What's New!

ProVal

ProVal version 2.14 **April 1999**

ProVal version 2.14 introduces several new features including gain & loss analysis and a new mode for Canadian Registered Pension plans. You'll find details about these and other new enhancements to ProVal below.

Gain/loss

- Gain/Loss Analysis is now available on the Tools menu. This tool computes liability gains & losses for sources such as active decrements, inactive mortality, salary growth, regulatory increases, and more. (See the article on page 3 for a detailed discussion of this new feature.)

General

- A new mode has been added named Canadian Registered Pension. This mode includes Canadian accounting and funding standards by province. (See page 6 for a brief review of this new mode.)
- ProVal's existing four modes have been renamed U.S. Qualified Pension, OPEB (Retiree Medical), Public Pension, and SERP (Non-Qualified) Pension.
- All ProVal graphs will now be displayed in a single window. In addition, the menus in this window have been arranged to better conform to Windows standards.

Database

- The #ROUND operator has been expanded to optionally accept a number of decimal places as a left argument. If omitted, it defaults to 0. For example,
  #ROUND 123.456 is 123
  2 #ROUND 123.456 is 123.46
  -1 #ROUND 123.456 is 120
- The Merge / Update File command now allows a selection expression to be applied to the update file, and it optionally creates a MergeStatus field that classifies each record as Matched, Unmatched, or Appended. In addition, several options in the merge command have been restructured for clarity and ease of use.

Census Specifications

- Inactive benefit amounts can now be defined in terms of an expression, not just a single database field.

Benefits

- Several new options have been added to custom operators. They include an additional salary limit option (lesser of IRC 401(a)(17) compensation or social security wage base) for the salary and final average salary operators, several new covered compensation calculation alternatives, and the ability to project salaries backward based on the National Average Wage or a specified rate, rather than the valuation salary scale, for the PIA operators.

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- For "project and prorate" accrual rates, the projection age is now allowed to be greater than the 100% assumed retirement age.

Valuation Assumptions

- Interest rates for RPA '94 current liability, OBRA '87 current liability, and PBGC variable premium liability can now be "looked up" from ProVal's internal database of rates.
- The "1994 Group Annuity Mortality Static Table" has been added to the default mortality tables that appear when creating a new ProVal client. Also, the maximum age allowed in a table has been increased to 120 from 111 to accommodate this table.
- Historical Regulatory Data (maximum benefit, maximum compensation, etc.) has been updated with 1999 values.

Sample Lives

- The presentation of sample lives has been expanded to include more reports and more information. In U.S. Qualified Pension mode, this includes new reports for vested liabilities and RPA '94 current liability. In OPEB mode, this includes new reports to show pre-decrement values.
- The window in which sample lives are shown can now be maximized to utilize the entire screen.

Asset & Funding Policies

- The Update button now updates prior year values as well as amortization bases; any unknown values are blanked out.
- Several new accounting standards have been added: IAS 19 (available in all modes except Public Pension), proposed CICA 3460 (available in all modes except U.S. Qualified Pension and Public Pension), and current CICA 3460 (available in Canadian Registered Pension mode only). (See page 5 for a discussion of IAS 19 versus FAS 87/106.)
- The total of accounting amortization bases is now displayed on screen. This serves as an added check against typos.
- A new contribution policy has been added in OPEB mode called "funded ratio dependent contributions". The funded ratios are user-defined and the contribution is:
  - specified flat dollar + benefit payments + expenses when below the lower funded ratio threshold,
  - specified flat dollar when at or above the lower funded ratio threshold but below the upper funded ratio threshold, and
  - $0 when at or above the upper funded ratio threshold.
- An "N-year Performance Index" family of asset valuation methods has been added for both funding and accounting in all modes. Under this method the user specifies the historical performance index values, the relative weight for each value, whether or not a growth rate should be applied and what proportion of the assets should be smoothed. (See page 7 for more details on this new method.)

