XIII (F7) The DATECALC Utility

The program DATECALC.COM that has been provided as part of the Family History System is a utility program to assist you in performing some standard operations involving dates, including:

- Determining the day of the week on which a given date falls
- Computing the number of years, months and/or days between two given dates
- Determining the date that is a given number of years, months and/or days before or after another date
- Displaying a calendar for the month containing a given date
- Converting between "old style" and "new style" dates.

In providing these functions, the DATECALC utility also permits you to select the format for dates entered or displayed from among:

DD MON YYYY (e.g. 10 APR 1943)
MON DD, YYYY (e.g. APR 10, 1943)
MM-DD-YYYY (e.g. 04-10-1943)
DD.MM.YYYY (e.g. 10.04.1943)
YYYY MM DD (e.g. 1943 04 10)
or YYYY DDD (e.g. 1943 100).

The "difference" or length of interval between dates can be displayed in several formats also, including:

+/- Yr,Mon,Day (+ 0044 Y 004 M 02 D)
+/- Yrs,Days (+ 0044 Y 124 D)
or +/- Days (+ 016195 Days).

(A "-" before the date difference indicates that the second date occurs before the first one.)

The DATECALC utility can be invoked in several ways. If you are using DOS 3.0 or later and have sufficient RAM available, you should be able to invoke it from the MainMenu of the Family History System by pressing the F7 key. It can also be executed as a command from the DOS prompt, for example by entering: C>datecalc assuming the DATECALC.COM program in the current directory or is in the DOS Command Path.

Finally it can be made memory resident by entering: C>datecalc r (again assuming the DATECALC.COM program is in the current directory of drive C or is in the DOS command path.) After entering the command, the DATECALC program can be called up at just about any time by simultaneously pressing the ALT and CTRL keys. The utility will not "pop up" when the screen is being used to display graphics and it may be incompatible with some other resident utilities or with some programs that take control of keyboard input.

NOTE: *If you are running the programs under Windows 95, you can also cause the DATECALC program to be made memory resident during the FHS working session. To do this, right click on the desktop icon that you have created to run the FHSINIT program to start an FHS session. Then click on "Properties" and the "Program" tab of the properties display. On the "Batch File" line, enter: DATECALC R then click Okay. When you then start an FHS session, the*

DATECALC program will first be invoked with the parameter that causes it to be memory resident. It will remain in memory until you end your FHS work session and return to Windows 95.

If you installed your programs on diskettes, the AUTOEXEC.BAT file created on the STARTUP diskette during the standard INSTALL procedure has a command line in it which will make this utility memory resident when you boot from those diskettes. If you are running from a hard disk or do not boot from your Family History System program diskette, you may consider modifying the AUTOEXEC.BAT file used during your normal boot procedure to automatically make the DATECALC utility RAM resident. Be aware that making the program resident in memory will "permanently" reduce the available memory for other programs by about 7k.

When you invoke DATECALC in one of the above ways, it "pops" into view, overlaying the previous contents of the screen. The utility's options are listed together with the function keys that are used to select them. (Note that the ESCape key is used to exit from the program. The previous contents of the screen are restored when you do.) Below the list of options you will find the descriptions for the current formats for DATEs and Date DIFference. If "old style" dates are being processed, then the characters "OS" will appear to the right of the literal describing the date format. Near the bottom of the viewing area, on separate lines, appear two dates (DATE1, DATE2) and the computed DIF (calendar interval) between the dates. The day of the week for each date is also shown for each date. The first time the utility is used the dates will have the value of the current date (or 01 JAN 1980 if you don't have a clock calendar board and haven't previously corrected the date using the DOS DATE command or some other utility) and the computed DIF will be 0 years, 0 months and 0 days.

You can use the cursor control keys (as well as the HOME, END, PGUP, PGDN keys) to move the viewing area for the utility to different locations on the screen. This allows you to reveal any area on the screen in which a date appears that you may want to examine. If you are running DATECALC as a memory resident utility, then the location of the viewing area will remain unchanged between separate invocations of the program.

