



MISO SYSTEMS, Inc.

Catalog 87-1: TRS-80

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	Product Nomenclature	Catalog #	Page	Price S&H
Operating Systems	LDOS-I 5.1.4 system	#L-10-010		\$59.95 F
	LDOS-I 5.1.4 disk	#L-10-110		\$24.95
	LDOS-III 5.1.4 system ..	#L-10-030		\$59.95 F
	LDOS-III 5.1.4 disk	#L-10-130		\$24.95
	LDOS 5.3 Mod3 Upgrade Kit	#M-10-033	2	\$34.95
	LDOS 5.3 Max Upgrade Kit	#M-10-833	2	\$34.95
	LDOS 5.3 Mod 4 Int. Kit .	#M-12-110	4	\$29.95
	LS-DOS 6.2 Model II/12 ..	#M-11-002		\$49.95 B
	SOLE	#M-10-021	5	\$14.95
	FIX Disk II	#L-70-400	5	\$14.95
	RSHARD - R/S HD driver ..	#M-12-013	5	\$29.95
Languages	CON80Z	#M-30-033	17	\$29.95
	DSMBLR	#M-30-053	11	\$34.95
	EDAS	#M-20-082	10	\$74.95 D
	EnhComp	#M-20-072	7	\$124.95 D
	MC	#M-20-064	8	\$124.95 D
	MRAS	#M-20-083	9	\$89.95 D
	TBA	#L-21-010	22	\$39.95 D
	LS-TBA	#L-21-011	22	\$39.95 D
	PRO-CON80Z	#M-31-033	17	\$29.95
	PRO-CREATE	#M-21-082	10	\$74.95 D
	PRO-DUCE	#M-31-053	11	\$34.95
	PRO-EnhComp	#M-21-072	7	\$124.95 D
	PRO-MC	#M-21-064	8	\$124.95 D
	PRO-MRAS	#M-21-083	9	\$89.95 D
	RATFOR-M4	#M-21-073	6	\$99.95 F
	UNREL-T80	#M-30-054	24	\$49.95
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	LS-Host/Term	#L-35-281	18	\$59.95
	LS-LED	#L-30-021	17	\$34.95
	Mister ED	#M-51-028	13	\$59.95 B
	PRO-WAM	#M-51-025	12	\$74.95 F
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	FASTBACK	#L-30-055	5	\$29.95
	Mark III Collection	#M-99-003	24	\$99.95 H
	UTILITY-I	#L-32-070	16	\$29.95
	LS-diskDISK	#L-35-212	19	\$39.95
	LS-FASTBACK	#L-30-056	5	\$29.95
	LS-UTILITY	#L-32-150	16	\$29.95
	Mark IV Collection	#M-99-003	24	\$99.95 H
Pubs.	LCOPY [CP/M]	#M-32-063	18	\$39.95
	LDOS 5.1.4 Manual	#L-40-020	2	\$30.00 D
	THE SOURCE 3-Volume Set .	#L-60-020	20	\$74.95 F
	THE MISOSYS QUARTERLY subscription		23	see text

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F = \$5.00; G = \$7.50; H = \$10.00; All unmarked are \$2.00 each
Canada/Mexico add \$1 per order; Foreign use US rates times 3 for air shipment

We accept MasterCard, VISA, and Choice; Checks must be drawn on a US bank.
COD's are cash, money order, or certified check to first-time customers.

General Information

MISOSYS specializes in quality tools and professional software to enhance your microcomputer system. We have been serving the TRS-80 community since 1978 with a professional and serious outlook. MISOSYS played a key role in the development of the LDOS version 5 and TRSDOS version 6 operating systems for Logical Systems, Inc., a company we cofounded. On March 1st, 1986, MISOSYS acquired the retail operation of Logical Systems. We are now the publisher and retailer for LDOS as well as the entire line of products previously sold by Logical Systems. Technical support for these products is also our responsibility.

Our products are used worldwide by the discriminating professional, the casual computer user, as well as by the devoted hacker. In keeping with this tradition, we have professional products for the TRS-80 Models I, II (using LS-DOS), III, 4, 4P, 4D, as well as MS-DOS and PC-DOS based machines.

In the past, MISOSYS has published "NOTES FROM MISOSYS" as a means of keeping our customers informed. NOTES was issued periodically. Logical Systems' also used to produce a QUARTERLY publication, then a periodic JOURNAL. MISOSYS now publishes THE MISOSYS QUARTERLY. This publication is available by subscription only and is described elsewhere in this catalog.

When you purchase one of our software packages which are to be registered, it will be important to send in the registration card - that's how one gets registered. It's also important to transcribe the serial number found on either the diskette label or displayed when invoking the software. Where applicable, the registration card is usually packaged with the diskette.

The information in this catalog represents all the printed matter we can send you concerning a software package. If this still does not answer all of your questions, please write or call; however, there is no other printed material we can send you. The current address and telephone number of MISOSYS, Inc. is as follows:

MISOSYS, Inc.
P.O. Box 239
Sterling, VA 22170-0239
703-450-4181

If you are ordering from the United States outside of Virginia, you may place telephone orders direct to our order desk toll free by calling 800-MISOSYS (that's 800-647-6797 for you digital folks). Please, we cannot handle customer support or questions of a technical nature on our order line. Any telephone query not relating to an order must be directed to 703-450-4181.

LDOS 5.3 Upgrade Kit

LDOS provides portability between models and systems. LDOS 5.3 for the Model 3, Model 4 in the Model 3 mode and Model 4 LS-DOS 6.3 all use the same disk formats, providing data diskette compatibility. If you use LS-DOS 6.3, you should use LDOS 5.3 on your Model 4 for Model 3 mode software. LDOS can take advantage of the higher system clock speed available when running on a Model 4 in the Model 3 mode. LDOS is documented in an extensive operating manual (over 400 pages) containing both user instructions and a large technical information section. Numerous examples are given for all operating functions.

Files under LDOS carry their date of creation or last modification (01/01/80 through 12/31/99), and are marked with a "Mod" flag if modified since their last backup. Many LDOS commands and utilities can manipulate files by user specified file extension, full or partial file name (including the use of wildcard characters), by Mod flag, or by a date or range of dates.

An extensive Job Control Language (JCL) is included. This is a compiled language that allows the user to input commands, Job Control conditionals and execution statements into a file that will control the computer's job stream. Execution can be tied to the real time clock time and can provide both visible and audible alerts. Variables and labels may be assigned at run time to select the actual JCL execution and starting position in the JCL file.

