Explanation of Economic Loss Calculations for FDNY or NYPD Victims

Revised May 15, 2002

The calculation of presumed economic loss will use the following procedures and assumptions for death claims involving victims who were in the FDNY or NYPD ("Department"):

1. Establish the victim's age and compensable income.[1] Income includes Department wages earned, including overtime, longevity premium, and shift differential. Also included are regular supplemental earnings outside the Department, if any. Income, including supplemental outside income during Department employment, will be established based on the claimant's submissions. Generally, the Special Master will consider the past three years of income data. For many cases the most recent year will be the primary basis of the award --other claims may require analysis of trends adjusted to current dollars.

2. Determine after-tax compensable income by applying the average effective combined federal, state and local income tax rate for the victim's income bracket currently applicable in the state of the victim's domicile for tax purposes, state and locality. The Special Master will consider the victim's tax returns as well as effective income tax rates derived from published Internal Revenue Service (IRS) data on selected income and tax items for Individual Income Tax Returns by state.[2]

3. Calculate the value of the increase[3] in the victim's projected annual Department pension benefit, also referred to as retirement allowance, by virtue of continued Department service, assuming that each victim would have remained on active duty for at least 20 or more years and at that point have been eligible for an immediate department pension equal to at least 50% of last pay, as defined by the pension plan.[4] Years of Department service at Department retirement, and start of Department retirement benefits, will be based on 25 years of Department service for FDNY and 20 years of service for NYPD, based on discussions with pension administrators.[5] In accordance with current

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[1] Income up to the IRS 98th percentile of wage earners is considered. This income level was $231,000 for the year 2000.

[2] Average combined effective income tax rates by earnings bracket were calculated based on an analysis of IRS data for the most recent tax years available: 1997, 1998 and 1999. In consideration of future income tax rate reductions and other tax reforms included in the Economic Growth and Tax Relief Reconciliation Act of 2001 (HR 1836) signed by President Bush on June 7, 2001, the calculated average combined effective income tax rates were reduced by an estimated 5%. It is recognized that HR 1836 actually provides for smaller graduated rate reductions beginning July 2001 through 2006 and remaining in effect only through 2010. The one-time immediate reduction of 5%, assumed to remain in effect for all future years, including years beyond 2010, was applied to facilitate projections and eliminate speculation as to future tax law modifications.

[3] The increase in the victim's projected annual pension is the difference between the present value of the monthly pension benefits the victim would have eventually received on account of continued service through Department retirement, and the present value of the victim's vested pension payable at the date the victim would have been first eligible to begin collecting annual Department pension. The victim's vested pension, if any, is the amount earned for service through date of death, and will also be subtracted from the present value of any Department survivor pension that is an offset to the loss award. If the present value of the victim's "vested pension" exceeds the present value of the survivor pension, this difference will be considered an additional fringe benefit lost.

[4] Department pensions will be determined using the formulas and provisions outlined in the current New York City Police or Fire Department pension handbooks, updated for Laws of 2000 changes.

[5] For victims who had already attained the average years of credited service for Department retirees, one additional year of Department service will be assumed. In general, this maximizes the present value of projected future pension benefits because they start earlier.

provisions of the pension plan, the Department retirement benefit may be increased by a cost of living adjustment, and is assumed payable through the victim's life expectancy, measured using current standard life expectancy tables for all persons published by the United States Department of Health and Human Services, National Vital Statistics System. Projected Department pensions will be reduced for combined federal, state and local income tax (to the extent applicable), using the same effective income tax rate applicable for compensable income.

Regardless of when additional compensation in the form of Department retirement benefits is assumed to begin, annual compensable income equivalent to the individual's combined projected Department wages, overtime, longevity premium, shift differential and supplemental outside income, if applicable, is assumed to continue in full, adjusted for annual increases as described below, through the individual's entire expected remaining working years.[6]

4. Add the value of other fringe benefits. If the claimant does not provide data, medical benefits while in Department service are assumed to be $2,400 per year in current year dollars and will be adjusted for applicable inflation. Benefits attributable to supplemental earnings outside the Department, if any, will be included as documentation supports. For assumed post-Department employment, pension is assumed at 4% of pension-eligible compensable income and medical benefits are assumed to be $2,400 per year in current year dollars and will be adjusted for applicable inflation.

5. Determine a measure of the victim's expected remaining years of workforce participation (in *any* job) using the tabulated work-life expectancies for the victim's age contained in the publication "A Markov Process Model of Work-Life Expectancies Based on Labor Market Activity in 1997-1998," by James Ciecka, Thomas Donley, and Jerry Goldman in the *Journal of Legal Economics*, Winter 1999-2000. These are the most recent and generally accepted tables of work-life expectancy regarding the general population available.

