LoanMaker SP Technical Supplement

Version 1.5 - COBOL Source Code

File Names and Contents

FC.COB	Contains the COBOL source code for the main FC module.
CALDATE.COB	Contains the COBOL source code for the date routines called from FC.
KEYDATE.COB	Contains the COBOL source code for more date routines called from FC.
SHELL.COB	The COBOL source code for the driver program to test the program on a PC.
SHELL.EXE	The executable PC version of the program. Built from SHELL.COB, FC.COB, CALDATE.COB, and KEYDATE.COB
FCERRMSG.TXT	The error messages associated with error numbers returned by the FC module.
LMSP.EXE	The PC version of LoanMaker SP (included for testing).
LMSP.DAT	The configuration file for LMSP.EXE which contains the credit insurance plans.

Dates

Dates are passed and returned in the format “mm/dd/yy”. Date fields must be 8 bytes and must include leading zeros when appropriate, e.g., “01/09/96”.

Even though only two digits are passed for the year, the calendar routines will work over the one-hundred year period from “01/01/1980” through “12/31/2079”. Thus, for dates, if the two-digit year is less than 80, it represents a year in the next century.

Internal Arrays in FC

When installment loan computations are complete, two arrays are populated within the FC module. The first, FC-PMT-ARRAY contains the payment amounts in order, e.g., the first payment is in location 1, the second in location 2, and so forth.

The second, FC-PMT-DATE-ARRAY contains the due dates of all payments in the same order. The date is stored in an X8 field.

Errors Returned by FC

The field FC-ERR-NO is returned as 0 if computations are completed, or with a non-zero value if an error has been detected. The number returned corresponds to the error messages in the FCERRMSG.TXT file.

In the FCERRMSG.TXT file, the first six characters contain the error number, and the rest of the line contains the error message. The SHELL program checks to see if a non-zero value is returned in FC-ERR-NO, and if so, displays the corresponding error message.

Debugging FC

If the field FC-DEBUG-DUMP is set to a non-zero value when FC is called, various intermediate results will be reported with the DISPLAY statement.

The SHELL.COB module sets this to 1 in the PC compiled version so the intermediate results are also produced on the PC's screen. By setting this flag to 1 on a test mainframe version, the intermediate results can be compared with the PC version.

FC-DEBUG-DUMP should be set to 0 for the run-time implementation.

Payment Schedule Returned by FC

The procedure MAKE-PMT-SCHEDULE computes a payment schedule for the loan. The number, starting date, and amount of payments are placed in an group of three arrays. E.g., a loan could have the disclosure:

12	01/01/96	500.00
12	01/01/97	525.00
24	01/01/98	352.22

Thus, there are three changes in the payment amount over the term of the loan and three entries appear.

The number of payments is returned in FC-NO-PMTS-TBL(), the payment amount in FC-PMT-AMT(), and the due date of the first payment of this series in FC-STRT-DATE-TBL().

Irregular loans can have a large number of entries in the payment schedule. If a loan has more than 24 entries, a warning message is generated indicating that only the first 24 lines of the payment schedule are calculated. The loan is a valid loan, however, you will have to retrieve the array of payments and payment dates to get the entire schedule. (See Internal Arrays above.)

Simplified Disclosure

If a loan has only monthly payments and only 1 or 2 skipped months (consistent through the loan term) and the payment schedule can be disclosed in 4 lines or less, FC will produce a simplified disclosure. The number of lines in the simplified disclosure are returned in FC-DISC-FLAG. If a 0 is returned, then the loan is too complex to be disclosed within 4 lines.

See the FC.COB source code for details on how the information is returned in the simplified disclosure.

Irregular Payment Specifiers

If a loan is to include skipped or specified payment amounts, irregular payment specifiers and irregular payment amounts need to be specified. The specifier is placed in the array FC-

SPEC-TBL(), and the amount in FC-SPEC-AMT-TBL(). Up to five specifiers and associated amounts can be passed.

The order in which the specifiers are stated is significant. The last specifier (highest in the array) takes precedence over the other specifiers. Thus if you first specify that all June payments are to be skipped and then specify that the June 1997 payment is to be set at $500, all June payments except the one due in 1997 will be skipped.

If you specified that the June 1997 payment be set at $500 and then specify that all June payments are to be skipped, the June 1997 payment will also be skipped.

See the LoanMaker SP User's Guide and the FC.COB source file for detailed information on irregular payment specifiers.