LDOS comes with an RS-232 driver program, a terminal utility with disk file send and receive, Keyboard Type Ahead, a disk modifying DEBUG utility, a file editing utility, a program Patch utility, a Key Stroke Multiply program for key redefinition, full printer Spooling to memory and/or disk, a printer output formatting program, a feature to reside system files in memory for very fast operation, and more.

LDOS is a device independent system, capable of device linking, routing, setting, and filtering. LDOS supports up to eight logical disk drives, including 35 to 80 track 5 inch floppies, 8 inch floppies, single/double density, single/double sided, and hard disks up to 13 megabytes as a single drive. Features for other than five inch floppies are dependent on the actual hardware in use, and will require optional driver software. LDOS is usable with a single drive, but some features may require two drives.

APPEND, ATTRIB, AUTO, BOOT, BUILD, CLS, COPY, CREATE, DATE, DEBUG, DEVICE, DIR, DO, DUMP, FILTER, FORMS, FREE, KILL, LIB, LINK, LIST, LOAD, MEMORY, PURGE, RENAME, RESET, ROUTE, RUN, SET, SETCOM, SYSTEM, SPOOL, SYSTEM(SYSGEN), SYSTEM(TRACE), TIME, TIME(CLOCK), TOF, and VERIFY.

BACKUP mass moves: files identified by full or partial file specs (including wildcard characters); files by date or range of dates; visible, invisible, or system files; files that do/do not exist on the destination disk; between disks of different sizes and configurations; or normal "mirror-image" backups. Will prompt for disk swaps if the destination disk becomes full.

CMDFILE handles system tapes and load module format disk files. It allows concatenation and load offset of tape and disk files, and will move files between disk and tape.

CONV moves files from Model 3 TRSDOS to an LDOS diskette.

DATECONV converts pre-LDOS 5.3 disks to 5.3's extended dating operation.

FED allows easy modification or "zapping" of disk files.

LOG allows inserting a non-bootable system disk in drive 0.

FORMAT allows the following disk parameters to be specified: disk name and

master password, single or double density, number of tracks, number of sides and the bootstrap step rate for system disks. Density, sides and track count are dependent on the hardware in use.

HELP provides on-line help screens for DOS commands and BASIC.

LCOMM is a terminal program that allows machine to machine communications, supporting the keyboard, display, printer, and the transfer of disk files.

PATCH zaps disk files, either by direct disk file modification, or by memory load addresses.

REPAIR modifies some non-LDOS diskettes so they are readable by LDOS.

QFB performs Quick "mirror image" Format and Backups.

JL/DVR enables the JobLog feature which will send a list of all commands and error messages along with a time stamp to a specified file or device.

KI/DVR enables keyboard related features such as Type Ahead, Screen Print, key repeat, and CLEAR key recognition used with other LDOS features. Generates all 128 ASCII characters.

RS232/DVR lets you specify baud rate, word length, stop bits, parity, flags to set DTR and RTS, and checking of the DSR, CD, CTS, and RI signals.

KSM/FLT assigns phrases or character strings to be used as keyboard input when the CLEAR and alphabetic keys are pressed together (a "SUPERKEY!").

MINIDOS provides access from within a program to certain commands such as DIRectory, Free space, KILL a file, and DEBUG.

PR/FLT provides the setting of lines per page, physical page size, line width, line indent on wrap around, constant indent of the left margin, a one character translate feature, tab expansion, added linefeed, and a hard form feed during pagination.

TED is a full screen text editor for ASCII files. Has cursor manipulation, insert/overstrike text modes, block move/copy/delete, page up/down, and more.

Upward compatible with Microsoft DISK BASIC. LDOS commands may be invoked from BASIC. Includes single key commands to copy, edit, list, or move the current program line; to list the next/previous; the first/last program line. Built in string array sort. Includes a powerful INPUT@ for screen fielded input. File modes may be declared "old" or "new" when opened. High speed load and save. Chain programs with common variables. Logical record lengths from 1 to 256 are supported. "SET EOF" lets you adjust the end of the file marker for random files. "RESTORE nnnn" restores the data pointer to a specified line number. CMD"X" provides variable and line number cross referencing. CMD"N" provides program renumbering. CMD"V" dumps an active variable list.

Note: LDOS 5.3 is available only as an upgrade kit to 5.1.4. New users should purchase the LDOS 5.1.4 User Manual in addition to the upgrade kit.

Ordering Information: For TRS-80 Model III => LDOS-5.3 #M-10-033
: For Lobo MAX80 => LDOS-5.3M #M-10-833
: LDOS 5.1.4 User Manual => #L-40-020

Hardware Interface Kit

If you are running LDOS 5.3 on a Model 4, the LDOS Hardware Interface Kit will allow you access to your Model 4 hardware features while using LDOS 5.3. Here's what you get with this economically priced kit.

[1] KI4/DVR - This is a keyboard driver replacement for KI/DVR. With it installed, the <CTRL> key is used instead of <SHIFT DOWN ARROW>; the <CAPS> key is used instead of <SHIFT-0>; and the three function keys generate values for both unshifted and shifted activations. You still get the powerful type ahead facility and the screen print function.

[2] SET2RAM/CMD - This utility switches your machine from the Model III ROM mode to the Model III RAM mode. This recovers some low-memory space by doing away with the cassette routines. It also adds two powerful memory management facilities. The @BANK handler provides the same bank switching capability as TRSDOS 6 for direct program control of external memory banks. The @EXMEM extended memory handler allows for easy programming of both character and page I/O from/to memory banks.

[3] MemDISK/DCT - This is a RAM disk which uses the facilities of SET2RAM in order to provide a one or two bank memory drive - the same as TRSDOS 6. With it you can create another "disk" drive of up to 63K.

[4] BANKER/CMD - A utility to manage bank utilization.

All four modules come fully documented and are ready to install into your LDOS 5.3 system using a Model 4 computer. A 128K machine is only required for MemDISK/DCT and the memory management facility.

Ordering Information: For LDOS 5.3 => **Hardware Interface Kit #M-12-110**

RSHARD - Hard Disk Driver

Finally for your Radio Shack hard disk drive is this hard disk driver package from MISOSYS - at a reasonable price. If you have been using your Radio Shack drive only under TRSDOS 6, you're missing the enjoyment of running LDOS 5.3 on a hard drive. You get support for both LDOS 5.3 and LS-DOS 6.3

[1] RSHARDx/DCT - This driver allows easy partitioning by both head and/or cylinder. It supports two eight-headed drives up to 1024 cylinders each.

