Yukon *Workers' Compensation Act* Subsection 105.(1) Research Series:

Method and Limitations on Calculating the Maximum Wage Rate

Commissioned by the Yukon Workers' Compensation Health and Safety Board of Directors in preparation for the 2003 *Workers' Compensation Act* Review

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Introduction

The Yukon Workers' Compensation Health and Safety Board is responsible for the administration of the *Workers' Compensation Act*. Subsection 105.(1) of the *Workers' Compensation Act* requires that a review of selected concepts embodied in the *Act* be initiated no later than January 1, 2003. The concepts identified for consideration include:

(a) expansion of disability, within the meaning of the Act
(b) the effectiveness and appropriateness of the board administering both the *Workers' Compensation Act* and the *Occupational Health and Safety Act*
(c) the use of deeming
(d) the effect of retirement on entitlement
(e) the role and use of indexing of benefits
(f) the method and limitations on calculating the maximum wage rate
(g) the role and effectiveness of the workers' advocate
(h) the adequacy of the system for spouses

This paper presents the results of the review undertaken by Vector Research in respect of concept (f), the method and limitations on calculating the maximum wage rate.

The main methodology employed in the study was a document review. Since many workers' compensation research issues are decades old, research efforts included the review of selected reports prepared by task forces and review committees in other jurisdictions over the last 20 years. The review of those reports was undertaken during a November 2002 visit to the British Columbia Workers' Compensation Library. The analysis contained in this paper is fundamentally from a public finance perspective; the absence of discussion about the psychological and sociological impacts of worker injury and disability is not intended to diminish the importance of those impacts to workers, employers and their families.

This research paper is divided into two main sections. Part A is a framework for analysis of the Yukon workers' compensation system. The framework is made up of a trilogy of equations which together explain the basic operations of the system. The intent of the framework is to provide a basis for understanding and discussion of the maximum wage rate.

Part B of the paper focuses on the maximum wage rate calculation and consists of three sections. The first section of Part B, looks at the mechanics of the maximum wage rate calculation. Section B.2 considers the maximum wage rate concept in an interjurisdictional context and section B.3 identifies some key issues thought to warrant further discussion by the Board.

PART A: Framework for Analysis

The Yukon workers' compensation system, like all others across Canada, was founded on the Meredith principles. First described in 1913 by Ontario Chief Justice William Meredith, the principles continue to define relationship between disabled workers and employers. In accordance with Meredith's principles, workers in the Yukon are afforded guaranteed compensation on a no-fault basis in the event of disability on the job. Funding for workers' compensation is provided exclusively by employers. In return, employers may not be sued for damages by workers who suffer work-related disabilities.

The Yukon workers' compensation system is administered by a Board which is independent of government, headed by a neutral chair and comprised of an equal number of representatives from labour and industry. Members of the Board are appointed by the Government of Yukon. The Board and the Yukon Workers' Compensation Appeal Tribunal have judicial-like authority for making final decisions on claims for compensation.

While the principles which underlie the administration of workers' compensation in the Yukon have remained straightforward for almost a century, the details which put the theory into practice are rather complicated. An understanding of how the maximum wage rate concept figures into the administration of workers' compensation requires an understanding of how the system operates. This section of the paper presents a framework for analysis which will hopefully facilitate an understanding of the method and limitations on calculating the maximum wage rate.

A.1 Operations Equation

The administration of the 'historic compromise' outlined by the Meredith principles is carried out across all jurisdictions in Canada by some variation of a workers' compensation board (WCB). The boards are governed by directors representing both workers and employers and operate at arms length from their respective provincial or territorial governments. The common and key function undertaken by all WCBs boards is to oversee the administration of the workers' compensation funds into which employers pay assessment premiums and from which workers are paid benefits in respect of work-related disabilities. The basic operation of the fund in all jurisdictions can be described in simple mathematical terms in Equation 1 below. The operations equation is structured the same as an income statement commonly found in a set of year-end financial statements.

Workers' Compensation Operations Equation

Revenue = Expenditures

On the revenue side of the equation, monies paid into the fund are generally of two types. The first, assessment premiums, are paid by employers according to the degree of risk in their particular industry. In some jurisdictions, the calculation of assessment premiums is further refined by systems of experience rating and/or merit rebates where individual employers pay additional assessments and/or receive rebates depending on the past claims cost history of their employees. The second source of revenue for a workers' compensation fund comes from investment income earned on assets owned by the fund.

On the expenditures side of the equation, monies paid out of the workers' compensation fund are also generally of two types. The first, claims expenditures, are paid to workers who suffer work-related disabilities. Claims expenditures commonly include payments for such things as awards for permanent impairment, loss of earnings (wage loss) benefits and death benefits.[1] The second type of expense paid out of workers' compensation funds relates to the administration of the fund. Expenses for occupational health and safety activities are also paid by compensation funds in most jurisdictions, including the Yukon. Table 1 below shows the types of revenues and expenses in the workers' compensation equation together with their values for the YWCHSB in the 2001 fiscal year.