   Work-life expectancies are based on actual experiences and behavior of the general population and measure the estimated remaining time in years an individual a given age will be in the labor force (either employed or actively seeking work), allowing for age-specific mortality risks and rates of workforce transitions. The Special Master will use the expected work-life for "All Active Men" to compute expected remaining years of workforce participation for both male and female victims. Because published estimated work-life expectancies by gender are lower for women than men, this specification increases the duration of estimated foregone earnings, and thus presumed economic losses, for female victims and was implemented by the Special Master to accommodate for potential increases in labor force participation rates of women.

6. Project compensable income and benefits through the victim's expected work-life using growth rates which incorporate an annual inflationary or cost-of-living component, an annual real overall productivity or scale adjustment in excess of inflation, and an annual real life-cycle or age-specific increase derived using data on average full-time year round earnings by age bracket from the March

[6] Supplemental outside income, if any, unless it was available to the victim primarily as a result of his or her particular Department work schedule, will be projected to continue during post-Department employment after Department retirement benefits begin.

2001 Current Population Survey (CPS), a monthly survey of households conducted by the Bureau of the Census for the Bureau of Labor Statistics. This survey is widely recognized as the primary source of data on employment status and workforce characteristics of the civilian noninstitutional population ages 16 years and older. Because age-specific observed life-cycle increases for all males were higher than observed life-cycle increases for both men and women combined, the Special Master elected to incorporate the life-cycle increases for males into earnings growth for all victims, both male and female.[7] It was determined that age-specific or life-cycle increases based on CPS data, when compared to published Department pay schedules by position and longevity, implied significant future advancement for Department Victims.

Independent of life-cycle increases, inflation and real overall productivity increases of 2% and 1%, respectively, were applied each year. These rates of increase are consistent with the long-term relationship between economy-wide wage growth and risk-free interest rates, which currently reflect lowered inflationary expectations.[8] The Special Master has determined that individual age-specific growth rates, rather than growth dependent on a particular age bracket at death, better reflects the expected pattern of earnings over one's career[9] and results in more equitable and consistent projections for victims close to each other in age with otherwise similar family and employment characteristics.

7. To better reflect contingencies that the victims would have faced, all future earnings amounts are adjusted for a factor to account for the risk of unemployment because lifetime jobs are not representative of the modern economy. This adjustment is made because work-life expectancies are based on years of expected workforce participation, which, as defined by the Bureau of Labor Statistics, include periods an individual is either working or seeking work. Historical unemployment rates were examined and a comparatively low reduction factor of 3% was applied to presumed earnings to account for this risk.[10]

8. Subtract from annual projected compensable income and benefits, including Department pension, the victim's share of household expenditures or consumption as a percentage of income, using

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[7] An examination of real life-cycle earnings growth for males by education level revealed that career real life-cycle increases computed for all males across education levels mimicked the career earnings profile of the highest educated group. For this reason, the Special Master elected to apply the growth pattern for all males for the sake of consistency and to better advantage all claimants.

[8] The assumed 1% annual real overall productivity increase also agrees with assumed ultimate long-term annual average covered real-wage differentials used by the Board of Trustees of the Social Security Trust Funds to project the financial condition of the trust funds.

[9] Real life-cycle increases are typically higher in the earlier stages of one's career, one reason being unrealised opportunities for advancement and promotion that individuals in later stages of their careers have already experienced. During the course of an individual's career, the rate of annual real life-cycle growth tends to gradually decline until a peak real earnings level is attained. Although CPS and other data used to study lifetime earnings profiles indicate that peak real earnings typically decline at some point, in calculating life-cycle earnings growth in excess of inflation and overall productivity adjustments for victims, the Special Master has assumed that peak earnings are maintained.

[10] Application of individualized unemployment rates by age or occupation was infeasible and determined to be unnecessary. An examination of trends in unemployment rates demonstrated that the 3% adjustment factor utilized was low by historical standards.

expenditure data by income level obtained from "Table 2. Income before taxes: Average annual expenditures and characteristics, Consumer Expenditure Survey, 1999," published by the Bureau of Labor Statistics (BLS). This subtraction is a standard adjustment in evaluating loss of earnings in wrongful death claims because some amount of the income the victim would have contributed to the household would have been consumed personally by the deceased and not available to other household members. A victim's expenditures were calculated as a share, based on household size, of certain expenditure categories. For married or single with dependents, these expenditure categories include Food, Apparel & Services, Transportation, Entertainment, Personal Care Products and Services, and Miscellaneous. For single without dependents, Housing, Education and Health are also included.[11] For lower income categories where total expenditures exceed income, expenditures were scaled to income, so as not to reduce income for expenses potentially met by other forms of support. This approach was intended to avoid a penalty to the claimant.