[2] RSFORMx/CMD - This is the formatter which adds both low level and high level formatting and directory information to your drive's partitions.

[3] HDCHECKx/CMD - Lets you check the performance of your drive at any time.

[4] ARCHIVEx/CMD - Our special archive utility lets you backup some or all of the files on your hard drive to multiple floppies. This includes BIG files and small files. Faster than HARDCOPY/BAS. Combines the facilities of BACKUP and HARDCOPY in one program.

[5] RESTOREx/CMD - This lets you selectively restore some or all archived files to your hard drive.

All ten modules come fully documented and are ready to install into your LDOS 5.3 or LS-DOS 6.3 system (or both) using a Model 3/4 mode computer.

Ordering Information: For both LDOS 5.3 and LS-DOS 6.3 => **RSHARD #M-12-013**

FIX DISK 2

This contains patches for the following programs to provide proper operation under LDOS. Version numbers are specific. You must have the version indicated for the Model indicated if these patches are to install correctly.

FIX/TEXT	Instructions for the SCRIPT, LSCRIPT, and VC patches.
SCRIPT1/FIX	For Mod 1 SCRIPSIT, Version 1.0, for Mod 1 use.
SCRIPT3/FIX	For Mod 1 SCRIPSIT, Version 1.0, for Mod 3 use.
SCRIPTSIT32/FIX	For Mod 3 SCRIPSIT, Version 3.2, for Mod 3 use.
LSCRIPT/FIX	Enhance Mod 1 SCRIPSIT, Ver 1.0, for use on Mod 1/3 LDOS.
PENCIL/FIX	ELECTRIC PENCIL, Version 1, for Mod 1.
VC/FIX	Mod 1 Visicalc, Version 1.20Z, for Mod 1/3 LDOS.
RSCOBOL/FIX, etc.	Make R/S COBOL version 1.3B with Mod 1/3 LDOS.
RSBASIC/FIX, etc.	Make R/S BASIC Compiler ver 2.4 work with Mod 1/3 LDOS.
EDIT80/FIX, etc.	Make Mod 1 M80 Assembler ver 3.43 run on Mod 1/3 LDOS.
BASCOM/FIX, etc.	Make Mod 1 MS-BASIC Compiler Ver 5.23 run on Mod 1/3 LDOS.
F80/FIX, etc.	Make Mod 1 MS-FORTRAN Ver 3.42 run on Mod 1/3 LDOS.
DTPLAN/MRG	Fix for the Desktop Planner program from Radio Shack.
MLS/MRG	Fix the MLS program of R/S's Business Mailing List.
VC31/FIX	Fix the Mod 3 VisiCalc Ver 1.31Z for use with Mod 3 LDOS.
VC315/FIX, etc.	Fix Mod 3 Enh. VisiCalc vers 150Y0/160Y0 for Mod 1/3 LDOS.
EDITIII/FIX	Patch for EDIT/CMD that comes with Mod 3 FORTRAN.
RCOBOLA/FIX	Patch for RS RUNCOBOL for use with ISAM files.
RSCOBOLA/FIX	Fix error if RSCOBOL is entered without using a filename.
RCOBOLB/FIX	Fix problem with OPEN-EXTEND mode using non-ISAM files.
PROIPLUS/TEXT, ...	Modifies Profile 3+HD for use on Mod 1 under LDOS.

Ordering Information: For LDOS Model I/III => **FIX Disk II #L-70-400**

SOLE

This utility creates a double density booting SYSTEM diskette for use with LDOS 5.1 on a Model I. It constructs a single density track 0 on a previously formatted double density diskette. It then adds a second BOOT routine and double density READ ONLY disk driver to be used to read SYS0.

Ordering Information: For use with the TRS-80 Model I => **SOLE #M-10-021**

Fastback

Hard disk owners - tired of waiting forever while the HARDCOPY/BAS (Model 1/3) or HDCOPY4/BAS (Model 4) program slowly copies your hard disk file to floppy sector by sector? Do you want to automate your backup procedure and greatly increase its speed at the same time?

FASTBACK is a 100% machine language program designed to quickly backup a file from hard disk to floppy. It automatically recognizes all floppy formats - single or double sided, 40 or 80 tracks, etc. Built in error checking prevents stopping in the middle of a backup - simply put in a new disk and the process will continue. FASTREAD allows you to restore the file from floppy back to the hard disk should the need occur.

All prompts needed to start these utilities can be answered with a JCL file, allowing you to totally automate the startup. Once started, the programs will prompt for a new disk when needed, and show the next disk number to insert. This makes it possible for an ordinary user to perform perfect backups time after time without fear of mistake.

The FASTBACK package requires LDOS 5.1 or later for the Model I or III, and TRSDOS 6.2 or later for the Model 4/4P/4D.

Ordering Information: For use with TRSDOS 6 => **LS-FASTBACK #L-30-056**
: For use with LDOS 5 => **FASTBACK #L-30-055**

RATFOR - Language Translator

As a user of RATFOR, you will be among a select set of individuals who appreciate and utilize structured source code in using a powerful, fast, easy to use language like FORTRAN. With RATFOR, you can reduce your programming time and effort dramatically over that required when FORTRAN is used. The reason this is possible is because RATFOR code is fully structured, facilitating modification and debugging, and because program flow is apparent from the overall appearance of the program. Also, comments are simpler and more versatile than in FORTRAN, simplifying self-documentation of your programs. This allows changes and additions without most of the subsequent debugging traditionally tolerated when you modify FORTRAN.

RATFOR is different from FORTRAN in several fundamental ways: First, RATFOR is free-field; statements customarily begin in column 1 unless indents are in effect. Second, blanks are significant in RATFOR in that they are delimiters; in FORTRAN, they are ignored and delimiters are taken from context. Third, numerical statement labels are unnecessary in RATFOR, except for FORMAT labels and where required by the READ and WRITE "END=" and "ERR=" options. Fourth, all 80 columns are available for RATFOR statements.

When the RATFOR capabilities are relied upon rather than the FORTRAN looping and branching, a RATFOR program will take on the appearance of structured programs written in other structured languages such as ALGOL, PASCAL, and C. A major enhancement of RATFOR is user-defined macros. This capability lets you extend the language by defining new keywords.