Exhibits

- The accounting exhibit "Reconciliation of Funded Status..." now includes a reconciliation of PBO/APBO as required under FAS 132.
- A new exhibit for "Accounting Amortization Bases" has been added to Valuation Set Exhibits.

- A new exhibit for "Development of Minimum Basis Amortization" has been added to Determinstic Forecast Exhibits.

Help

- Context sensitive help (accessed by pressing F1 while in a ProVal dialog) has been added to Nondiscrimination Tests, Census Specifications, Plan Benefit Definitions, and Reference Tables.
- Command Reference help for Census Specifications and Plan Benefit Definitions has been expanded to OPEB mode.
- Help for expressions (accessed by pressing F1 while in a ProVal expression or benefit formula) can now be printed.

Changes Log

- Be sure to read the changes log (see What's New in Help or the CHANGES.LOG file in the ProVal directory) about negative FIL bases, RPA Current Liability, updates to frozen covered compensation tables, service-based merit scales used in conjunction with the #PIA operator or imputed valuation salary, "project & prorate" accrual rates with 0 service required for the ultimate accrual, #ROUND, and forecasting COLAs.

Using the Gain/Loss Analysis Tool

This tool computes liability gains & losses from active decrements, inactive mortality and new entrants. Additional sources, such as data corrections, salary growth and regulatory increases are optional. If not turned on, gains or losses due to these sources will appear as "unreconciled" along with other miscellaneous gains and losses.

To run gain/loss analysis, choose **Gain/Loss Analysis** from the **Tools** menu. Each of the gain/loss analysis topics are discussed below:

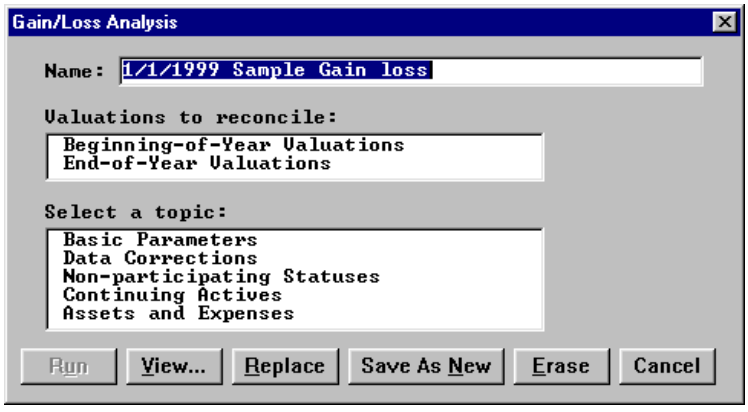
Valuations to Reconcile

You must specify the beginning-of-year and end-of-year valuations to reconcile. Just like in a valuation set, the results will be summed if multiple valuations are specified. In any case, all valuations must already have been run and saved in the same ProVal client.

Keep in mind that the beginning and end-of-year valuations should use consistent assumptions and benefits. That is, the end-of-year valuation should be your baseline valuation before reflecting assumption changes or plan changes.

Basic Parameters

A key field is used to track records from the beginning to the end of the year. Unique keys are required, but only among the records meeting the selection expressions (if any) in the beginning and end-of-year valuations.



Data Corrections

To allocate data corrections to its own source (otherwise it will appear as "unreconciled"),

you need to prepare a copy of your beginning-of-year database with corrected data. Incidentally, this database might even include additional records or exclude some of the original records if the beginning-of-year population was flawed.

Non-Participating Statuses

This topic is only applicable if you have non-participating statuses in your end-of-year valuation. It is used to explain (in terms of a decrement) otherwise "mysterious" disappearances. For example, if an active becomes non-participating, the true cause may be that she became disabled and collects no benefit from the plan. The translated statuses are used only to determine the cause of decrement; they do not affect the valuation of liabilities.

You may choose to let ProVal default to its best guess – termination or retirement (depending on eligibility) for actives and death for inactives. To do this, specify "Exclude" as the treatment.

