % (over base of 100)	Reverse Increase %	Year	Month	Actual %	Cumulative % (over base of 100)	Reverse Increase %	Year	Month
1958	Jun 1	8.3	8.3	668.0	1958	Jun 1	6.0*	6.0	452.8		
1958	Oct 1	14.2	23.7	627.6	1958	Oct 1	5.0	11.3	421.5		
1958	Sep 1	2.3	26.5	537.2	1958	Sep 1	4.4	16.2	395.7		
1959	Sep 1	10.4	39.7	522.8	1959	Dec 1	3.7	20.5	375.8		
1959	Jul 1	3.2	44.2	484.2	1959	Apr 1	3.902.91	25.2	358.8		
1959	Oct 1	5.6	52.2	466.7	1959	Feb 1	4.021.1	30.2	341.6		
1959	Jul 1	6.9	62.7	417.7	1959	Nov 1	5.301.91	37.1	324.6		
1959	Jul 1	12.6	83.2	384.3	1970	Aug 1	5.681.61	44.8	303.2		
1970	Jan 1	8.1	98.1	330.1	1971	Jun 1	4.501.61	51.3	281.8		
1970	Jan 1	7.9	113.7	297.9	1972	Jun 1	4.801.71	58.6	265.4		
1971	Jan 1	11.6	138.5	288.7	1973	Jul 1	6.161.61	68.2	248.7		
1971	Nov 1	7.2	155.7	230.4	1974	Jan 1	5.512.91	77.5	228.6		
1972	Jan 1	6.7	172.8	208.2	1974	Jul 1	6.316.31	88.7	211.5		
1972	Oct 1	6.2	189.7	188.8	1975	Jan 1	7.301.31	102.4	193.0		
1973	Oct 1	5.5	205.7	172.0	1975	Aug 1	5.161.01	112.8	173.1		
1974	Oct 1	5.0	220.9	157.8	1976	Mar 1	5.411.71	124.3	159.8		
1975	Oct 1	3.6	232.5	145.5	1977	Mar 1	4.811.01	135.0	146.5		
1976	Oct 1	6.2	253.1	137.0	1977	Sep 1	4.351.31	145.1	135.2		
1977	Oct 1	5.5	272.5	123.2	1978	Mar 1	2.411.11	151.0	125.5		
1978	Oct 1	7.0	298.6	111.5	1978	Sep 1	4.961.11	163.3	120.2		
1979	Oct 1	11.7	345.3	97.7	1979	Mar 1	3.901.51	173.6	110.0		
1980	Oct 1	14.3*	408.9	77.0	1979	Sep 1	6.901.61	192.4	102.1		
1981	Oct 1	4.0	429.3	54.8	1980	Mar 1	6.021.61	210.0	89.0		
1982	Oct 1	0	489.6	37.7	1983	Sep 1	7.211.01	233.9	78.3		
1983	Oct 1	3.0	507.3	33.6	1984	Dec 1	3.512.81	305.1***	41.3		
1984	Jan 1	4.0†	450.5	48.9	1981	Mar 1	4.402.71	248.6	65.6		
1985	Jan 1	4.0†	472.5	43.2	1982	Mar 1	8.711.01	278.9	58.6		
1985	Oct 1	3.0	489.6	37.7	1983	Apr 1	3.310.01	291.4	45.9		
1986	Oct 1	0	498.6	37.7	1984	Dec 1	3.512.81	305.1***	41.3		
1987	Jan 1	3.0	507.3	33.6	1985	Dec 1	..	305.1			
1988	Jan 1	2.0	519.5	29.7	1986	Dec 1	1.311.31	310.3	36.5		
1989	Jan 1	4.1	544.9	27.2	1987	Dec 1	4.202.71	327.6	34.7		
1990	Jan 1	3.6	568.1	22.2	1988	Dec 1	4.002.21	344.7	29.3		
1991	Jan 1	4.1	585.5	17.9	1989	Dec 1	4.712.61	365.6	24.3		
1992	Jan 1	4.2	624.7	13.3	1990	Dec 1	5.401.41	390.7	18.7		
1993	Jan 1	3.7	651.5	8.7	1991	Dec 1	3.712.01	408.9	12.7		
1994	Jan 1	2.2	688.0	4.9	1992	Dec 1	3.012.31	424.2	8.6		
1995	Jan 1	2.6	688.0	2.6	1993	Dec 1	2.611.91	437.8	5.5		
					1994	Dec 1††	2.812.21	452.8	2.8		

*Basic pay increases for enlisted personnel ranged from 10% for E-1; 10.7% for E-2, E-3, 13% for E-4, 16.5% for E-5, E-6, and 17% for E-7, E-8. For officers the hike was 14.3%.

†Except for E-1 with less than 4 months service.

‡For members under age 62 and not on disability retired pay.

**The Retired Pay Increase of 3.1% for December 1985 was cancelled by the Gramm-Rudman-Hollings Act.

***Cumulative increases subsequent to 1983 are based on the April 1983 3.3% increase.

††Delayed to March 1, 1995 by FV95 Authorization Act.

References

- Brookshire, Michael and Stan Smith, *Economic/Hedonic Damages : The Practice Book for Plaintiff and Defense Attorneys*, Cincinnati: Anderson Publishing Company, 1990.
- U.S. Chamber of Commerce, Employee Benefits, Research Center, Washington, D.C., 1994.
- U.S. Department of Labor, *Occupational Outlook Handbook*, Bulletin 2450, Washington: Government Printing Office, 1995.
- National Guard Almanac, Uniformed Services Almanac, Inc., Falls Church, Virginia (various years).
- Reserve Forces Almanac, Uniformed Services Almanac, Inc., Falls Church, Virginia (various years).
- Retired Services Almanac, Uniformed Services Almanac, Inc., Falls Church, Virginia (various years).
- Uniformed Services Almanac, Uniformed Services Almanac, Inc., Falls Church, Virginia (various years).