Table 1: Operations Equation - YWCHSB 2001

Revenue ($millions)		**Expenditures** ($millions)	
Assessment premiums	7.2	17.5	Claims expenses
Investment income	9.0	6.9	Administration and prevention
Total[+]	16.6	24.4	Total

[+] Total revenue includes recoveries and miscellaneous revenues of $0.4m
Source: 2001 Audited Financial Statements of the YWCHSB.
Note: The figures presented above are for the most recent year for which YWCHSB audited financial statements are available. The imbalance in the equation in that particular year is not indicative of the overall health of the Yukon's compensation fund. A detailed explanation of the overall health of the compensation fund is provided in the next section of the paper.

The Yukon Workers' Compensation Health and Safety Board was created and operates under authority of the *Workers' Compensation Act,* a territorial statute of the Government of Yukon. Under the provisions of subsection 88.(2) of the *Workers' Compensation Act*, the Board may, by order, make rules consistent with the Act (and the associated regulations made under the Act). The Board may also, under provisions of section 93 of the *Workers' Compensation Act*, make workers'

[1] The complete list of claims expenses paid by the YWCHSB includes: medical aid, compensation for loss of earnings, compensation for loss of personal property, lump sum payments for permanent impairment, rehabilitation assistance, annuities, spousal and dependents benefits, traditional aboriginal healing, clothing allowances, accrued interest and death and funeral expenses.

compensation policy. Through the making of such rules and policies, the Board can alter the balance of the operations equation. Because the balance sheet equation is linked to operations equation through changes in compensation fund reserves, the same Board-made rules and policies may also influence the overall position of the compensation fund.

Policies made by the Board in accordance with the *Workers' Compensation Act* which may alter the balance of the operations equation can take the form of a variety of measures. Such measures may be thought of as a series of levers which can be applied to the operations equation. On the revenue side of the equation the key levers include:

Key Revenue-side Levers

R.1 Maximum wage rate (maximum assessable earnings)
R.2 Assessment rates
- inter-industry risk classification (across industries)
- intra-industry risk classification (within industries)

R.3 Occupational health and safety penalties and fines
R.4 Investment policy (risk/reward tradeoff)

On the expenditure side of the equation the key levers include:

Key Expenditure-side Levers

E.1 Maximum wage rate
E.2 Permanent impairment compensation base amount and age scaling factors
E.3 Weekly loss of earnings inclusion rate and type of wage measure (net/gross)
E.4 Scope of earnings eligible for inclusion in average weekly earnings
E.5 Meaning of 'disability'
E.6 Deeming provisions
E.7 Indexing of benefits payments
E.8 Scope of payments to spouses and dependents
E.9 Volume and quality of occupational health and safety activities
E.10 Volume and quality of rehabilitation services

Note that the balance represented by the *revenues* equal to *expenditures* operations equation is an embodiment of Meredith's historic compromise between employers and workers. The levers of greatest natural self-interest to employers are grouped together on the revenue side and the levers of greatest natural self-interest to workers are grouped together on the expenditure side. In other words, changes to the left hand side of the equation have a greater impact on employers and changes to the right hand side have a greater impact on workers.

A.2 Balance Sheet Equation

By legislative design the YWCHSB is expected to be financially self-sufficient on a year-to-year basis. As a result, it should collect more in revenues than what it pays out in expenditures in a given year. Table 1 above suggests, however, that the operations equation is not in balance since expenses exceed revenues by $7.8 million. Given that the Yukon's compensation fund is in fact in excellent financial health what is the reason for the deficit of $7.8 million? The answer lies in the differences in timing between the collection of assessment premiums and the payment of claims expenses.

Because injuries and disabilities can affect a workers' earning capacity during future years, part of each year's assessment revenues must be set aside to pay for benefits in future years. That is, enough money must be set aside from employer assessments in the current year in order to pay for all future benefits which relate to accidents in the current year. The assessment revenues are set aside in a reserve account within the compensation fund.

In years when compensation fund expenditures exceed revenues, the reserve fund is tapped to bring the operations equation into balance. Conversely, in years when revenues exceed expenditures, the excess is added to the compensation fund's reserve account. Thus, if in a given year expenses exceed revenues it does not imply, provided that there are sufficient reserves, that the fund is insolvent.

Since the basic operations equation considers only revenues and expenditures which take place during a given fiscal year it does not capture the effects of reserve account transactions. As a result, the basic operations equation is not adequate to describe the workings of compensation fund over a period of time longer than one year. An understanding the operations of a workers' compensation fund over an extended period of time requires the use of a second equation, the balance sheet equation, as shown below.

Workers' Compensation Balance Sheet Equation

Assets = Liabilities + Reserves

On the assets side of the equation, major assets owned by workers' compensation boards are in the form of investment assets and capital assets. In the Yukon, investment assets are held in fixed term securities, equities and cash and other short-term investments. Capital assets owned by the YWCHSB consist mainly of its Strickland Street offices (including furniture and equipment).

The right hand side of the balance sheet equation is comprised of two components, liabilities and reserves. Liabilities consist mainly of future commitments to pay

compensation benefits in respect of accidents which have already occurred. Such benefits liabilities are recalculated and certified by a qualified actuary on an annual basis.

