

Rerum Naturalium Fragmenta

No. 356

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.

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Tamas Jasko editor

34 Lomondside Ave, Clarkston, Glasgow G76 7UJ, Scotland

Lexis Licence System

by T. Jasko

1. Loading Lexis data.

Lexis data are loaded from the tapes supplied quarterly.

1.1 Reading the tape to disk file(s)

This job reads the tape and converts ABCDIC code to ASCII.
(Program MP-TDUMP).

The disk file is listed in the printer by TJ. L.

```
$JOB LETADU TJ,REX PROJ=45
$TIMENOW
$DEFNAME DUMP LEXIS FILE FROM TAPE TO DISK
$DEFNAME --- T FILE ( LIST OF CODES )
$FILEMGR
CREATE LEX81 .4T,DC,1000
EXIT
$IFT ABORT END
$NOTE PLEASE LOAD TOM'S >> LEXT << TAPE - 1600 CPI
READ ONLY
SA3 10=MT,LEXT,,U
$A1 20=LEX81,4T
$MP-TDUMP
350,1,1
$DEFNAME LIST LEXIS FILE ON PRINTER
$A1 IN=LEX81.4T
$TJ.L
$EOJ
```

1.2 Retrieval programs need various index files. To create these, two more runs are needed. The first of these creates the group and partner index files (using the program MP-BOL10).

```
$JOB LEDAC TJ,REX PROJ=45
$DEFNAME CREATE DA FILES FOR COMPANY (GROUP &
PARTNER) INFO
$DEFNAME USING THE LEXIS '0' FILE
$FILEMGR
CREATE LEX81.4G,DC,300
CREATE LEX81.,4P,DC,1000
EXIT
$IFT ABORT END
$MP-BQL10
TJ
LEXIS
CREATE GROUP AND PARTNFR FILES
TJ
REX
LEX81.4
LEX81.4G
LEX81.4P
$EOJ
```

The second run generates an Index file for use by the P and Q options of RLEX and GLEX.

```
$JOB LEI TJ/REX PROJ=45
$DEFNAME RUN TO GENERATE COMPANY INDEX FOR RLEX/GLEX
$FILEMGR
CREATE LEX81.4I,DC,800
$IFT ABORT END
$A1 L0=LEX81.4I

$A1 5=LEX81.4
$A2 D0=SLO,1500
$MP:ILEX
A
LEX81.4G
LEX81.4P
$EOJ
```

Retrieval of licence data

Licence data can be retrieved by the programs MP:RLEX and MP:GLEX. Both programs use the same parameters. RLEX

retrieves only current information, GLEX retrieves historical data as well.

Retrieval options available:

- A - All licences.
- R - A range of licences.
- L - A list of licences (entered by the user).
- O - Licences operated by a particular Company.
- P - Licences in which a Company has interest.

Examples:

Retrieve a Range of licences from P020 to P02B

```
R
P020
P028
LEX81.4G
LEX81.4P
```

In interactive use, type

```
LINESIZE 130
A1 IX = LEX 81.4I
A1 5 = LEX 81.4
MP:RLEX (or MP:GLEX)
```

and enter retrieval parameters as prompted.

Batch retrieval jobs

Current information only - RLEX

```
$JOB RLEX-T TJ,REX PROJ=45
$DEFNAME TESTRUN OF RLEX - RETRIEVE BNOC OPERATED
LICENCES
$A1 IX=LEX81.4I
$A1 5=LEX81.4
$MP:RLEX
0
BNOC
N
LEX81.4G
LEX81.4P
$EOJ
```

Include historical data – GLEX

```
$JOB GLEX-T TJ,REX PROJ=45
$DEFNAME TEST RUN OF GLEX - PETRIEVE BNOC OPERATED
LICENCES
$A1 IX=LEX81.4I
$A1 5=LEX81.4
$MP:GLEX
0
BNOC
N
LEX81.4G
LEX81.4
$EOJ
```

Lexis format changes

The Lexis tape format underwent considerable changes in early 1982. The latest shipment included files/records in the new format but the '0' file was still supplied. This file will be entirely replaced in the future and MP-BQL10 will have to be rewritten.

(Exploration Data Processing Manual (16) 1982, 3 p.)

CHIN: Data entry for Palynology Charts

by T. Jasko

This program accepts palaeontological data typed in at the terminal, validates the data against lists of valid codes and writes an Output file that can be used to construct palynological (or micro-palaeontological) data Charts.

Procedure

In TSM> type

CHIN filename

where filename is the destination (output) file name, then enter data as prompted by the program.

Data items requested by the program:

Well name - Requested once at the beginning of the program.

Up to 24 characters of text.