RATFOR is implemented as a two stage compilation. The first stage "compiles" RATFOR source code to an "object" file of FORTRAN. The software to provide this compilation is included in this package. To execute the code, a FORTRAN compiler is required; you must obtain a FORTRAN compiler separately. Your source code must comply with the idiosyncrasies of the FORTRAN compiler you are using. The RATFOR translation to FORTRAN is itself a two-stage process. The first stage examines the source code for macros and user-defined alpha-numerics and exchanges them for their appropriate text. This stage is called macro expansion. In macro expansion, upper and lower case are distinct. The second stage searches for RATFOR keywords and translates them to FORTRAN syntax and writes FORTRAN card image format (80 column ASCII) code with the statement labels in columns 1-5, continuation marks in column 6, and nothing beyond column 72. After the second stage, everything comes out lower case except literals and character strings.

RATFOR is an excellent language for general purpose use, but it is vastly superior to FORTRAN for writing very large programs. This is because the advantages of self-documentation and structured source code are much more important when working with a large number of modules without documentation, as is necessary when producing large programs.

Other than as a language in itself, RATFOR is very useful for two very different applications: (a) as an "artificial intelligence" aid in writing structured FORTRAN programs, and (b) a way to write RATFOR on a microcomputer and upload FORTRAN to a mainframe for execution.

Extensions to RATFOR supported include the "arith" macro to perform binary arithmetic operations, read and print macros for short form READ and PRINT, and support of any valid FORTRAN expression for "switch" and "case" operands.

This RATFOR package includes the language translator, a "batch" file for automated compilation, a RATFOR language Reference Manual, and an Installation Manual. Complete application programs provided in RATFOR source code form are included on disk to aid you in getting started with RATFOR. RATFOR-M4 also includes our LED text editor for source code preparation.

Ordering Instructions: For Model 4 under TRSDOS 6.2 => **RATFOR-M4 #M-21-073**
: For MS-DOS/PC-DOS systems => **RATFOR-86 #M-86-073**

EnhComp BASIC Compiler

This is an enhanced BASIC compiler released in 1986 and reviewed in the March 1987 issue of 80 Microcomputing. This compiler has lots of great features. It handles the bulk of Model III Microsoft BASIC while it supports additional commands and functions. Standard is full floating point with both single and double precision functions; full random file access with fielding (adds "X" mode for recls to 32767), turtle graphics, pixel graphics, keyed array sort, multi-lined functions, user commands, structured IF-THEN-ELSE and REPEAT-UNTIL, printer control, sequential file positioning, and much much more. EnhComp has a tokenizing editor for your maintenance of source code.

A "supervisor" program automates the typical edit-compile-test phases inherent when using compilers which make using EnhComp almost as easy to use as your BASIC interpreter.

An interesting facet of this compiler is it has a complete built-in Z80 assembler. With this facility, you can EASILY create hybrid programs composed of BASIC statements and in-line assembly code. This completely eliminates those contorted string packing and READ DATA statement high-memory module complex techniques for having your BASIC program access a machine code module. The Z80-MODE even gives you access to BASIC's variables!

The following summarizes the power and completeness of EnhComp. Look it over and make your decision. This one's for you!

Commands: ALLOCATE; BKOFF; BKON; COMPL(x,y); CLEAR <exp>; CLS; CLOSE; COMMAND name(input variable list); CSUB "label"; DATA list; DEC intvar; DEFFN name(variable input list) = exp; DEFDBL varnames; DEFINT varnames; DEFSNG varnames; DEFSTR varnames; DIM; DOWN; DRAW; ELSE; END; ENDCOM; ENDFUNC; ENDFI; ERROR; EXISTS; FIELD; FOR; FUNCTION name(input variable list); GET; GOTO integerlit; GOTO "label"; GOSUB integerlit; GOSUB "label"; GTO "label"; INC intvar; INPUT; INPUT#; INVERT; IF; JNAME "label"; KEY array(exp); KILL filespec\$; LEFT; LET; LINEINPUT; LOAD filespec\$; LPRINT; LSET; MID\$; NEXT vl,v2,...; OPEN (modes: "r", "i", "o", "e", "x"); ON BREAK GOTO address; ON ERROR GOTO address; ON exp GOTO list; ON exp GOSUB list; OUT; PLOT; POKE; POP; POSFIL(#buf,recnum,offset); PRINT; PZONE(pos,pos,...); PUT param; RANDOM; RDGOTO addr; RDGTO "label"; READ list; REM or ""; REPEAT; RESTORE; RESUME line #; RETURN; RESET(x,y); RIGHT; RSET; ROT=exp8; RUN filespec\$; SCALE=expl6; SCLEAR; SET(x,y); SORT(expl,exp2); STOP; SYSTEM"command string"; SZONE(pos,pos,...); SWAP var1,var2; TAG array(exp); THEN; TROFF; TRON; UNTIL exp; UP; WPOKE addr,exp.

String Functions: BIN\$(expl6); CHR\$(exp8); HEX\$(expl6); INKEY\$; LEFT\$(exp\$,exp); MID\$(exp\$,expl); MKD\$(exp); MKI\$(exp); MKS\$(exp); RIGHT\$(exp\$,exp); STR\$(exp); STRING\$(expl,exp2); STRING\$(expl,exp\$); USING format\$;varlist; WINKEY\$.

Numeric Functions: &Bd0...d15; &Hdddd; &Odddd; ABS(exp); ADDRESS("label"); ADDRESS(line #); ASC(exp\$); ATN(exp); CDBL(exp); CINT(exp); COS(exp); CSNG(exp); CURLOC; CVD(exp\$); CVI(exp\$); CVS(exp\$); EOF(bufnum); ERL; ERR; EXP(exp); FIX(exp); FRE(exp); INP(exp); INT(exp); INSTR(expl\$,exp2\$); INSTR(expl,expl\$,exp2\$); LEN(exp\$); LOC(bufnum); LOF(bufnum); LOG(exp); MEM; PEEK(expl6); POINT(x,y); POS(dummy); RND(exp); ROW(dummy); SGN(exp); SIN(exp); SQR(exp); TAN(exp); TYPE(var); VAL(exp\$); VARPTR(varname); WPEEK(addr).

Numeric Binary Operators: "&"; "*"; "/"; "+"; "-". Boolean operators: "=", "<"; ">"; "<>"; "<="; "<"; ">="; ">". Logical Bit-Wise Operators: "AND"; "OR", XOR. String Operators: "="; "<"; ">"; "<="; ">="; "<>".