The reserve component of the balance sheet equation includes money earmarked for the expected payment of future compensation benefits and prevention activities. As will be explained in greater detail below, the reserves of the Yukon's compensation fund also includes some "surplus" reserves. Table 2 below shows the asset, liability and reserve components of the workers' compensation balance sheet equation together with their values for the YWCHSB in the 2001 fiscal year.

When it happens that a compensation board has not set aside enough reserves so that future benefit liabilities can be met from the current sum of money in its compensation fund, the fund is said to have unfunded liabilities. If too much money has been set aside, the fund is said to be in surplus. When the amount held in reserves is equal to future benefit liabilities the fund is said to be fully funded.

Table 2: Balance Sheet Equation - YWCHSB 2001

Assets ($millions)		Liabilities and Reserves ($millions)	
Investments	136.9	80.8	Benefits liability
Capital Assets	3.3	59.6	Reserves
Total[+]	140.4	140.4	Total[++]

[+] Total assets includes accounts receivable valued at $0.2 million.
[++] Total liabilities and reserves includes accounts payable and bank overdrafts valued at a total of $2.7 million.
Source: YWCHSB 2001 Audited Financial Statements.

The reserves of the Yukon's compensation fund include two "surplus" amounts. The first, termed the "Rate Transition Reserve" in note 7 which accompanies the Board's 2001 audited financial statements, was valued at $15.0 million on December 31, 2001. The second, known as the "Prevention and Benefit Enhancement Reserve, contained $14.8 million on December 31, 2001. Together, the excess reserve amounts represent the amount by which the compensation fund was in surplus at that time; the Yukon's compensation fund is currently more than fully funded.

An industry-standard calculation is used to compare the degree to which a compensation fund is in surplus or has unfunded liabilities from year to year or between jurisdictions. Known as the "percentage funded" calculation, it consists of dividing total balance sheet assets by the sum of total liabilities and net reserves. The net reserves figure is not to include excess reserves or unfunded liabilities. At the end of 2001, the Yukon's compensation fund was 126.9 percent funded.[2]

[2] Calculated as total assets ($140,374,000) divided by the sum of liabilities and net reserves ($80,824,000 + $29,155,000). Net reserves are calculated as total reserves less the sum of the Prevention and Benefits Enhancement Reserve and the Rate Transition Reserve (59,550 - (15,023 +

Note that the operations equation and the balance sheet equation are linked through the reserve account. Repeated years' of operating deficits will draw down the compensation fund reserves and push the fund towards a position of unfunded liabilities. Conversely, repeated operating equation surpluses will move the fund towards a position of percentage funded ratios which exceed 100 percent.

A.3 Compensation Equation

Under provisions of the current version of the Yukon *Workers' Compensation Act,* workers who suffer work-related disabilities are compensated using a "dual award" approach. Under the dual award approach, workers receive two amounts. The first is in the form of a wage loss (or, loss of earnings[3]) benefit. The second part of the dual award, which is paid in addition to the wage loss benefit, is a one-time award paid to workers who suffer permanent impairment calculated according to the degree of permanent functional impairment.

As shown in Equation 3, workers' compensation wage loss benefits are calculated as 75% of a worker's weekly loss of earnings from all employment. A workers weekly loss of earnings is the difference between average weekly earnings before disability and what the worker could earn in a suitable occupation after the disability arose, as determined by the Board. A given worker's average weekly earnings cannot exceed the maximum wage rate for a week which is defined as the maximum wage rate for the year divided by 52.

Compensation Equation

wage loss benefit = 75% *times* (average weekly earnings before disability *minus* average weekly earnings after disability)

Wage loss benefits are paid to the worker until such time as they are fully able to return to work in a suitable occupation.[4] As result, the move to a wage loss benefit system in the Yukon meant that year-to-year changes in the maximum wage rate became correspondingly more important for workers. An increase in the maximum wage rate for a year means higher benefits levels for those workers whose benefits are

14,750)). This calculation methodology differs from that used by the Association of Workers' Compensation Boards of Canada. The AWCBC calculation does not include the value of the Prevention and Benefits Enhancement Reserve and results in a percentage funded ratio of 112.0%.

[3] The phrase "wage loss benefits" refers to the same concept described by the phrase "loss of earnings benefits" used in the Yukon *Workers' Compensation Act*. Both phrases are used interchangeably in this paper and throughout the Subsection 105.(1) Research Series.

[4] Benefits paid to workers whose disabilities reduce their employment earnings for a period of time longer than one year are indexed to allow for a) increases in earnings due to forgone opportunities for promotion and advancement and b) changes in the general wage level as represented by the Aggregate Industrial Wage.

limited by the maximum rate. An increase in the maximum wage rate also results in higher payroll tax costs to employers as maximum assessment levels increase.
With a framework for analysis now fully laid out, the remainder of this paper will focus on the method and limitations on calculating the maximum wage rate.

PART B: Method and Limitations on Calculating the Maximum Wage Rate

One of the key operations equation levers, the maximum wage rate, appears on both sides of the equation.[5] This is because the maximum wage rate serves a dual purpose. On the revenue side of the equation, it sets a ceiling on the assessment premium paid by a employer in respect of a given worker. On the expenditure side, the maximum wage rate sets a ceiling on how much of a workers' earnings are insured which in turn determines the limit on how much a worker can receive in the form of wage loss benefits.[6]

In terms of the operations equation, an increase in the maximum wage rate will increase the amount of assessment revenue collected as assessment rates are applied against a higher range of earnings. The same increase in the maximum wage rate would also serve to increase compensation fund expenditures as workers with benefits limited by the maximum wage rate would see their benefit entitlements rise.