The list of program options appears as follows:

F1 Enter DATE1 (find DAY)
F2 Enter DATE2 (find DIF)
F3 Enter DIF (find DATE2)
F4 Show Calendar for DATE1/2
F5 Change DATE Format/Style
F6 Change DIF Format
ESC Exit.

XIII.A USING THE DATE CALCULATOR

If you press function key F1 or F2 then a reverse video cursor will appear in the first position of the value field for the corresponding date at the bottom of the viewing area. You can then type in the value you wish and press the Enter or RETURN key when you are through (or press the ESCape key to restore the previous value for the date). Month literals should be among:

JAN, FEB,MAR,APR,MAY,JUN,JUL,AUG,SEP,OCT,NOV,DEC

Any other values entered will be changed to "JAN". Lower case characters are automatically changed to upper case when entering these values. If a value is entered for the day of the month which is greater than the "legal" number of days in the month, then the month and day (and year if necessary) will be automatically adjusted accordingly. For example an entered date of "MAR 35, 1987" will be changed to "APR 04, 1987". Similarly, if a value greater than 12 is entered for the number of the month, then the month and year (and day value if necessary) will be adjusted accordingly. For example an entered date of "14-30-1987" will be changed to "03-01-1988".

If you press function key F3 then a reverse video cursor will appear in the first position of the value for the DIF field at the bottom of the viewing area. The first character must be a + or - (indicating whether the computed value for DATE2 is to

be after or before DATE1). Press the Enter or RETURN key when you are finished (or press the ESCape key to restore the previous value for DIF).

When entering any of these values you can use the left and right cursor control keys to move the cursor and you can use the TAB key to move quickly to different parts of the field. The cursor automatically skips over the "filler" characters (such as "-" or ",") so you don't have to enter these.

If you have changed either DATE1 or DATE2, then the program will compute and display the day of the week and compute and redisplay the value of DIF, the difference between the two dates. If you change the value of DIF, then the program will compute the value of DATE2 that is the specified interval before or after the current value of DATE1 and will compute and redisplay the DIF between the dates. Note that in computing date differences the following procedure is used:

The larger of the two dates is determined and the sign of the difference is set to - if DATE1>DATE2 and + otherwise

The smaller date is subtracted from the larger, first days, then months and then years.

On the other hand, when DATE2 is computed from DATE1 the adjustment of the components of the date are made in the reverse order, first years, then months and then days. (This is an important distinction and one that was not followed by an early version of the DATECALC utility. If the components of DATE2 are computed in days, months, years order then the computed DIF between DATE1 and the computed DATE2 will sometimes not match the original DIF value entered.)

XIII.A.1 DISPLAYING A MONTHLY CALENDAR

If you press the F4 key then the middle portion of the viewing area for the DATECALC utility will be cleared and a calendar will be displayed for the month of the year containing DATE1. (If instead you press the SHIFT and F4 keys simultaneously, then the calendar for DATE2 will be displayed.) Once the calendar is displayed, you can scroll the calendar backward or forward by months by pressing the left or right cursor keys respectively. The calendar may also be scrolled forward or backward by years by pressing the up or down cursor keys respectively. The calendar display will be terminated by pressing the ESCape key. (**NOTE:** *If you are currently using "old style" dates then the calendar will be computed using "old style" rules*.)

XIII.A.2 CHANGING DATE AND DIF FORMATS

Pressing the F5 key causes the DATEs to cycle through the various formats described previously. Both the literal describing the format and the values for DATE1 and DATE2 will automatically change. All dates will be entered and displayed in the currently selected format.

Similarly, if you press the F6 key then the value for DIF will cycle through the various formats described above. All DIFs will be entered and displayed in the currently selected format.

If you are running DATECALC as a memory resident utility, then the format for DATEs and DIF will be retained between invocations of the utility.