In determining household size, children were assumed to remain in the household through age 18. Consumption rates calculated using alternative techniques were considered but found to produce higher personal consumption rates and were not ultimately used to determine victim's household consumption offset.[12] Although the consumption rates determined from BLS data actually represent household expenditures as a percent of before-tax household income, the actual consumption reduction used to determine the victim's personal expenditures was calculated as a percent of lower after-tax income, which significantly reduces the resulting offset. In addition, the victim's consumption is determined as a share of the victim's own earnings only, rather than the standard share of total household earnings. This further lessens the resulting subtraction, compared to personal consumption offsets typically applied in litigation, if there are other earners in the household.

9. Calculate the present value of projected compensable income and benefits, including lost department pension, using discount rates based on current yields on mid- to long-term U.S. Treasury securities, adjusted for income taxes using a mid-range effective tax rate.[13] Because the period of presumed economic losses is either longer or shorter, depending on the victim's age, the present value calculations are performed using yields on a blend of securities with longer or shorter times to maturity. For computational efficiency, three blended after-tax discount rates were used, depending on the victim's age as of date of death, and assumed to apply for all years forward.

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[11] Other standard expenditure categories sometimes included in litigation, namely Reading, Cash Contributions, Alcoholic Beverages, and Tobacco Products, were excluded.

[12] These alternative techniques included an analysis of BLS data on household expenditures reported by household size, with expenditure categories allocated equally among household members or allocated according to the methodology suggested by authors Robert Patton & David Nelson in their 1991 Journal of Forensic Economics article, "Estimating Personal Consumption Costs in Wrongful Death Cases."

[13] The tax rate used to determine after-tax interest rates is the computed combined Federal, State and Local income tax rate of 18.44% for New York for the $70,000 earnings bracket. Although it is recognized that a different after-tax interest rate could theoretically be calculated for each age, income, and state combination, such a computation was impracticable for the large-scale valuations to be undertaken here. It was determined that the benefit to the claimants of calculating the victim's personal consumption offset as a percent of after-tax individual earnings more than outweighed the potential effect of discounting future amounts by income-specific after-tax discount rates. Moreover, computation of the after-tax discount rate using a relatively high combined New York income tax rate, compared to other states, results in a lower after-tax discount rate. The lower the after-tax discount rate, the higher the present value of presumed economic loss.

Explanation of Economic Loss Calculations for FDNY or NYPD Victims

10. The computation methodology adopts a number of assumptions implemented to facilitate analysis on a large scale. When viewed in total, these assumptions are designed to benefit the claimants and are more favorable than the standard assumptions typically applied in litigation. For example, the Special Master considered that over the course of their projected careers, younger victims could expect to cross into higher income brackets, and be subject to corresponding higher income tax rates, on account of experience-based real lifetime earnings growth in excess of economy-wide national wage increases. To calculate presumed economic losses, however, whatever income tax rate corresponded to victim's determined compensable income bracket as of date of death was assumed to apply for the remainder of the victim's career, without increase. Likewise, the calculations of presumed economic losses also assume that the personal consumption percent corresponding to victim's determined compensable income bracket as of date of death applies for the remainder of the victim's career, without decrease. The earnings bracket for determination of both the relevant income tax percentage and the relevant consumption percentage will be based on the level of total compensable income at death, without adjustment for additional department retirement benefits assumed to begin after at least 20 years of department service. It was determined that the net effect of these and other facilitating assumptions was to increase the potential amount of presumed economic loss to the benefit of the claimant. .

11. Refer to Tables 1-5 accompanying the general "Presumed Loss Calculation Tables Before any Collateral Offsets" explanation for additional information on Presumed Future Effective Combined Federal, State and Local Income Tax Rates for New York (Table 1), Expected Remaining Years of Workforce Participation (Table 2), Presumed Age-Specific Earnings Growth Rates (Table 3), Decedent's Personal Expenditures or Consumption as Percent of Income (Table 4), and Assumed Before-tax and After-tax Discount Rates (Table 5) [reprinted below].

Assumed Before-Tax and After-Tax Discount Rates

Age of Victim	Before-Tax Discount Rate	After-Tax Discount Rate
35 & Under	5.1%	4.2%
36-54	4.8%	3.9%
55 & Over	4.2%	3.4%

Note:
The present value of presumed economic loss is calculated by applying the after-tax discount rate corresponding to the victim's age at death to all future periods. For example, projected earnings and benefits for a victim who was 30 years old at the time of death will be discounted to present value at 4.2% per year for all future years, and projected earnings and benefits for a 45-year-old victim will be discounted to present value at 3.9% per year for all future years.