Note that the mechanics of the wage loss benefit calculation is the same whether a worker's disability is considered to be "temporary" or "permanent". As a result, the application of the maximum wage rate concept to the calculation of wage loss benefits does not vary according to the duration of a worker's disability.[7,8] In conclusion, the maximum wage rate plays an important role in the operations equation and in turn, the balance sheet equation.

B.1 Mechanics of the Maximum Wage Rate Calculation

How can the maximum wage be calculated? The final report of the Nova Scotia Workers' Compensation Review Committee completed in March 2002 notes that:

[5] Different jurisdictions use different terms for the concept of the maximum wage rate. For example, in the Northwest Territories/Nunavut the term Year's Maximum Insurable Remuneration is used while Nova Scotia uses the term Maximum Insurable/Assessable Earnings.

[6] Because the maximum wage rate is both a revenue-side and expenditure-side lever it, in a sense, also embodies the historic compromise between employers and workers.

[7] This is not to say that workers who suffer permanent impairment(s) as a result of a workplace disability necessarily receive the same level of compensation as workers who suffer temporary impairment(s). Workers who suffer a permanent impairment are eligible for a one-time financial award calculated according to the degree of permanent impairment in addition to wage loss benefits. Workers who receive wage loss benefits for more than one year have their benefits increased automatically on an annual basis using an indexing formula which considers forgone wage increases and price inflation.

[8] Note that while the same formula is used to calculate wage loss benefits in the circumstance of either temporary or permanent impairment, different measures of average weekly earnings which vary according to the "employment profile" of the worker are used in the wage loss calculation. Descriptions of the measures of average weekly earnings and the definition of "employment profile" can be found in YWCHSB Policy CL-35: Loss of Earnings Benefits.

> "There is no universally accepted benchmark for determining an appropriate maximum. One approach is to set a maximum amount that ensures the desired percentage of workers is provided with full coverage because they earn below the maximum. Another approach is to set the maximum and tie the changes to increases in the cost of living or the average industrial wage or some other benchmark in the province or territory. Another is to set the amount and adjust it periodically." [9]

The Yukon's compensation board has used all three of the approaches outlined in the Nova Scotia report, as well as a fourth, over the last twenty years. Each of the four approaches are described below according to their period of use. Maximum wage rates used by the YWCHSB during the 1983 to 2001 period are shown in Chart 1 on page 12.

B.1.1 Maximum Wage Rate Calculation 1983 to 1992

The approach used by the Yukon Workers' Compensation Board during the 1983 to 1992 time period to calculate the maximum wage rate was the only one not identified in the Nova Scotia study. The calculation then used was based on the annual equivalent of the average weekly earnings of compensation claimants who were injured in the previous year.[10]

By way of example, consider three workers A, B and C who were all injured in the proceeding year. If A, B, and C had average weekly earnings of $500, $750 and $1,000, respectively, their average weekly earnings would be $750. Multiplying by 52, the number of weeks in a year, the annual equivalent of their average weekly earnings and the maximum wage rate for the current year would be $39,000.

While laudable for its simplicity, two shortcomings of this approach are immediately obvious. The first is that the calculation considers only the few workers who are injured on the job and ignores the many who are not. Thus, to the extent that workers in occupations with a high risk of injury are compensated for that risk through higher wages the resulting maximum wage is too reflective of the earnings of workers in higher risk occupations. As a result, employers with workers in lower-risk occupations could end up paying more in assessment premiums than might be the case under an alternative approach to calculating the maximum wage rate.

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[9] Government of Nova Scotia, The Nova Scotia Workers' Compensation Program: A Focussed Review, March 2002, page 155.

[10] Note that under provisions of the 1983 version of the Yukon *Workers' Compensation Act,* eligibility for compensation required that a worker suffer an injury while the 1993 version of the *Act* requires that a worker suffer a disability.

The second shortcoming is that only a single year is used as the reference point for calculating the maximum wage rate. Given that the incidence of injury will vary from year to year according to changes in economic factors, such as the opening and closing of mines, a single years' worth of information about injury may be an unreliable indicator of what is likely to happen in the future year. In other words, the actuarial soundness of such an approach is likely questionable.

B.1.2 Maximum Wage Rate Calculation 1993 to 2003 and Beyond

A number of amendments to the Yukon *Workers' Compensation Act* came into force in 1993. Among them, in section 101, was a series of four changes in the calculation of the maximum wage rate to be implemented in 1993, 1994, 1998 and 2003. Three distinct methodologies, similar to the three identified in the Nova Scotia report, were specified for use by the 1993 amendments.

Change 1 - 1993

For workers disabled in 1993, the maximum wage rate was simply set at $50,000 which represented a $10,000 increase from 1992.