For each **sample** enter the following:

Sample type

4 characters:

CUTT (cuttings),

SWC (side-wall core) or

CORE.

Depth

This can be entered in meters or (decimal) feet. N.B. all data of a well should be in the same units.

Species frequency data

For each species enter a 1 character frequency code followed by the species code number of 1 to 4 digits.

Valid *frequency* codes:

- C (common),
- D (dominant),
- P (prominent),
- R (reworked),
- (present),
- ? (uncertain).

Example:

-760 (= Tasmanites sp., present)

The program validates both codes and displays the corresponding species name. Invalid codes are indicated by a warning, but will be passed to the Output file, so missing entries can be added to the species list after inputting the data.

To end the entry of species codes, type X Instead of a frequency code.

Kerogen data

Enter the amount of inertinite, vitrinite and liptinite as per cents, 3 numbers on the same line, separated by commas. If not known, enter X. If the total is less than 90 or greater than 110 a warning is given and the program prompts for re-entering the (correct) data.

Liptinitic components

The relationships of liptinitic components can be entered as a line of up to 40 characters using the following symbols:

PO (pollen),
SP (spores),
AC (acritachs),
DI (dinocysts),
A (amorphous),
C (cuticle),
F (bothryococcus).

These should be separated by one or more spaces. (Enter X if not known).

After each sample the program prompts for the next sample, starting with sample type. Enter X to exit from program.

Adding liptinitic components

Liptinitic components can be added to existing files using the Editor program. In TSM> type

W ww where ww=2-letter work file code, e.g. LL
USE filename
APP\KER\

This will display the last line of each sample record. Type in liptinitic components ending with CR.

After all data are entered, the Editor comes back with the EDT> prompt. Store file by

STO
X (EXIT)

Species name list

Species names and code numbers are maintained in the file BUGS.

Each line contains a species code number in the first 5 columns and a species name starting at column 7 (up to 44 characters). Column 6 is blank. Use the Editor to change the list, then STORe the updated version.

Micro-palaeontological data

To enter micro-palaeontological data, type in TSM>
MPIN

Data entry procedure is the same as for palynological data with the following exceptions:

Species names are checked against the list MICRO.

Protistid data are entered instead of kerogen/liptinite data.

[Software Update no.20: 28 March 1983]

MONCAMPE: Monte-Carlo program for Prospect Evaluation

by T. Jasko

1. Signing on

Switch on the terminal and type ? (question mark). Enter your username and key, separated by a comma or space. For a limited period users without assigned username/key can use the username PROS and key PECT i.e. sign on as PROS,PECT.

Regular users should apply to I. White in EDP for own username and key. (Using your own username/key speeds up delivery of plots and printed listings).

When you signed on under your own username/key, the Computer responds with the TSM> prompt. Type QEPE to enter the menu selection. (If signed on as PROS,PECT, you will be automatically channelled to the menu program).

2. Data entry

Select MENU Option 1. The program will prompt for a filename = 8-character name composed of the abbreviation of prospect & reservoir - this will be the name under which the data are stored. Each reservoir needs a new file and if a reservoir contains both oil and gas, these are to be put in separate files, too.

The filename should consist of letters (upper case only) and/or numbers, starting with a letter. No internal blanks are permitted.

N.B. the Data Editor program does not work on Tektronix graphic terminals.

2.1 What to enter (QEPE form)

The program requires data to be entered more or less in the same way as they appear in the printed QEPE forms.

2.11 *General parameters*

Reservoir name and *Prospect name*: enter names in the form as these should appear on the expectation curve plots.

Oil or Gas: enter O or G

File under: this is the name of the file (used for checks)

Chance factor: enter as percentage.

2.12 *Factors*

For each factor enter

- the name of the factor
- the unit used e.g. ACFT, % (See 9. Unit conversions)
- up to 12 pairs of representative values with associated probabilities.

Up to 12 factors can be entered.

2.13 *Values to be computed/displayed*

To specify an *economic cutoff*, enter value as million barrels of oil (or billion scf gas). The program will compute the chance of finding a volume bigger than this and also the average of all values above the cutoff.

Up to 6 quantiles e.g. P90, P50, ... can be requested.

If these fields are left blank only the unrisked average and expectation curve will be computed.

2.2 Entering a data item

The QEPE Data Editor program will prompt for entering data from the QEPE form into the bracketed fields. Whether the fields are blank or contain some predefined information these can be changed by overtyping or left unchanged by pressing CR to jump to the next field.

To blank out an item type ! (exclamation mark). To skip to the end of a display page type @ ("at sign"). To skip to the end of the file type # ("sharp").