Ordering Information: For use with TRSDOS 6 => **PRO-EnhComp #M-21-072**

: For use with LDOS 5.x, TRSDOS 1.3 => **EnhComp #M-20-072**

MC C Language Compiler

If you are looking for a full C compiler, look no further. If you are looking for a well stocked UNIX System V standard library, look no further. MC, reviewed in the January 1987 issue of 80 MICROCOMPUTING, is a complete C compiler which adheres to the standards established by Kernighan and Ritchie. The library of functions is extensive and System V compatible. The compiler generates Z-80 assembler code to be assembled by a Microsoft compatible relocatable macro assembler (either M-80 or our own MRAS). The libraries are files of relocatable object modules.

No need to detail the compiler: it's multipass, it's complete. Beyond K&R, enumerated types (enum) and type void are supported.

Here's what you get in the standard library: abort, abs, alloc, asctime, atoi, atol, brk, btoi, calloc, checkc, clearEOF, clearerr, close, cmdi, creat, ctime, dup, dup2, execl, execv, exit, _exit, fclose, fcntl, fdopen, fdwn, feof, ferror, fflush, fgetc, fgets, fill, fopen, fprintf, fpup, fputs, fread, free, freopen, fseek, fstat, ftell, fwrite,getc, getchar, gets, getw, gttty, index, ioctl, isalnum, isalpha, isascii, _isbigit, iscntrl, isdigit, islower, _isodigit, isprint, ispunct, isspace, isupper, isxdigit, isatty, itoa, itob, itoo, itou, itox, labs, localtime, longjmp, lpower, lseek, ltoa, ltob, ltoo, ltou, ltox, malloc, memccpy, memchr, memcmp, memcpy, memset, move, open, option, otoi, otol, perror, printf, putc, putchar, puts, putw, qsort, read, realloc, rewind, rindex, sbrk, scanf, seek, setjmp, sprintf, sscanf, strcat, strchr, strcmp, strcpy, strcspn, strlen, strncat, strncmp, strncpy, stripbrk, strchr, strspn, stty, swab, sys_errlist, sysdate, system, systime, tell, time, toascii, tolower, toupper, ttyname, ungetc, ungetch, unlink, write, _xlate, xtoi, xtol, zero.

The math library contains: acos, asin, atan, atan2, atod, atof, ceil, cos, cosh, dfix, dsgn, dtoa, exp, fabs, fabsf, fatn, fcos, fexp, ffix, fint, flog, fmod, fraise, frexp, frnd, fseed, fsgn, fsqr, ftan, ftoa, hypot, ldexp, log, log10, modf, pow, rand, sin, sinh, sqrt, srand, tan, tanh. All standard functions are double precision.

Additional functions are: box, call, circle, curpos, cursor, freemem, inkey, inport, line, outport, pixel, ploc, pmode, point, reset, set, strepl, strept, strfind, stright, strleft, strmid.

Header files supplied are: errno.h, fcntl.h, math.h, setjmp.h, sgTTY.h, stat.h, stdio.h, time.h, z80regs.h.

MC supports command line I/O redirection for compiled programs, wild-card file specifications, parsing for UNIX "." extensions in file specifications, overlay support (requires MRAS), a full pre-processor, lots of options, and is designed for the programmer wishing the ultimate in C compilers. The package is supplied with the compiler, pre-processor, an optimizer, assembler macro files, C libraries, a Job Control Language file, the header files, and a 400+ page user manual. MC requires the use of either M-80 or MRAS (available separately), 2 disk drives, and upper/lower case.

MC is a full-featured compiler for the discriminating programmer!

Ordering Information: For use with TRSDOS 6.x => **PRO-MC #M-21-064**
: For TRS-80 Models I/III under LDOS 5.1 => **MC #M-20-064**

MRAS Relocatable Macro Assembler

This is an advanced Z-80 assembly package for the programmer who wants a powerful and flexible development system. It includes a macro assembler which generates either relocatable object code modules or CMD files directly (MRAS), a relocatable module linker (MLINK), a relocatable module librarian (MLIB), a full-screen text editor (SAID), a utility for converting to/from line-numbered files (FIXUP), and a cross reference tool for directly generated CMD files (XREF).

MRAS generates Microsoft M-80 compatible /REL files while it supports 16-bit externs. Powerful macro support includes REPT, IRP, and IRPC as well as standard macro parameters by both keyword and position. It supports nested includes and gets and a full range of nested conditionals: ELSE, ENDIF, IF, IFn, IFABS, IFDEF, IFEQ, IFEXT, IFLT, IFGT, IFNDEF, IFNEXT, IFNE, IFREF, IFREL. Relocatable segments include ASEG, CSEG, DESG and COMMONs. MRAS incorporates a fast binary-searched symbol table and the ability to enter symbol values from the command line. Labels can be any length with 15-character significance. It has flexible output redirection of listing and symbol table. MRAS supports .REQ for automatic library search by the linker.

MLINK supports virtual memory bit-stream buffering so you can link a program too large to fit in available memory, REL and IRL (indexed) library searching, direct generation of complex program overlays, and does not generate disk space for DEFS regions in DSEGs and COMMONs. You get provisions for switching the link address, or the origin of each segment type to enable ROMable file generation. The linker can generate either a normal executable command file (CMD) or a core image file (CIM). Runs from JCL, too. MLINK supports the following special link items: 0-3, 5-7, 9-11, 13-15.

MLIB maintains relocatable module libraries. It supports both Microsoft relocatable (REL) libraries and Digital Research indexed relocatable (IRL) libraries. MLIB is menu driven for ease of use. With it you can add, delete, extract, or replace a module. You can get a brief or detailed module map which lists all entries, externs, and commons; defines which segment they're in, and specifies the module size, program size, and data size. You can invoke a DOS command from the linker. MLIB runs from JCL, too.

SAID is an advanced full screen text editor using "word-processing" type editing. SAID's command keys can be customized by you with the installation program provided. It can be used to generate your assembler source code, C-language source code, or edit any type of ASCII file. Model 4 128K operation provides multiple editing buffers.

FIXUP can be used to convert files generated with other assemblers to and from an ASCII format. This means you can use your existing assembler source files with our full screen text editor.

A cross reference listing of a direct generated program is performed by **XREF**. It produces a listing identifying all defined labels, the line number containing the definition, its value, and the file name of the source file containing the definition. For each defined label, all references to the label are listed by line number and source file containing the reference.