Note that the 1993 amendment, and the associated change in the calculation of the maximum wage rate, does not apply to workers who were disabled before 1993. In order to ensure the future health of the compensation fund, workers who are injured or disabled in a specific time period are treated under the rules in place at that time. This is because decisions about the future value of a disabled workers' liability are made at the time of disability and are entered into the operations equation at that time. Changing assumptions about how a future liability for a given worker is calculated after assessment premiums have long since been collected for the benefit of that worker can have significant implications for the health of the compensation fund.

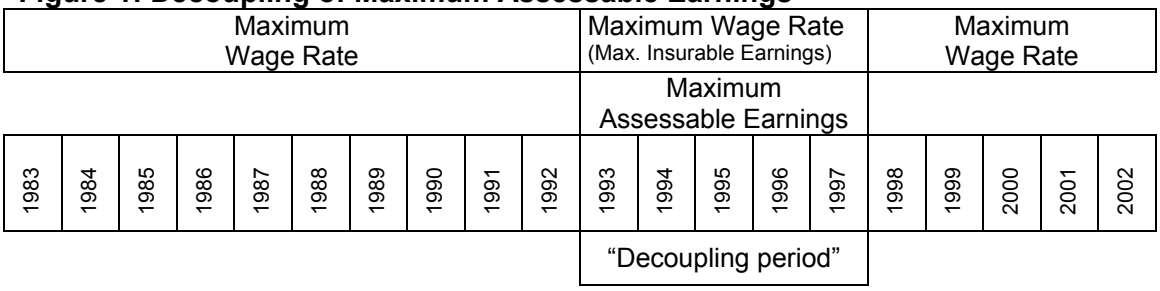
While this operating construct of actuarial equity, whereby benefits are paid according to the rules in place at the time of injury or disability is sound in theory, the change in methodologies between 1992 and 1993 did create an operational quirk in the post-1992 period. Recall that the calculation of the maximum wage rate in a given year in the 1983 to 1992 period was based on the weekly earning of workers injured in the previous year. However, because all workers disabled after 1992 are compensated under the rules outlined under the 1993 amendment, the number of workers injured in the previous year covered by the pre-1993 rules quickly dropped to zero. In effect, there were no longer any workers qualifying as injured for the purposes of calculating the maximum wage rate under the pre-1993 legislation. As a result, the maximum wage rate for 1993 which applied to workers injured prior to 1993 remained at its 1992 value of $40,000.

As was mentioned earlier in this paper, the maximum wage rate typically serves a dual purpose. On the revenue side of the operations equation, it sets a ceiling on the assessment premium paid by a employer in respect of a given worker. On the expenditure side, it sets a ceiling on how much of a workers' earnings are insured which in turn determines the limit on how much a worker can receive in the form of compensation benefits.

The 1993 version of the *Workers' Compensation Act* also introduced the notion of decoupling the maximum wage rate into two distinct concepts: maximum assessable earnings and maximum insurable earnings. The introduction of decoupling was made even more subtle by the fact that maximum insurable earnings continued to be referred to as the maximum wage rate.

For assessments levied in 1993, maximum assessable earnings were set at $43,000. Thus, a $7,000 gap was legislated between maximum assessable earnings and maximum insurable earnings. Figure 1 below outlines the timeline for the decoupling of maximum insurable earnings (maximum wage rate) and maximum assessable earnings.

Figure 1: Decoupling of Maximum Assessable Earnings



Note that while the introduction of decoupling was a legitimate approach to adjusting the operations equation it was not without equity implications. While decoupling maximum assessable earnings from the maximum wage rate has a similar effect on fund revenues as modifying assessment rates, it serves to reduce vertical equity among employers. This is because employers who tend to pay lower aggregate wages, such as those in seasonal industries, continue to pay the same aggregate assessment premiums. At the same time, employers in industries which pay relatively higher wages face lower aggregate premiums than would be the case if the level of maximum assessable earnings had risen in 1993 with maximum insurable earnings.

Change 2 - 1994 to 1997

Between 1994 and 1997, the methodology for calculating the maximum wage rate and maximum assessable earnings introduced year-to-year adjustments which reflected changes in economy-wide earnings levels. With respect to the maximum wage rate,

the adjustments incorporated changes in the average weekly earnings of workers as measured by Statistics Canada.[11] The methodology specified that the maximum wage rate was to be modified by multiplying the base amount of $50,000 by the quotient obtained when the average wage for the year is divided by the average wage for 1993. Note that the Yukon legislation requires that the average wage be calculated on the basis of the 12 month period starting in July and ending in June.

Similar to the maximum wage rate methodology, maximum assessable earnings were also adjusted according to changes in annual average wages relative to 1993 levels during the 1994 to 1997 period. The base amount of $43,000 was multiplied by the same quotient of average wages described in Table 3. In order to bring maximum assessable earnings back in line with the maximum wage rate, the 1993 legislative amendment also required that in addition to adjusting for changes in relative wage levels, maximum assessable earnings be increased by $3,000 each year.

Table 3: Yukon Average Wage and Adjustment Quotient

Reference Period	Year	Average Wage ($)	Quotient
July 1991 to June 1992	1993	34,964	1.000
July 1992 to June 1993	1994	36,145	1.034
July 1993 to June 1994	1995	36,516	1.044
July 1994 to June 1995	1996	36,127	1.033
July 1995 to June 1996	1997	35,860	1.026

Source: Statistics Canada Cansim Table 281-0026 (Industrial Aggregate excluding overtime).
Note: The average wage figures above were calculated using Statistics Canada data which were revised in 2001 in order to conform with the North American Industrial Classification System (NAICS). As result, the average wage figures and quotients may differ from those actually used by the YWCHSB which were based on the Standard Industrial Classification (SIC).

