DRAFT 26/6/85

Domesday BBC Disc/Cassette Utilities -Description and recovery proceedures.

General

It is assumed that the reader of this document is aware overall of the "situation" about the use of the Centres BBC room for the validation of Domesday disks. This document is intended to be a fairly short term one, in case I get run down by a bus.

The tapes/disks that will come to LUT to be processed will firstly be copied to a "standard domesday editing" format. This has been selected as BBC 40 track format, as this is the most common format issued. The cassette files will be copied to a 40 track disk, and then manipulated to conform to the disk version of the Domesday data. (See figure 1 and flowchart)

This document will describe some routines developed at the Computer Centre, written in BBC Basic to do this manipulation and file transfer. Two EPROMS will need to be fitted, depending on what the BBC computer is required to do.

40 and 80 track disks will only need to be copied to the "standard" 40 track disk format. This is most easily done by *COPY available in the DNFS ROM. Copying from cassette to 40 track disk will require the *TAPEDISC utility available in the DISCDOCTOR ROM from Computer Concepts.

Any Research Machines formatted data will have to be converted to the BBC format. At the time of writing, there is no software to do this transfer.

The output "Work Disk" provides a backup facility, thereby not destroying the original disks/cassettes.

The series of BASIC programs are split into logical functions like copy fr cassette to disk, tidy cassette files for disk system, append disk programs etc. There are three streams of utility functions:

1) Copy data from cassettes to disk
2) Copy disk to disk (40 or 80 track to 40 track)
3) Run the Kermit file transfer program

These programs often move the PAGE variable to place the BASIC program out of the way of other routines. All streams should return to the Menu program. The first two do this automatically. In the case of the "Kermit" stream it is necessary to re-boot via <SHIFT>M<BREAK>. (See also accomanying flow chart)

All utility routines are held on the file server in a directory called BOOT. This is the directory a pseudo user BOOT attaches to when logging in to the file server. Automatic login is acheived by pressing CNTL and N keys, and then briefly tap BREAK.

The first two streams are fairly straight forward, and will some operator intervention. If the instructions are followed then these routines work well. They are known to be a little error prone if a disaster occurs.

It is highly likely that the programs will be modified, but the changes will be only slight. Current copies off all appropriate routines can be found on Multics, in the directory >udd>CC>OBSchou>domes_progs. There will be several archive files, in the form xx/xx/xx.archive, where xx/xx/xx is the date of the archive. These files, when de-archived, can be KERMIT-ed back to the file server. All .BBC files are in binary format. This means that the Kermit operator will have to issue the commands SET TEXT OFF and SET PARIRTY ON to Multics-Kermit, and SET FILE TYPE BINARY on the BBC-Kermit. I recomend this action only to be taken in the case of a total disaster, and the file transfer done by someone competent with Kermit.

Cassette copying stream

This is the most fussy stream,as it requires the operator to change cassettes, and answer questions to the programs.

The MENU program will ask the user which stream to follow.. select option (1), the Casette stream. MENU will set PAGE to &6000, and then CHAIN to a program "LOADCAS". Setting PAGE is necessary as the "LOADCAS" program calls *TAPEDISC from the DISK DOCTOR ROM, which uses low memory.

LOADCAS

The LOADCAS routine will assume that a formatted 40 track disk is inserted into DRIVE 0. It is assumed that the disk used has already been used, and will delete files from the disk. There is a series of *DELETE commands, surrounded by ON ERROR GOTOs. This was intended to skip the deletion of a file if that file did not exist. (!) This first part of the program can take a considerable amount of time.

The second part of theis program was intended to copy the files from cassette, but problems arose where the screen kept on displaying "COMPACTING FROM 0 TO 0". This latter part has now been placed in a file called LOADC1

LOADC1

LOADC1 will use DiscDoctor to load files on tape and copy them onto disk. There is a need again for "low memory", so this routine is again placed at &6000.

The routine will prompt the operator to load the appropriate cassette and side and then rewind the tape. Once rewound, the operator presses play, and DiscDoctor attempts to read in the data.

If a data file is not read in correctly, (ie a BLOCK? or DATA? prompt on the screen), the routine will not proceed to copy the next file. The operator should in the first instance rewind the tape again, and see if this does not help.