Tip: If you have multiple end-of-year valuations which use the same census specifications, you can save time by mapping non-participating statuses once – then copying and pasting for the remainder.

Continuing Actives

You may skip this topic if your plan is not pay-related and is unaffected by maximum benefits, maximum compensation, covered compensation, social security wage bases or PIA. Otherwise, you should press **Ctrl+A** to select all continuing active sources.

By default, selecting all continuing active sources will produce two groups (identified by "source numbers"): (1) salary growth and

A quick way to create a database with data corrections (this method will capture many changes, but not necessarily all) is:

1. Make a copy of the beginning-of-year database
   a. From the **File** menu, click **Copy Files**
   b. Choose your beginning-of-year database as the **File to copy**, e.g. "1998 database.sf".
   c. Type in a new name for the **File to create**, e.g. "1998 corrected database.sf".
2. Merge corrected data in from the end-of-year database
   a. From the **Database** menu, point to **Current Database,** and then click **Open…** Choose the corrected database, e.g. "1998 corrected database" and click **OK.**
   b. From the **Database** menu, point to **Import / Export Data,** and then click **Merge / Update File.**
   c. Follow the Merge / Update wizard's instructions, merging in fields for birthdate, hiredate, historical pays, sex, beneficiary sex, beneficiary birthdate, service start dates, and any frozen benefits.
3. List the changes in dates and pays
   a. From the **Database** menu, point to **Screen Data,** and then click **Compare Database Files.**
   b. Select the original beginning-of-year database as the **Prior year** and the corrected database as the **Current year.** Also select a **key field.**
   c. Click the **Compare Fields** button.
   d. In the compare fields spreadsheet, enter the date and pay fields you merged during step (2)(c) above. Enter 0 in the "minimum tolerance" and "maximum tolerance" columns. Enter "No" in the "%" column.
4. List the changes in sex
   a. From the **Database** menu, click **Status Reconciliation.**
   b. Select the original beginning-of-year database as the **Prior year** and the corrected database as the **Current year.** Also select a **key field.**
   c. Choose your sex field as the **Status** field and **Run.**
   d. Repeat step (c) using the beneficiary sex field.
5. Scan the list of changes and use **Spreadsheet Edit** to restore values for legitimate changes (e.g., a change in birthdate and sex because a retiree died, leaving a surviving beneficiary).

(2) regulatory increases. Each separate group means an additional pass, so for the fastest run, group them all together (you can change the source number by pressing the **Sources…** button). On the other hand, for the greatest detail, assign each item to its own group. Note that the order will affect the allocation of gains and losses.

Assets & Expenses
Entering asset information will not only provide you with the asset gain/loss (an easy hand calculation), but it will also provide a reconciliation of the unfunded (for immediate gain methods) or a reconciliation of the PVFNC (for spread gain methods). This reconciliation is a useful tool in double-checking the reasonableness of the total gain or loss.

Entering the actual benefits paid (with interest to the end of the year) is useful even if you aren't entering assets because it also affects the liability side of the equation. If you specify a database field for this amount, keep in mind that all records appearing on the end-of-year database with a participating status (i.e., active, retired, terminated vested, disabled, or survivor) at either the beginning-of-year or end-of-year will contribute to the sum. Missing values will be treated as zeroes.

Output: Unreconciled Amounts
Unreconciled amounts are normal for decrementing actives, but are usually a sign of trouble for continuing actives or inactives. In many cases, it is a sign that data corrections exist but have not been explicitly reflected.

If all data corrections seem to have been reflected, look for the following situations:

- Continuing actives – increase rates other than assumed

  Look at your valuation assumptions to see if they contain increase rates for benefit formula components or accrual basis components. Also, look at your plan definition to see if it contains a "cash balance" accrual definition. In either case, the unreconciled amount may be due to increase rates other than assumed.