Under the amendment, increases in maximum assessable earnings were capped at the level of maximum insurable earnings. At no time could maximum assessable earnings be greater than the maximum wage rate for the year in question. As a result, the measures of maximum wage rate and maximum assessable earnings were "recoupled" in 1996. In the absence of a cap, the calculation would have resulted in a maximum assessable earnings level greater than the maximum wage rate. Because of the cap on maximum assessable earnings the two measures came, once again, to have the same meaning.

Change 3 - 1998 to 2003

The maximum wage rate calculation methodology specified for use after 1997 by the 1993 amendments introduced the Yukon for the first time to a "target percentage" approach. Under such an approach, the maximum wage rate is set at an amount that ensures a desired target percentage of workers is provided with full coverage because

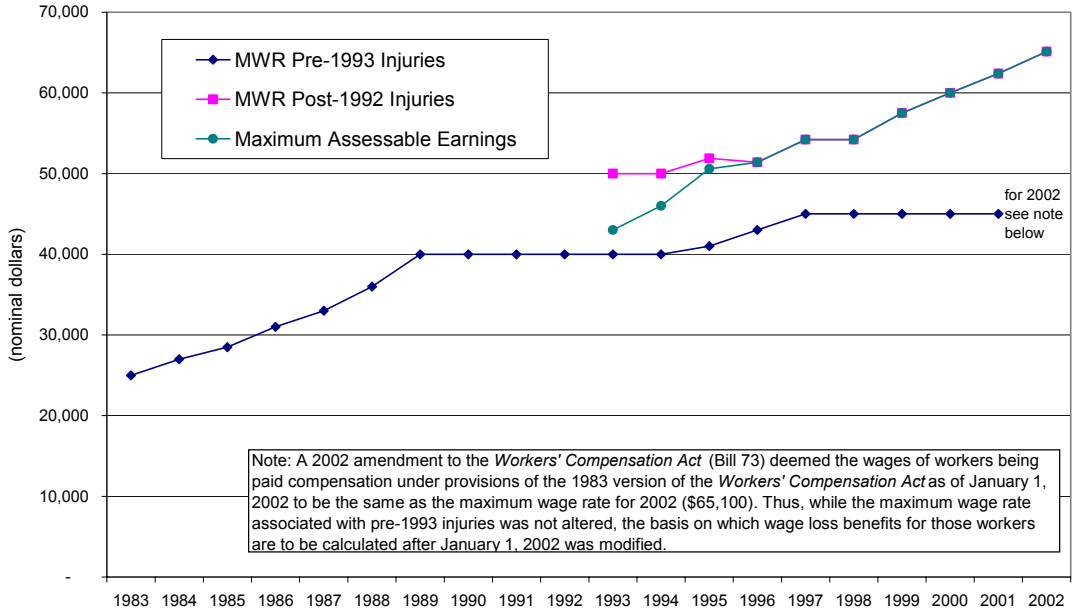
[11] Average weekly earnings calculations made by Statistics Canada are based on their monthly Survey of Employment, Payroll and Hours. The YWCHSB has historically made use of average weekly earnings figures which exclude overtime.

they earn below the maximum. The target specified for use in the Yukon was 90 percent. Thus, under this approach, the maximum wage rate was to be set each year by the Board beginning in 1998 so that it would "increase in equal amounts until 2003 at which time it will be equal to the yearly earnings of 90 percent of workers".

In other words, the intention of the methodology was that by 2003 only workers with incomes in the top ten percent of the overall income range would not have all of their earnings insured for purposes of workers' compensation. While simple in theory, however, the maximum wage rate calculation, as specified, is methodologically quite awkward. This is because the maximum wage rate must a) increase in equal amounts and b) be equal to an amount which would not be known with complete certainty until many years later.

In order to meet the requirements of the 1998 to 2003 approach, inflation-adjusted projections of the earnings of 90 percent of workers were made using linear regression techniques. The projections were based on Statistics Canada data derived from personal income tax returns filed in the Yukon. The data set used for the initial projection spanned the period 1980 and 1995 and was expanded to include additional years as Statistics Canada data for subsequent taxation years became available.

Chart 1: YWCHSB Maximum Wage Rates and Maximum Assessable Earnings - 1983 to 2002



Source: Yukon Workers' Compensation Health and Safety Board

Change 4 - 2004 and Beyond

The maximum wage rate calculation methodology specified for use after 2003 by the 1993 amendments both builds on the 1998 to 2003 calculation approach and represents a return to the 1994 to 1997 methodology. Under the approach specified

for use after 2003, the base maximum wage rate is set equal to the maximum wage rate projected for 2003. The base amount is then modified by multiplying the maximum wage rate for 2003 by the quotient obtained when the average wage for the year in question is divided by the average wage for 2003.