Ordering Information: For use under TRSDOS 6.x => **PRO-MRAS #M-21-083**
: For LDOS 5.x, TRSDOS 1.3/2.3 => **MRAS #M20-083**

EDAS/PRO-CREATE Editor/Assembler

This package includes a powerful combined disk-based line editor and Z-80 macro assembler and a separate full-featured full screen text editor. Among the assembler's features are direct assembly from one or more source disk files or memory buffer, conditional assembly, macro assembly, extensive cross reference listings, and a comprehensive line editor that supports upper and lower case text entry. EDAS was used to develop LDOS 5 & 6 and TRSDOS 6.

It assembles object code to disk as a directly executable load module (CMD). Source code can exist in memory as well as included disk files when using the *GET assembler directive nestable to five levels. Conditional assembly is supported with ten pseudo-ops: IF, IFn, IFLT, IFEQ, IFGT, IFDEF, IFNDEF, and IFREF. Conditional assembly supports the "IFx ELSE ENDIF" construct. Conditional expressions can be nested to 16 levels.

The expression evaluator supports left-to-right evaluation of addition, subtraction, 16-bit by 8-bit integer multiplication, 16-bit by 8-bit integer division, modulo division, shift, logical AND, logical OR, logical exclusive OR, unary one's complement, as well as binary operators: EQ, NE, GE, GT, LE, LT, SHL, and SHR; unary operators: HIGH and LOW.

Data pseudo-ops are: DS, DW, DB, DM, DEFS, DEFW, DEFB, DEFM, DC, DATE, TIME, DSYM, and DX with binary, octal, decimal, hexadecimal, and string constants. More pseudo-ops are: COM, LONG, TITLE, PAGE, SUBTTL, REF, OPTION.

Labels may be up to 15 characters long. Labels must start with A-Z, "@", or "\$". Positions 2-15 may also use "?" and "_".

Nested 7-level MACROS are supported with parameters both positional and by keyword. Values can be applied to any parameter at MACRO definition time to allow for expansion time defaults if a parameter is omitted at the time a MACRO is referenced. Intel in-line macros REPT, IRP, and IRPC are supported.

A sorted symbol table listing is available during the assembly. A complete CROSS REFERENCE listing is performed by the XREF utility. It produces a listing identifying all defined labels, the line number containing the definition, its value, and the file name of the source file containing the definition. For each defined label, all references to the label are listed by line number and source file containing the reference.

The line editor operates on text in memory and uses a command syntax identical to BASIC for intra-line editing. You can input text in upper or lower case. The editor supports a block move and a block copy of lines. Global changes to character strings can be made throughout the text buffer or to only a designated range of lines with the <C>hange command. A <F>ind command will search the text buffer for the next occurrence of a string. Single line scrolling is supported with the <UP-ARROW> and <DOWN-ARROW> keys. A <U>sage command displays text buffer status. You can invoke DOS commands from within the editor.

When all things are considered, if you are writing system software, support software, applications - big or small, This package will provide the power to make your assembly job easier, faster, and more worthwhile.

Ordering Information: For use with TRSDOS Version 6 => **PRO-CREATE #M-21-082**
: For use with LDOS 5.x, TRSDOS 2.3/1.3 => **EDAS #M-20-082**

DSMBLR/PRO-DUCE Disassembler

Programmers have probably been disassembling machine code programs since the time programs were being "hand" assembled. This disassembler is a tool for helping you with the process. It's a third generation product. This tool provides extensive capabilities such as direct disassembly from CMD disk files, automatic partitioning of output disk files, data screening for non-code regions, and full label generation. It even generates the ORGs and END statement - the complete ball of wax.

Surely a tool of this capability should be difficult to use. Not so! You will find that the use of this disassembler - even by a beginning assembly language programmer - will be paying handsome rewards with the ease of its use and clarity of the documentation. It's a professional tool for your use.

The labeling disassembler produces an assembler source code using ZILOG mnemonics from either Z-80 machine language resident in memory or directly from a disk CMD-type file. The disassembler operates in two passes in order to incorporate symbolic labels in the source output. The symbolic labels are generated for address and 16-bit references within the disassembly request.

References preceding the START address or references that follow the END address are output as EQUates. Addresses between program segments such as would be referenced from DEFS-type instructions are also output as EQUates. A reference is any relative instruction target address or a 16-bit target for load, call, jump, add, or subtract instructions.

Just about every program that you will disassemble has segments that are actual code and other segments that are data. The disassembler allows you to build a "screening data file" which tells the disassembler what segments of the program are to be interpreted as data regions. You enter the addresses of the "segments" after analyzing the target program's disassembly. A sample screening data input is:

```
5228-5229,$5384-53aa,#5829-5832,5416
$5b20-5b3d,5f67-5f68.
```

Output directed to the CRT is displayed in screen-sized pages. The display will include the hexadecimal address, the machine code in hexadecimal, a sequential line number, the OP code, operand, and displayable ASCII characters equivalent to the disassembled instruction's hex code. A page advance is user controlled by key entry.

Output routed to the PRINTER is paged at 56 lines per page. Each page has column headings, supports a user-entered TITLE, and is numbered for producing sophisticated print-outs that look identical to an assembler listing. Columns include ADDRESS, HEX CODE, LINE NUMBER, OPCODE, OPERAND, and ASCII equivalent of the hex code.

Output routed to DISK produces a disk file suitable for loading into SAID (supplied with MRAS), EDAS or PRO-CREATE, Disk-modified EDTASM, Radio Shack Series I EDTASM, or Microsoft's ALDS (M-80) and is automatically segmented into manageable file sizes. The disassembler will even prompt you to change the output file diskette when the disk becomes full.

Ordering Information: For TRSDOS Version 6 => **PRO-DUCE #M-31-053**
: For LDOS 5.x, TRSDOS 2.3/1.3 => **DSMBLR #M-30-053**

PRO-WAM - Window & Application Manager

PRO-WAM is a SIDEKICK like window controller and an applications manager which supports keystroke invocation of four memory resident applications selected by you with direct invocation from disk of all others. A library executive is included to provide a direct interface to DOS library commands.