Setting/Changing the Default State

The computational module FC.COB expects the state identifier (a 2-letter abbreviation) passed in the field FC-STATE-ABBR. If an illegal state is passed, an error is returned. If blanks are passed, the module will calculate loans but without insurance.

The calling module should be modified to assign the desired state identifier to this field if the user enters no state. FC.COB should not be changed.

Global Options & Credit Insurance Plans

Insurance plans are contained at the end of the FC.COB module at the paragraph LOAD-STATE-PLAN. Extra plans can be added by following the format for existing plans. Not all parameters are used for insurance plans, however, the unused parameters should always be assigned a value when creating a state plan. See the detailed list following for the appropriate assignments.

Any number of plans can be added.

Global Options

The following options are global and affect all loans calculated regardless of the state plan selected.

Insure Odd Days (ST-INS-ODD-DAYS)

This field should always be assigned a value of 1.

Interest calendar (ST-CAL-INT)

Interest can be accrued during the first period using either an actual or "Federal" (sometimes called a 360-day) calendar. The interest is always accrued using the U.S. Escrow Rule. All payment intervals after the first period are treated as unit periods equal to 1/f of a year, where f is the payment frequency (number of payments per year).

For example, assume a monthly loan (12 payments per year) with an interest rate of 12%. Each period after the first is treated as 1/12th of a year and 1/12th of the annual interest rate or 1% is applied to accrue the interest for each period.

Generally, an actual calendar (as opposed to the "Federal" calendar) will compute the most accurate interest charge if the loan will be tracked on a simple-interest basis.

Assign a value of 0 for the “Federal” calendar or 1 for the actual calendar.

A.P.R. calendar (ST-CAL-APR)

The annual percentage rate can be computed using either an actual or "Federal" calendar to measure the length of the first period. If the A.P.R. calendar method is the same as the interest accrual method and there is no prepaid finance charge, the A.P.R. will match (or be very close to) the loan interest rate. If the two calendar methods are different, e.g., actual for interest accrual and "Federal" for A.P.R., the interest rate and A.P.R. will rarely match.

Assign a value of 0 for the “Federal” calendar or 1 for the actual calendar.

Credit Insurance Plan - Single-Payment Loans

Life type (ST-SP-LIFE-TYPE)

The value in this field determines the method of computing credit-life insurance on single-payment loans. Assign a value of 0 for no life insurance calculations, or the value of 1 or 2 (contact P*ROM or your insurance carrier to determine the proper value).

If this is not set correctly, the computed premiums will be substantially inaccurate.

Maximum Life Benefit (ST-SP-BEN-MAX)

The maximum amount of life insurance that can be provided.

Single Level Life Rate (ST-SP-SLR)

The life rate for single life insurance.

Joint Level Life Rate (ST-SP-JLR)

The life rate for joint life insurance.

Credit Insurance Plan - Installment Loans

Life type (ST-LIFE-TYPE)

The value in this field determines the method of computing credit-life insurance on installment loans. Assign a value of 0 for no life insurance calculations, or the appropriate value for the insurance plan (contact P*ROM or your insurance carrier to determine the proper value).

If this is not set correctly, the computed premiums will be substantially inaccurate.

Life truncated okay (ST-LIFE-TRUN-OK)

If 1, the program will compute truncated life insurance. If 0, truncated life insurance is not allowed (not all states allow the sale of truncated life insurance).

Truncated insurance is insurance that does not continue in force for the full term of the loan, e.g., for a 120-month loan, life insurance can be provided for the initial 60 months if truncated is enabled.

Life on irregular loans okay (ST-LIFE-IRR-OK)

If 2, life is available on all loans, including irregular and balloon loans. If 1, life is available on regular and balloon loans, but not irregular loans. If 0, life is only available on regular loans.

A balloon loan has a different final payment. An irregular loan has at least one payment (other than the final payment) that is different from the other payments. A regular loan is a loan where all installments are equal.

Life irregular with level (ST-LIFE-IRRLVL)

This option only affects gross life premium calculation on irregular loans (loans with more than one payment amount that are not balloon loans). Generally the value of 0 should be assigned to this field.

Single Decreasing Life Rate (ST-LIFE-SR)

The single-life decreasing rate. The rate is expressed either as a rate per $100 or per $1000, depending upon the installment loan Life Type (see above).

Single Level Life Rate (ST-LIFE-SLR)

The single-life level rate. The rate is usually expressed as a rate per $100 but is not used for many Life Types.