B.2 Interjurisdictional Comparisons: Maximum Wage Rate

As described in section 3, the approaches to the calculation of the maximum wage rate used in the Yukon over the last decade provide a comprehensive survey of the approaches used in all other Canadian jurisdictions. All approaches attempt to provide balance between the revenue and expenditure sides of the operations equation.

The maximum wage rates for all jurisdictions in Canada (as at August 2002) are presented in Table 4 and Chart 2 below. The rates range from a low of $39,300 in Prince Edward Island to a high of $65,100 in the Yukon.

A now-unique feature of the Yukon workers' compensation system bears mention here. All jurisdictions in Canada use some variation of a wage loss approach in calculating temporary workers' compensation benefits. With a change by British Columbia in June 2002, all jurisdictions except the Yukon now base replacement earnings payments on a measure of net income rather than gross income. An earnings loss replacement rate of between 75 and 90 percent is applied to gross earnings less deductions for employment insurance, Canada/Quebec pension plan premiums and income tax. In the Yukon, an earnings loss replacement rate of 75 percent is applied against a measure of earnings which is not reduced by any type of source deduction.

In order to make a reasonable comparison of maximum wage rates between jurisdictions, an analysis of the net result of combining a maximum wage rate with an earnings replacement rate was undertaken. Using data from the Association of Workers' Compensation Boards of Canada, maximum weekly wage loss benefits paid during the first year of disability were annualized for all jurisdictions (Chart 2).[12] In jurisdictions where the weekly payment is constant for 52 or more weeks, this simply meant multiplying the maximum weekly rate by 52. For example, the Alberta weekly maximum of $735.24 was multiplied by 52 to arrive at an annualized figure of $38,232.48.

In jurisdictions which pay one rate for a given number of weeks and another for an additional number of weeks, annualizing of the weekly benefits meant averaging the weekly maximums according to their duration. For example, in Prince Edward Island benefits are calculated as 80 percent of net earnings for the first 38 weeks after

[12] Table 10, *Comparison of Workers' Compensation Legislation in Canada 2002*, Association of Workers' Compensation Boards of Canada, page 93.

disability and then 85 percent of net earnings for disabilities with a duration of 39 weeks or more. To arrive at an annual amount of $23,201, the initial weekly maximum of $438.79 was multiplied by 38 weeks and the result was added to product of the post-38 weekly maximum of $466.22 and 14 weeks.

Chart 2: Maximum Wage Rate and Annualized Maximum Weekly Wage Loss Payment During First Year of Disability
(as at August 2002)

Source: Adapted from Tables 10 and 11 in *Comparison of Workers' Compensation Legislation in Canada 2002*, Association of Workers' Compensation Boards of Canada

Note that the analysis did not consider differences in waiting periods between jurisdictions and that the annual amounts relate to wage loss payments made during the first year of a disability only. The calculations do not include lump sum payments made to workers' disabled in jurisdictions which have dual award systems in place.

As Table 4 and Chart 2 demonstrate, the annualized maximum weekly wage loss payment during the first year of disability is also highest in the Yukon at $48,825 and lowest in Prince Edward Island at $39,300. The average annualized maximum weekly wage loss payment across all 12 jurisdictions is $35,739.

Table 4 also describes the approaches used in various jurisdictions to adjust the maximum wage rate on a year-to-year basis. Only one jurisdiction, Newfoundland and Labrador, does not make an annual adjustment to its maximum wage rate. In that jurisdiction, the maximum wage is to remain constant until the Aggregate Industrial Wage for the province multiplied by 150 percent reaches or exceeds ($45,500). Once the threshold of $45,500 is attained, the maximum wage rate will then be increased on an annual basis according to changes in the consumer price index.

Table 4 : Interjurisdictional Comparison of Maximum Wage Rates

	Maximum Wage Rate* ($)	Earnings Loss Replacement Rate**	Annualized Maximum Weekly Wage Loss Payment During First Year of Disability ($)	Method of Maximum Wage Rate Adjustment
Alberta	58,000	90% of net	38,232	annual formula (consumer price index)
British Columbia	59,600	90% of net	44,578	annual formula (average wage)
Manitoba	54,590	90% of net for first 24 months of cumulative benefits, then 80% of net	38,232	annual formula (average wage)
New Brunswick	47,600	85% loss of earnings (average net earnings minus net estimated capable earnings)	28,449	annual formula (consumer price index)
Newfoundland	45,500	80% of net	26,703	no change until specified average wage threshold reached ($45,500), then annual increase based on consumer price index
NWT/Nunavut	63,350	90% of net	47,751	annual Board order
Nova Scotia	41,100	75% of net for first 26 weeks, then 85% of net	24,879	annual formula (average wage)
Ontario	64,600	85% of net	42,792	annual formula (average wage and consumer price index)
Prince Edward Island	39,300	80% of net for first 38 weeks, then 85% of net	23,201	annual formula (consumer price index)
Quebec	52,500	90% of net	36,772	annual formula (average wage)
Saskatchewan	48,000	90% of net	32,455	annual formula (average wage)
Yukon	65,100	75% of gross (100% of gross if annual employment earnings less than $16,000)	48,825	annual formula (annual earnings of 90% of workers)

Sources: *Comparison of Workers' Compensation Legislation in Canada 2002,* Association of Workers' Compensation Boards of Canada, 2002.
Notes:
* termed maximum insurable earnings or maximum assessable earnings in some jurisdictions.
**net earnings are equal to gross earnings less deductions for Employment Insurance, Canada/Quebec Pension Plan and Income Tax.