PRO-WAM applications can turn your TRS-80 into a sophisticated business machine rivaling the best of them. That's because PRO-WAM comes with many useful and powerful time savers and desk organizers. Here's a brief summary of some of the tools supplied with PRO-WAM:

- o An **ADDRESS** file data base which can print both Rolodex cards and mailing labels. Throw away that black book or just mechanize your Rolodex file.
- o A **BRINGUP** tickler file which can schedule up to 12 items per day by time. Remember those appointments. Don't miss those payments.
- o A **CALendar** gives you a month at a glance. The calendar covers over 4000 years. Find out what day of the week your anniversary is this year.
- o A 3x5 **CARD** filer for a free-form scratch pad of 40 columns by 12 rows of data space. It's great for jotting notes or keeping a small data base.
- o A telephone list and auto**DIALER** for Hayes compatible modems as well as the DC-2212 and 4P. Don't let your fingers do the walking, use your modem!
- o A four function floating point **CALCulator** gives you basic math functions at your fingertips. Use your computer for quick calculations.
- o For the programmers, there's a seven function **RPN CALC** that works in binary, octal, decimal, and hexadecimal.
- o The **PSORT** utility is provided to put your PRO-WAM data files in alphabetic order. Packs deleted records, too!
- o PRO-WAM shines with its **EXPORT** and **IMPORT** functions which allow you to move data across windows between applications.
- o There's even an online **HELP** facility!

Besides the applications highlighted above, PRO-WAM also includes these applications: a **CHARacter SET** display which shows you the Model 4's character set; **DOSAVE** which stores the entire screen image to a disk file for later use; a mini-**TERMinal** to get you on-line for those small communication jobs; and even an application which turns your printer into a **TYPEwriter**.

PRO-WAM includes eleven applications, a complete **HELP** facility, a program for sorting its data files, a program to directly load applications, an **SVC** macro library, a **C** function library, two example applications in assembler source code, a device driver for **BASIC** programs, programming examples in **BASIC** and **C**, and a 99-page user manual. PRO-WAM works with all programs which use standard DOS keyboard requests and honor the DOS high memory pointer. PRO-WAM requires one 32K RAM bank, about 2K of high memory, and a small piece of low RAM. If you have a model 4, then you must have PRO-WAM!

Ordering Information: For use under TRSDOS 6.2 [128K] => **PRO-WAM #M-51-025**

Note: Coming soon - **PRO-WAM Version 2.0** with more features and applications!

Mister ED - Editor Application

Mister ED is loaded with seven NEW applications for use with our Window and Applications' Manager, PRO-WAM. You get a file editor (FED), a disk editor (DED), a memory editor (MED), a video screen editor (VED), and a text editor (TED). All are full screen editors which make your editing jobs easy. Best of all, these are all PRO-WAM applications so they are usable whenever you can activate PRO-WAM while you are using other programs and applications.

DED, FED, and MED all use a similar display screen and strikingly similar commands to enable you to edit any byte of a disk sector, file record, or memory page. This lets you get comfortable with one program yet know how to use all three. The MED display looks like this:

```

0123456789ABCDEF      00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
=====
| b..... | <00> | 62 00 1F 1C 1F 1E 1F 1E 1F 1F 1E 1F 1E 1F BA F1 |
| .....Level-AR | <10> | 02 00 00 00 00 00 00 00 4C 65 76 65 6C 2D 41 52 |
| dir /app:0.OS 1. | <20> | 64 69 72 20 2F 61 70 70 3A 30 0D 4F 53 20 31 2E |
| 3 => EnhComp #M- | <30> | 33 20 3D 3E 7E 45 6E 68 43 6F 6D 70 20 23 4D 2D |
| 20-072....AS ass | <40> | 32 30 2D 30 37 32 0D 0A 0A 0A 41 53 20 61 73 73 |
| emblers... | <50> | 65 6D 62 6C 65 72 73 2E 0D 0A 20 20 20 20 7F |
| Ordering Inform. | <60> | 4F 72 64 65 72 69 6E 67 20 49 6E 66 6F 72 6D 03 |
| ...../L....1. | <70> | C3 F4 0F 0C B0 05 98 1F 2F 4C C9 F4 0F 0C 31 05 |
| ../L....2.../L. | <80> | 98 1F 2F 4C C3 F4 0F 0C 32 05 98 1F 2F 4C C9 F4 |
| ..3.../L....4... | <90> | 0F 0C 33 05 98 1F 2F 4C C9 F4 0F 0C 34 05 98 1F |
| /L....5.../L.=.D | <A0> | 2F 4C C9 F4 0F 0C 35 05 98 1F 2F 4C C3 3D 0E 44 |
| A.'E..=.DB.'E. | <B0> | 41 14 27 11 45 14 C3 3D 0E 44 42 14 27 11 45 14 |
| .....SunMonTue | <C0> | FF 00 00 00 00 00 00 53 75 6E 4D 6F 6E 54 75 65 |
| WedThuFriSatJanF | <D0> | 57 65 64 54 68 75 46 72 69 53 61 74 4A 61 6E 46 |
| ebMarAprMayJunJu | <E0> | 65 62 4D 61 72 41 70 72 4D 61 79 4A 75 6E 4A 75 |
| 1AugSepOctNovDec | <F0> | 6C 41 75 67 53 65 70 4F 63 74 4E 6F 76 44 65 63 |
=====
Banks: 31 Current Bank: 0 Page: X'04' Byte: X'74' => X'B0' = 176

```

Memory Editor 1.1 - Copyright 1986 MISOSYS, Inc.

Command [; - @ A B C D F G H I N P Q S X Z]:

Aside from 4-direction cursor movement, you can find hex or ASCII strings, make changes in hex or ASCII, advance/decrement sector/record/page, insert a NULL and push bytes down, quash a byte and pull bytes up, and zap a value to the end of the displayed data. Changes do NOT take effect until you SAVE!

VED lets you edit the current video screen with CARD-type editing. You get block mark and move so you can relocate text on the screen. It combines the facilities of DOSAVE and DOLOAD to save/restore a screen image. With these facilities and the windowing function of EXPORT, you can easily use VED as the "clipboard" facility found on more expensive systems. Use it to screen-edit a BASIC program!

TED is a full-screen ASCII text editor that sports a 30K text buffer - while you are using other programs! You get full cursor control, search and replace, insert and overstrike, delete mode, scroll up, scroll down, as well as page up and page down. TED has block mark, block copy, block move, and block delete. Mister ED even comes with an OOPS facility in case you exit TED without saving your text - you can get it back! TED is friendly, fast, and great for those quick editing jobs you need to do while online. TED's great for banging out notes when you are right in the middle of a program which you can't interrupt.

CARDFORM is an adjunct to the CARD filer and notepad application. It can populate a CARD file with a "form" to then be used as a template for your data entry. Finally, REGENBU/BAS is a tool to shrink your BRINGUP/DAT file whenever you have incurred a purge of many activities causing your file to be filled with holes.