If the file cannot be loaded, then the tape files will need to be copied in a special session. A more competent operator will be necessary at this special session to tweak cassette head alignment, or volume, or some other parameter.

Once all the data has been loaded from the four cassette sides, this routine chains a program called "CASTIDY".

CASTIDY

Castidy is a routine to shuffle data into a format compatable for the Disk version of the Domesday Data collection software.

The first thing it does is to rename TEXT0 and TEXT1 files read in from cassette to TEXTA and TEXTB. This is because TEXT0/1 are files to be created. INDEX0 and INDEX1 will be merged into a single file, called INDEX.

Next, the whole of TEXTA is loaded into memory. The header (8 digits plus CR) are copied into a spare place to be later placed at the front of ALL TEXT files. Note that if this header block is incorrect, then all TEXT files will eventually be incorrect.

TEXT0 is created, and four of the 10 pages from TEXTA are copied across. Ditto TEXT1. TEXT2 is opened, and the last two pages of TEXTA are copied. TEXTB is then loaded, and the first two pages are copied to TEXT2. TEXT3 and TEXT4 follow the same proceedure as TEXT0 and TEXT1.

INDEX0 and INDEX1 are loaded and copied to a single INDEX file, with only the header from INDEX0 used as the header of INDEX.

All files then use OSFILE (at &FFDD) to change the load address to &5C3F for INDEX, and &5E28 for the TEXT files.

A final file is copied to the disk from the ECONET File Server called KFILE. This is a text file, and the length (currently &200) will have to be changed if KFILE is changed. Kfile is a file used to selectively copy files from a BBC top Multics in the Kermit stream.

Finally, PAGE is again set to &6000, and COPYPRO is chained.

COPYPRO

COPYPRO will copy the program files needed to edit the Domesday Data. The regeneration and !CONFIG files are not copied.

This program does a series of load program from the file server to &2400, select the Disk Filing System, and save the program. It then patches up the load address so that the routines are loaded at the correct address and not &2400.

The programs copied accross are: PMAIN, PDATA, PID, PPHOTO, PTITLE, PTEXT, !BOOT. The last file is only &F bytes long, and is a CHAIN command. The last thing COPYPRO does is to set the auto boot option to EXEC (ie *OPT 4,3)

Lastly, Page is set to &1B00 and MENU is chained, thereby completing the stream.

Disk copying stream

Menu option (2) is selected to copy 40 track or 80 track disks to a common 40 track format. Note that RML format disks are not copied at this stage: a further stream may need to be created to cope with RML data. There seems also to be some confusion as to what is required from master/backup disks.

Menu will set PAGE to &6000 and chain to a program called "LOADDIS". This routine simply writes large texts on the screen to inform the operator to load disks into known drives, with/without write protect labels.

All files on drive 1 are copied to drive 0, and then the !CONFIG and POUT files are deleted. The auto boot option is set to 3 (ie *opt 4,3) on drive 0. This routine eventually chains to LOADD2.

LOADD2

LOADD2 will load a KFILE file for use in the file transfer stage to Multics from the file server, and save it onto the backup disk. When all is completed, the operator is prompted to remove all disks, and then the MENU program is re-run.

Kermit option

Option 3 of the MENU program selects the file transfer of files to Multics from a floppy disk. This option causes the chaining of a program called KERM. Kerm is itself a two line program to *DISK and then *KERMIT.

The operator of Kermit must then manually ensure that the Multics end of Kermit is operational. The operator then issues the command: TAKE KFILE to BBC Kermit, and the rest should be automatic.

When all files have been sent, the last few command from KFILE will include FINISH (exit Kermit on the host) and possibly EXIT (from BBC Kermit). The only way to get back to the MENU option is to boot the BBC micro from ECONET with <CNTL>N<BREAK>

COMMENTS

The Computer Concepts ROM **MUST** be present on all BBC computers used for copying cassette files to disk.

The KERMIT rom (Version 1.02 preferred, version 0.53 otherwise) **must** be fitted to all Beebs used foir transferring files to Multics. Kermit is a little complicated to the novice, but it is anticipated that the user of Kermit will understand a little of what is going on.

All micros must be fitted with DNFS version 3.7