2.3 At the end of a page

xxxx

Reaching the end of a page the program asks whether the page is OK giving a Chance to check the data entered. Enter Y (for yes) if OK to proceed, enter N otherwise and the same page can be edited again.

To delete a page (e.g. to get rid of an unwanted factor) type D - this page will not be passed to the Output.

2.4 Saving the edited data

The newly entered or modified data are kept in a work file till the (successful) completion of editing and only then are written

to the 'new' file. If the program is stopped at this stage, the file will be left unchanged.

3. Modifying existing PE data

Proceed as for entering 'new' data but select MENU option 2 and specify a file created previously. This will be the 'old' (input) file. Next, enter then name of the 'new' (output) file if different.

Entering the same filename again, or just a CR will cause the old file being overwritten with the updated contents.

4. Unrisked expectancy for single reservoir

To run the Monte-Carlo model select MENU option SRX and specify the filename of the reservoir.

For each parameter (factor) the program will attempt to fit normal and/or lognormal distributions. After displaying the results of the best fit, the user can choose which one is to be used for modelling the factor.

Enter CR for the automatic choice i.e. the distribution with the lesser residual error at the given data points. To override the automatic choice, enter

- 1 - to use normal distribution, or
- 2 - to use lognormal distribution.

The program will pause before displaying the expectancy curve.

5. Independent addition of reservoirs

Select MENU option AI and enter the name of the prospect (up to 8 characters). For each reservoir, the program will ask for the name of the reservoir data file. The expectancy distributions calculated by previous Single Reservoir runs are used for each reservoir. Enter CR only (instead of reservoir name) if no more reservoirs are to be added.

6. Totally dependent addition

Select Menu option ATP. Otherwise proceed as for dependent addition.

7. Displaying data files and results

7.1 Display of QEPE data

Select Option DIS of the menu to display the contents of a data file on the screen.

7.2 Printing a file

Select menu option PRI to get a printed listing of a data file. This option will also display the file on the screen.

7.3 Summary results

Summary results will be listed on the screen for each Monte-Carlo run. These include the average volume and the parameters requested by the user e.g. P50 (See 2.13). On non-

graphic terminals these are the only results displayed on the screen.

7.4 Graphic Output of expectancy curves

If wanted, the computed expectancy curve can be displayed and/or plotted. If the terminal is capable to display graphic information then the program will ask the user whether the curve should be drawn on the screen or not.

N.B. Westward terminals should be checked before requesting graphic output - they should be switched to 'graphic' mode.

Not all terminals can display the curves on the screen. If the terminal used is not a 'graphic' terminal, the user will only be prompted to decide whether a hard copy plot is required and if so, where to plot e.g. in the Drawing Office (GC) or in the Computer Suite (220).

7.5 Horizontal scale

The usual horizontal scale for expectancy curves allows for displaying data in the 0-200 range. This can be changed by specifying the desired upper limit when prompted by the program, after displaying summary results and just before plotting starts.

8. Comparison with matrix multiplication

To compare Monte-Carlo results with results obtained by other methods, 4 versions of matrix multiplication are optionally available.

To access these, first select Menu Option 6, then type

- 1 - for 3-element matrix multiplication (as done manually),
- 2 - for 5-element matrix multiplication,
- 3 - to compute full matrix in each Step (up to 1200 elements),
- 4 - to use the PROSPECT program written by G. Drever.

Expectation distributions produced by matrix methods 1/3 can be added the same way as those obtained by Monte-Carlo modelling.

9. Unit conversions

Volume data input are assumed to be in million cubic meters and automatically multiplied by a conversion factor to give results in million barrels (oil) or in billion scf (gas).

If the gross volume unit is acre feet, entered as ACFT (capital letters) the values will be converted from acre feet to cubic metres.

If the unit of a factor is % (percent sign) the values will be divided by 100.

If a unit is not specified (blank) or any other than ACFT or % it will be ignored, i.e. the values will be used as entered.

[Software Update no.24: 1 August 1983, 8 p.]

FA.TYS : Program to Set/Change File Type

by T. Jasko

This Utility program is setting the file type field in the SMD entry of a user file to a new value.

Procedure:

Enter the correct username and key (if not yet entered); then type FA.TYS

Enter filename (when prompted). This name is checked and if not a valid user file the program exits with an error message.

The old file type will be displayed. Enter the desired file type as 2 characters (0...9, A...F i.e. 2 hexadecimal digits).

The following file types have special meanings:

- 00 - temporary files
- CO - SLOF files
- CA - catalogued load modules
- ED - EDITOR saved files
- EE - EDITOR stored files
- F1 - index files
- FA - resident data sets
- FD - Special file directories
- FE - editor work files

If possible, avoid using these file types for other purposes.

[Software Update no.21: 11 April 1983]