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THE USE OF STANDARD SOFTWARE PACKAGES FOR DATA MANIPULATION

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Engineers and technicians operating within design offices involved in drainage area planning have at their disposal a wide range of computing hardware and software.

In many offices these specific tools of the trade have initially been introduced in a relatively unplanned and piecemeal fashion having to be geared to the wider computing needs of the employer and more often than not as a means to catch up with, rather than draw level with the state of the market in new technology.

Incompatability of both hardware and software is in some cases very real, however, in most situations it is only perceived incompatibility for which solutions can often be found very cheaply, usually using those existing tools in an imaginative and intelligent manner.

Hardware generally falls into two or three main categories: mainframe and personal computers (PC's) and/or workstations / minis. As new technology develops the divisions between high power PC's and workstation / mini will become more blurred and eventually the only visible difference between corporate machines and other platforms will be operating system or user interface. At that stage machines requiring the sevices of "computer professionals" will have become transparent appendages to machines used by "professional computer users", i.e. us.

Software available in drainage offices also falls into two major categories: "profession specific" i.e. WASSP/WALLRUS, MOUSE, CHAT, SPIDA, STC25, PRISM, AUTOCAD, ICEPAC, SIRS etc. or "standard software packages" such as LOTUS123, TURBOBASIC, MSBASIC, DBASE, SUPERCALC, WORDSTAR, WORDPERFECT, SMART, ASEASYAS, QUATRO etc.

Many of both types of package are available for use on a number of platforms and most have the ability to import and export ASCII type and sometimes graphics type files.

The author has been seconded to Manchester City Council since mid 1989 and has been engaged on the construction, development and utilisation of a MACRO model which crosses a number of Municipal boundaries and which in its current incarnation has over 4000 pipes, more than 150 ancillaries and many bifurcations. This model is run on the City's BULL mainframe using an enlarged version of WALLRUS developed by M.C.C. Software Staff and Hydraulics Research Staff with input from the author. The MACRO model was assembled from a number of detailed mainframe and P.C. WASSP models and a number of coarse WASSP and WALLRUS models. Intensive use has been made of specially written routines using standard software packages to complete the exercise, many of these routines are very simple and will be demonstrated during the presentation.

Typical routines have developed sequentially as follows; (this list is not exhaustive)

a)DBASE routine for model simplification pruning and merging.

b)SUPERCALC routine for simplification merging and storage replacement.

c)ASEASYAS routine for hydrograph plotting (developed prior to obtaining MICROWALLRUS)

d)TURBOBASIC routines for converting downloaded mainframe block format files for input to plot programs.

e)WORDSTAR routines for plot file column manipulation.

f)TURBOBASIC routines for recalculation of roof area related DWF in large SSD files.

g)DBASE routines for manipulation of SSD. QIN, RED, HYQ and HYD file data.

h)Routines using a combination of packages for SSD file branch and pipe label renumbering.

i)TURBOBASIC routine for manipulation of WASSP/WALLRUS plot files into multiple graphic files for verification presentation.

j)Routines using TURBOBASIC and LOTUS123 for manipulation of TimeSeries rainfall data into adjusted spatially varied RED files.

k)Routine developed using STOS (an ATARI ST package) for presentation of animated graphic level and flow output for presentation purposes.

The above routines have been necessitated because of limitations in current versions of Profession Specific packages. They have been found useful in enhancing presentation together with increasing the knowledge of information relating to drainage area studies. Routines will hopefully continue to be developed both by the author and by others. Many engineers and technicians will derive satisfaction from delving into standard packages as an adjunct to accepted practices.

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Mini-Paper 3: Data Manipulation Using Standard Software
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A Woods (Watson Hawksley) : Would you consider releasing some of your routines into a "Wapug Public Domain"?

Ans : I don't see any problem in supplying routines to anyone interested