XIII.A.3 CONVERTING BETWEEN "OLD" AND "NEW" STYLE DATES

It is generally well known that the "standard" calendar year of 365 days differs from the "solar" year by an amount that makes it necessary to insert extra days occasionally (as a 29th day in the month of February) to get back in synch with the sun. The years in which such days are added are called "leap years". The rule for determining leap years that has been used in English speaking countries since 1752 (and from earlier dates in other enlightened areas of the world... in fact the new calendar is called a "Gregorian" calendar after Pope Gregory XIII who requested that Catholic countries begin using it in 1582) may be stated as follows:

A given year will be a leap year if it is evenly divisible by 4

UNLESS the year ends in "00" in which case it is NOT a leap year

UNLESS it is divisible by 400 in which case it IS a leap year.

Prior to the establishment of this leap rule, most of the Western world employed a rule, which was just the first line in the above statement, that is every fourth year was a leap year. The effect of using this simplified rule over a long period of time was that the planting season, which is determined by the sun, would creep a calendar day earlier every 133 years or so. By the Spring of 1752 people were having to plant their potatoes the day after Groundhog Day instead of Valentine Day. Therefore to correct the situation all English subjects were asked to go to bed the evening of 02 SEP 1752, get up the next morning on 14 SEP 1752, and from that day forward use the new leap year rule for constructing calendars.

Today this calendar change is just a curiosity for most of us. But to people of that day and genealogists today who have to deal with dates both before and after this adjustment it is a problem which has been recognized by labeling dates based upon the old leap rule as "old style" dates and designating those following the new rule as "new style" dates.

The calendar adjustment to "new style" dates occurred at different times in different countries so rather than just treating all dates prior to 14 SEP 1752 as "old style" dates, the DATECALC utility provides an option for converting between the two "styles". Pressing the SHIFT and F5 keys simultaneously causes the program to shift between old and new style treatment of dates with a corresponding adjustment of displayed DATEs and DIF values. When dates are being treated as "old style" dates the characters "OS" will appear to the right of the literal describing the current Date format. When the new leap rule is in effect there is no special indicator to the right of the Date format descriptor (though genealogists will sometimes use an "NS" suffix for such dates).

As an example, call up the DATECALC utility, press F1 and enter the new style date: 22 FEB 1732 (or equivalent for the date format you are using). You will find that George Washington was born on a Friday. But if you press F4, the "new style" calendar displayed will not be the one that George's parents used to mark his birth. Instead, press ESCape (to erase the calendar display) and then SHIFT+F5 to switch to "old style" dates. You will find that George's birth date was actually 11 FEB 1732 (still a Friday though) and if you then press F4 you will see the "old style" calendar that was in effect at the time.

Before ending this discussion, perhaps I should note another distinction between some old and new style dates. Prior to the implementation of the new leap rule, the first day of the new year was considered variously as Jan 1, Mar 1 and Mar 25 (e.g. according to some, 25 MAR 1645 was the day after 24 MAR 1644). This left some ambiguity concerning the year for such dates as: 11 FEB 1732 OS. Therefore the custom was developed of using "double dating" to take note of the fact that this discrepancy had been considered. The above date might then be written: 11 FEB 1731/2 OS. You should be aware that the DATECALC utility will always assume JAN 1 to be the first day of the year. You may even use this to determine the correct double dating for an event. For example, suppose it is known that a person was born on Saturday, 30 JAN 1691 OS, but it is not known which new year rule was in effect. The DATECALC program will show that 30 JAN 1691 OS is a Friday but that 30 JAN 1692 OS is a Saturday. Therefore the correct double-dating would be: 30 JAN 1691/2 OS and the person who originally recorded the date was apparently using something other than JAN 1 as the date for the beginning of the new year.

For those wanting to find out more about various calendar systems I would recommend your reading the discussions in the books:

- "Tracing Your ROOTS" by the editors of Consumer Guide and distributed by Bell Publishing Company, New York (page 47)
- "Ancestry's Guide to Research" by Johni Cerny & Arlene Eakle, published by Ancestry, Inc., Salt Lake City