Joint Decreasing Life Rate (ST-LIFE-JR)

The joint-life decreasing rate. The rate is expressed either as a rate per $100 or per $1000, depending upon the installment loan Life Type (see above).

Joint Level Life Rate (ST-LIFE-JLR)

The joint-life level rate. The rate is usually expressed as a rate per $100 but is not used for many Life Types.

I&M Discount (ST-LIFE-DISC)

The interest and mortality discount as a percentage, e.g., 3.5 for 3.5%. Used only in some states and should be set to 0 if not used.

Life maximum term (ST-LIFE-TERM-MAX)

The maximum life insurance term (in months) permitted. Loans longer than this generally cannot include life insurance. However, if life truncation is enabled, the life term on a longer loan can be set at any term up to the value in this field.

Life maximum benefit (ST-LIFE-BEN-MAX)

The maximum life insurance benefit (at least 100) or a 0 representing no maximum benefit. Proportional insurance is provided on loans that exceed this amount.

Disability interpolation flag (ST-DIS-INTR)

If intermediate disability rates (rates in between the 6-month steps stored in the insurance plan) are to be interpolated, put a 1 in this field. If they are to be bracketed, put a 0 in this field. Generally, rates are interpolated and a 1 should be put in this field.

Disability type for regular loans (ST-DIS-TYPE-R)

This has a value of 1 if regular installment loans can be insured with disability or 0 if disability insurance is not available. (In a regular installment loan, all payments have the same value, i.e., no balloon, skipped, or pickup payments occur in the loan.)

Disability type for balloon loans (ST-DIS-TYPE-B)

This has a value of 1 if only the regular payments are covered with disability (no portion of the balloon is covered), 2 if the regular payments and a portion of the balloon payment equal to the regular payment are covered, or 0 if no disability coverage is available for balloon loans. (In a balloon loan, all payments except the final payment have the same value and the final payment has a value that is larger or smaller than the regular payment).

Disability type for irregular loans (ST-DIS-TYPE-I)

This has a value of 1 if the average payment is covered with disability, or 0 if no disability coverage is available for irregular loans. An irregular loan is any loan that is not a regular or balloon loan. If disability coverage is provided, the periodic benefit is computed as the average payment, i.e., the total of all payments (including skipped payments) divided by the total number of payments.

Disability truncated okay (ST-DIS-TRUN-OK)

If 1, the program will compute truncated disability insurance for the particular state. If 0, truncated disability insurance is not allowed (not all states allow the sale of truncated disability insurance). Truncated disability is not available on irregular loans.

Disability rate table deviation (ST-DIS-DEV)

Some states require the standard table of disability rates to be adjusted upward or downward based on experience. In addition, some states allow the standard table of rates to be increased by a percentage if the insurer agrees to cover pre-existing conditions. This field holds the deviation percentage. If no deviation is required, 100 (representing 100%) is used.

Disability maximum terms (ST-DIS-TERM-MAX)

The maximum disability insurance term (in months) permitted. Loans longer than this generally cannot include disability insurance. However, if disability truncation is enabled, the disability term on a longer loan can be set at any term up to the value in this field.

Disability maximum total benefit (ST-DIS-MAX)

If there is a maximum total (also called aggregate) amount of disability insurance that can be provided, put that amount in this field. If the maximum amount is based on a monthly interval, put a 0 in this field and see the next field. If there is no maximum amount of disability, put a 0 in this field. Proportional disability insurance is provided on loans with a total of payments that exceeds this value.

Disability maximum monthly benefit (ST-DIS-MAX-MO)

The maximum monthly disability benefit that can be provided, enter that value in this field. If there is no maximum monthly amount, enter a 0. Proportional insurance is provided on loans with a monthly payment that that exceed this value.

For other-than-monthly loans, the payment amount is converted to an equivalent monthly amount to limit the amount of disability insurance. For example, if the monthly maximum is $500, a loan with quarterly payments of up to $1500 could be fully insured.

Disability plan name (ST-DIS-PLAN)

The name of the disability plan is assigned to the field and returned to the calling application so it can be displayed to a user.

Tables of disability rates (ST-DIS-RATE())

The tables of disability rates for terms up to 180 months are stored in 6-month steps, e.g., a rate is stored for terms of 6 months, 12 months, 18 months, and so forth. Rates for terms between 6-month steps are bracketed or interpolated according to the ST-DIS-INTR value.

The first rate in the table is the 0-month rate which is used to interpolate rates for terms less than 6 months. Disability rates are entered per $100.