- Continuing actives – service accrual other than assumed

  If any continuing actives had service accruals other than assumed during the year (e.g., other than 1), they will produce an unreconciled gain or loss.

- Continuing inactives – COLA other than assumed

  Look at your valuation assumptions to see if they contain a COLA assumption. If so, the unreconciled amount may be due to a COLA other than assumed.

Finally, if none of the above apply, the culprit is likely to be an unintentional plan change or assumption change. To find out, visit the Plan Definition and Valuation Assumption libraries and use the "Compare…" button to identify any changes.

International Accounting Standards

ProVal now supports the international accounting standards codified in IAS 19 as revised in 1998. These standards can be accessed in all ProVal calculation modes (except the public plan mode) by specifying an alternative accounting methodology in the Asset & Funding Policy.

IAS 19 calculations are similar to FAS 87/106 calculations except:

- No asset smoothing is permitted
- Plan amendments are recognized much more rapidly. That portion of a plan amendment that is vested at the time of the amendment is reflected immediately. The non-vested portion is amortized until benefits become vested, rather than over the expected future working lifetime of participants as would be done under FAS 87. ProVal estimates the vested portion of new plan amendments based on the ratio of the vested ABO to the total ABO. (In OPEB mode, the ratio of the fully eligible APBO to the total APBO is used). The amortization period for the non-vested portion of amendments is specified by the user in the Asset & Funding Policy, and would typically be about 3 years.
- There is a maximum balance sheet asset. To make this determination in ProVal, the user specifies the maximum percentage of surplus that is potentially withdrawable by the plan sponsor.

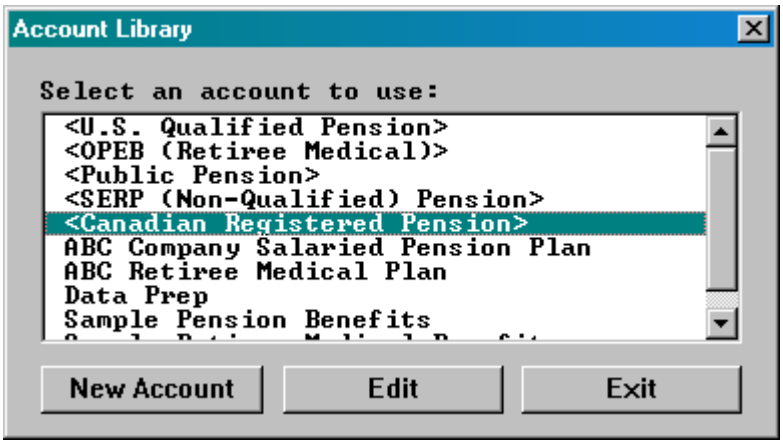
Note that ProVal does not support the transition to IAS 19 as revised in 1998, so the user is responsible for entering any initial amortization bases, including the 5-year permitted amortization of any transition obligation.

Canadian Registered Pension Plans

The Canadian Registered Pension calculation mode was designed for actuaries doing periodic valuations on Canadian plans, but will also be a useful tool for other actuaries wanting to do accounting calculations or forecasting on their clients' Canadian plans.

Some key features of the Canadian Registered Plan mode are:

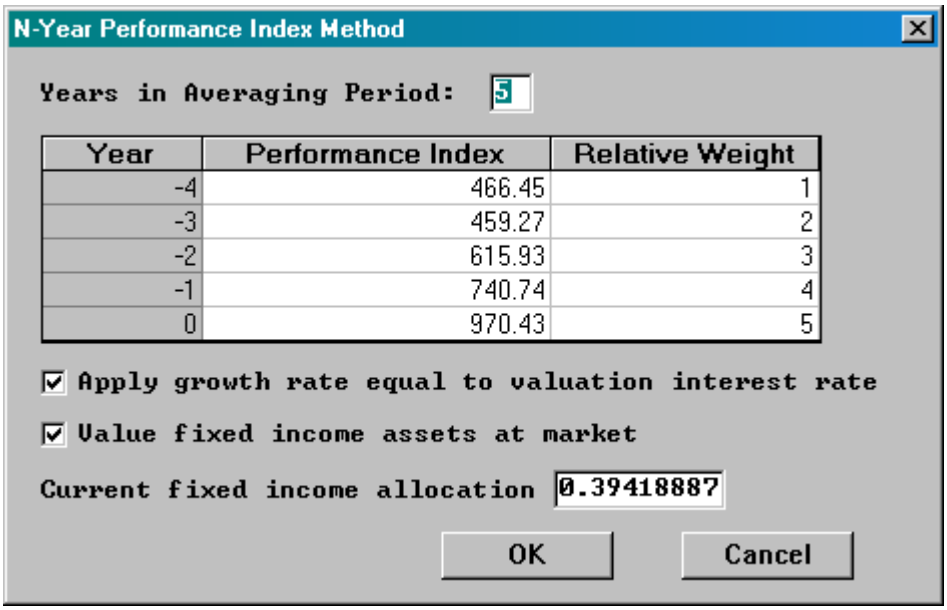
- Minimum contribution calculations consider both the ongoing and solvency liabilities. Most Canadian Provinces require that amortization payments pay off any unfunded solvency liability in at least 5 years. The solvency liability is similar to a U.S. current liability or plan termination liability in that it reflects benefits accrued to date and is calculated using a market-based interest rate and other regulated assumptions.
- A full set of exhibits detailing Canadian minimum, maximum and accounting calculations are included.
- Canadian plan limits are not yet automatically applied as they are in U.S. Qualified mode. These limits should be built directly into the benefit formulas.



- The CICA, which is the Canadian equivalent of the FASB, is in the process of revising Canadian accounting requirements to bring them more into line with the U.S. FAS 87 and FAS 106 requirements for pension and retiree medical plans. Both the current and the proposed CICA 3460 provisions are now supported in ProVal.

N-Year Performance Index Asset Valuation Method

A new family of asset valuation methods – called the N-Year Average of Performance Index method – has been added to ProVal's funding and accounting asset valuation method options. With this addition, ProVal supports over 20 distinct asset valuation methods, each of which can be defined separately for funding and accounting.



Under the Performance Index Method, the user specifies the averaging period and the historical performance index (e.g., the S&P index) for each year. Historical performance indices may or may not be adjusted by a "growth index" which is set equal to the funding interest rate for the actuarial value of assets and the accounting expected return on assets for the market-related value of assets. Assuming that the index is increasing, use of a growth rate will produce a higher actuarial value of assets than if the index is not used.

The user also specifies the relative weights for each index value. Typically the weights are higher for recent values (such as in the example above), but level weights of 1 on each value can also be specified.

Finally, the user can specify that some proportion of the assets – denoted as the fixed income assets – should not be smoothed. If this option is selected, the proportion of fixed income assets is specified separately for the valuation date (year 0) and for any future forecasted valuation dates.

The calculation methodology used for this method is as follows. Note that no rounding is currently employed in any of the steps.

1. Adjust historical indices by the appropriate growth factor. For example,

$$adjPI_{-3} = PI_{-3} \times (1+g)^3$$

2. Calculate the weighted average index using user-supplied weights:

$$WAI = \left(\sum_{t=0}^{n-1} adjPI_{-t} \times RW_{-t}\right) \div \sum_{t=0}^{n-1} RW_{-t}$$

3. Calculate the "smoothing factor" equal to the weighted average index divided by the current index value:

$$SF = WAI \div adjPI_0$$

4. Calculate the smoothed asset value by applying the smoothing factor to that portion of the market assets subject to smoothing, and adding the full market value of any assets not subject to smoothing:

$$AV = SF \times MV_{NonFI} + MV_{FI}$$

5. As with any smoothed asset value, subject the preliminary actuarial value to the (typically) 80/120 market value corridor.

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