EXPLANATION OF POLICE OFFICER AND FIREFIGHTER CALCULATIONS WITH ILLUSTRATION

1. Procedures for Determining Economic Loss.

To calculate the victim's compensation for purposes of determining economic loss, the Fund will include: all forms of compensation — including overtime, shift differential, longevity premium — PLUS the pension that the firefighter or police officer would have received after 20 or 25 years on the force, PLUS the Fund will assume that the firefighter or police officer will continue to earn an income equivalent to that earned on the force even **after** the pension begins. In addition, the Fund will count any earnings from a second job that can be documented.

The Fund will apply the wage growth assumptions to the earnings of the firefighter or police officer so that **each year** the earning level will go up. At the time the pension is assumed to commence, the pension will be based on the earnings projected **at that date**.

This means that in computing economic loss for the beneficiaries of a firefighter or police officer (1) the Fund will assume that the compensation level of the firefighter or police officer will continue through the average work life, even though the firefighter or police officer might have retired after 20 or 25 years, (2) that after 20 or 25 years on the force the firefighter or police officer would have received a pension (calculated based on the salary after 20 to 25 years on the force) in addition to the compensation calculated in number (1), and (3) that any second source of income will also continue after the pension begins. Therefore, after 20 or 25 years on the force, the formula will count: (1) compensation, including earnings from a second job, as increased in accordance with the regular methodology through average work life; plus (2) firefighter or police pension through average life expectancy.

2. Pension/In-the-Line-of-Duty Death Benefit Offsets.

To comply with the Act's requirement that the Fund deduct from any award collateral source compensation including pensions and death benefits, the Fund will deduct from the award the present value of the death benefit that the survivor obtains from New York. If the death benefit is paid on an annuity basis, that deduction will be computed based on the annual value of the death benefit for the expected life span of the spouse of the victim (or the relevant period of time the benefit is payable to children or parents) in accordance with current rules governing the payment of death benefits. The calculation assumes that the death benefit will **not** be increased over time, as any increases must be legislatively mandated. This means that the offset will be based on the firefighter or police officer's salary without increases as of September 11 (which is lower than the future salary with increases that

will be projected in computing the economic loss). As a general rule, the offset for the in-the-line-of-duty death benefit will be less than the amount computed as economic loss because the economic loss will include presumed salary increases and promotions each year and because the economic loss will include lost pension on top of that. The methodology is set up so that the Fund will **not** include in the offset the amount of the pension that was vested as of September 11. Since this reduction in the offset is like a credit or pre-payment to the survivor of the victim's vested pension, the economic loss will make up the remaining portion of the victim's lifetime pension benefits that would have been earned for continued service after September 11.

3. Public Safety Officers Benefit.

The Fund will **not** offset the $250,000 Public Safety Officers Benefit.

Explanation of Economic Loss Calculations for FDNY or NYPD Victims

ILLUSTRATION

September 11th Victim Compensation Fund of 2001

Illustration of Presumed Economic and Non-Economic Loss Calculation -- FDNY Claimant

Assumptions

Victim Name:		FDNY Claimant
Date of Death:		09/11/01
Age:		30.0
Marital Status:		M
Number Children Under Age 18:		2
Children's Ages at 09/11/01:	Child #1	Age 9
	Child #2	Newborn
Primary Employer:		FDNY
Total Annual Earnings From All Employers:		$80,000
FDNY Annual Earnings:		$75,000
Years in FDNY as of 09/11/01:		6.0
Assumed Start Date of FDNY Pension:		10/01/20

Total Economic Losses Before Collateral Offsets:	
Loss of Earnings & Benefits Including Loss of Lifetime FDNY Pension Benefits From Continued FDNY Service After 09/11/01*	**$2,712,391**
Total Non-Economic Losses	**$550,000**
Total Economic and Non-Economic Losses Before Known Collateral Offsets	**$3,262,391**

* Includes the excess of the victim's "vested pension" over the value of the survivor pension, if any, assuming FDNY survivor annuity is elected instead of lump sum.

Less:

Known Offsets:		
Present Value of FDNY Survivor Annuity Pension Benefit Reduced by Present Value of Victim's FDNY Vested Pension as of 09/11/01:		
FDNY Survivor Benefits	**$1,354,813**	
Less: Victim's Vested Benefit	**($89,395)**	**$1,265,418**
Present Value of Estimated Children's Social Security Benefits		**$359,350**
FDNY Group Life Insurance		**$8,500**
Mayor's Office Benefit (one year's pay)		**$75,000**
Contractual Benefit		**$25,000**
Total Known Offsets		**$1,733,268**
Amount of Award		**$1,529,123**