Other jurisdictions, including Alberta, New Brunswick, Ontario and Prince Edward Island, also use the consumer price index to keep their maximum wages rates in line with price inflation. As an alternative to inflation-based approaches to adjusting the maximum wage rate, some jurisdictions tie changes in the maximum wage rate to a Statistics Canada measure of average wages. British Columbia, Manitoba, Nova Scotia, Quebec and Saskatchewan all use the average wage approach as does Ontario which uses it in combination with an inflation-based approach.

Note that while price inflation has over the last decade increased year after year by relatively small amounts, changes in average wages can be much more variable. Average wages can increase or decrease between years according to changing economic circumstances. Thus, a trade-off exists between matching the maximum wage rate with recent economic activity and stability in compensation benefit levels.

B.3 Issue Identification: Maximum Wage Rate

As has been demonstrated earlier in this paper, the setting of the maximum wage rate is of significant importance to both sides of the operations equation. By way of example, consider an increase of five percent in the Yukon's maximum wage rate from its current level of $65,100 to $68,400. The increase will serve to increase both revenues (through higher aggregate premiums) and expenditures (through higher benefit levels). Note, however, that the relative increase in revenue and expenditures may not be equal to five percent and that the relative increase may not be the same on both sides. A five percent increase in the maximum wage rate could result in a one percent increase in revenues and a four percent increase in expenditures. The reverse could also be true.

The determination of the relative quantitative impacts on revenues and expenditures from a change in the maximum wage rate would require advanced modeling and analysis which is well outside the scope of this paper. The observation that can be made, however, is that changes to the maximum wage rate may have impacts on the health of the compensation fund which are not immediately obvious but which only become apparent over time. For example, if an increase in the maximum wage rate has a higher relative impact on the revenue side of the equation than the expenditure side, the fund may accumulate an unintended surplus.

A second observation to be made is that the health of the fund is reliant upon a set of complex variables and factors of which the maximum wage rate is but one. Thus to tinker with the maximum wage rate can have impacts which go beyond simple revenue and expenditures.

A third observation for consideration is that the maximum wage rate is an effective compensation fund lever. In the Yukon context, compliance with the concept of

actuarial equity, whereby benefits are paid according to the rules in place at the time of injury or disability, is a statutory requirement. It necessarily follows that changes to the maximum wage rate must be made with care. Changes of a discontinuous nature such that the maximum wage rate "jumps" from one level to another, as was implemented in 1993, must be made with even greater care. A recent amendment to the Yukon *Workers' Compensation Act* (Bill 73) which adjusted the wages of approximately 27 workers injured prior to 1993 to be equivalent to the maximum wage rate in 2002 speaks to this need for care.

References

Association of Workers' Compensation Boards of Canada. *Comparison of Workers' Compensation Legislation in Canada 2002*. 2002.

Association of Workers' Compensation Boards of Canada. *Key Statistical Measures*. Various years.

Association of Workers' Compensation Boards of Canada. *Workers' Compensation Benefit Comparisons 2002*. 2002.

Bell, Doug. *History of the Yukon Workers' Compensation Board*. Yukon Worker's Compensation Health and Safety Board. December 1996.

Bemjamin, Dwayne, Morley Gunderson and Craig W. Riddell. *Labour Market Economics* (fifth edition). McGraw-Hill Ryerson Limited. 2002.

Chaykowski, Richard P. and Terry Thomason, eds. *Research in Canadian Workers' Compensation*. Industrial Relations Centre, Queen's University. 1995.

Government of British Columbia. *A Review of Workers' Compensation Legislation: Discussion Paper*. Ministry of Skills Development and Labour. June 2002.

Government of British Columbia. *For the Common Good*. Royal Commission on Workers' Compensation in British Columbia (final report). January 1999.

Government of Nova Scotia. *The Nova Scotia Workers' Compensation Program: A Focused Review*. Workers' Compensation Review Committee. March 2002.

Government of Yukon. *Workers' Compensation: Building on the Basics*. Yukon Workers' Compensation Board. 1992.

Ison, Terence G. *Workers' Compensation in Canada* (second edition). Butterworths. 1989.

Thomason, Terry et. al. *Chronic Stress: Workers' Compensation in the 1990's*. C.D. Howe Institute. 1995.

Vaillancourt, Francois. *The Financing of Workers' Compensation Boards in Canada, 1960-1990*. Canadian Tax Foundation (Canadian Tax Paper No. 98). 1994.

Winter, Alan. *Core Services Review of the Workers' Compensation Board*. Report prepared for the Government of British Columbia. March 2002.

Workers' Compensation Act. S.Y. 1992, c. 16. (February 2000 office consolidation).

Yukon Workers' Compensation Health and Safety Board Annual Report 2001. Yukon Workers' Compensation Board. 2002.

Yukon Workers' Compensation Health and Safety Board Audited Financial Statements. Yukon Workers' Compensation Board. Various years.

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