Ordering Information: For use with TRSDOS 6 => Mister ED #M-51-028

Little Brother

Little Brother (LB) is a data management system where ease of use is its primary goal. With LB, you don't need to program ANYTHING or remember complicated command sequences to manage your data. Even for the most complex data management needs, Little Brother will produce results very quickly, often with just a few keystrokes. This is because EVERY function in LB is menu driven and comes with complete on-line HELP information which is always at your fingertips.

With LB, you can concentrate on what you do best - managing your data, and leave the programming to us. We've put all of our design and programming expertise into LB so that your data management needs can be satisfied quickly and 'painlessly'. LB will handle almost any data base needs that you may have. Virtually the only limitation is your available disk space.

You easily define the layout of your data records. LB will handle up to 65534 records, and each record can contain up to 1024 characters. LB supports up to 64 different data fields for each record, where each field may be from 1 to 254 characters long. There are seven types of data fields available:

- Alpha - Only the letters A-Z (a-z) and <space> may be entered.
- Numeric - Only digits (0-9), a period and a minus sign may be entered.
- Right Justified - Numeric with the value displayed and printed with 'leading spaces'.
- Literal - Any ASCII character may be entered.
- Dollar - 'dollar' values, with up to eight digits allowed to the left of the decimal point.
- Float - 'floating point' values with 8 digits to the left and right of the decimal point.
- Calculated - Allows calculations to be performed using any 'number' field (i.e. R, J, N, D, or F). The calculation is user defined, and may include addition, subtraction, multiplication and division. Calculations are precise up to sixteen significant digits.

Defining a LB data base is simple. Just enter a descriptive name for each field, the type of field that it is (e.g. "D" for Dollar, "L" for Literal, etc) and the length of the field. LB even has provisions for defining a "Protected Field", so that the data for that field will not be displayed unless the proper "Password" is entered. Full editing capabilities are available when defining a data base.

After defining your data layout, all you need to do is establish a "screen", and you are ready to begin entering data! Up to 10 different screens may be used to display your data. Having entered information, you may view or edit any record at any time. It is always a quick and easy operation to "Find" information with LB. You can even create an "Index" to your data by sorting the information in any non-calculated field, so that your data records can be accessed in either "ascending" or "descending" order. Using an Index will allow you to find any piece of information within a matter of seconds, even if there are tens of thousands of data records in your data base!

Once you have built a data base, you may wish to print the information. Simply define a print format, and LB will print the records according to your specified format. Up to 10 different print formats can be created. LB can handle almost any kind of print format; you can print listings complete with headers/footers, date, time, page numbering, totals and sub-totals if desired, mailing labels format, and even form letters. As with any data-related operation when using LB, you select what records get printed (according to your specified criteria). Records can be printed in "sorted" order as well, which is great for organizing your report (especially useful for "zip code" zoning).

For automating your processing needs, LB can be run in an 'automatic' mode, without any operator intervention. Frequently used LB procedures (such as selecting, sorting and printing records) can be saved for future use. Entire 'Job streams' may be produced, so that LB operations may be intermixed with literally any DOS function that can be 'Batch Processed'.

LB is available for either the TRS-80 Model 4/4P under TRSDOS 6.2 (or later) or the IBM-PC/PC Compatibles under PC/MS-DOS 2.0 and operates virtually the same on either machine! As a matter of fact, data files created on one machine can be directly used on the other machine (NOTE: Separate copies of Little Brother are required and the movement of data files from one machine to another is the sole responsibility of the user). Little Brother is a "simple to use" but powerful data manager.

Hardware specifications: For the Model 4 are a minimum of two floppy disk drives and 128K of RAM (Hard disk owners need only have 64K of RAM and one floppy disk drive). For the IBM-PC are two floppy disk drives (or one hard disk and one floppy) and 128K of RAM.

Ordering Information: For the Model 4/4P => Little Brother-M4 #L-50-510
: For the IBM-PC => Little Brother-MS #L-86-510

LB Maintenance Utility

This package provides two extremely useful utility programs that can be used in conjunction with LB data files. LBMU will allow you to generate a new data base file set from existing LB data. This ability can save you countless hours in restructuring an existing data base, and provides you an excellent means to archive "old" records from your data base.

You will be allowed to create your new data base using all records in the existing file, or from a chosen few records in the file (by using a previously created LB index file). In creating the new data base file, LBMU will allocate only as many records as it needs to create the new file set. This is useful for de-allocating the space consumed by a data base file if too many records were allocated for it.

The same menu prompts that you are accustomed to in LB's Define File Format mode are used throughout when defining your new data base. Many of these prompts are answered in the exact manner as the DFF mode, so there is no need to "learn" a new program when using LBMU.

In laying out the fields to be contained in the new data base, you may use any of the fields and their associated data which are present in your existing data base. You may incorporate additional fields into the new data base. Furthermore, LBMU will allow you to lengthen or shorten any existing field, to either compress or expand your data fields as you see fit. LBMU will even perform some field type conversions for you. For example, you can convert from Numeric or Right Justified fields into Dollar/Float fields.

LBMU also allows limited data file reconstruction such as: rectifying mismatches between data and definition files; stripping out bad records from a data file while preserving as many of the good records as possible; and resurrecting an existing LB data file should its corresponding definition file become lost or unreadable.

The FIXDEL utility is included to rechain all deleted records in a LB data file should the deleted chain record chain become "broken". If you are encountering failures in re-using your deleted records, then FIXDEL is the utility program for you.

Ordering Information: For the Model 4/4P => LBMU-M4 #L-50-515
: For the IBM-PC => LBMU-MS #L-86-515

Utility Disk

Utility Disk #1 contains a series of fourteen utilities for use in conjunction with the LDOS 5.x operating system. These utilities are useful to both the novice and experienced LDOS user, and are a real steal at the regular low MISOSYS price. Utility Disk #1 contains:

COMP/CMD is a file and/or byte-for-byte comparison utility. The differences between the disk/files may be sent to either the display or to the printer. **DCT/CMD** is a utility which allows you to view or modify the Drive Code Table for any given logical drive in the system. This is very handy for developing special disk drivers or when using non-standard drives. **DIRCHECK/CMD** checks the directory on a diskette and corrects most recoverable directory errors. **FIXGAT/CMD** builds a new Granual Allocation Table from user-supplied information about a diskette. This works in conjunction with **DIRCHECK**. **HIGH/CMD** displays a map of the current system high memory allocation. Modules (such as LDOS filters and drivers) are identified by the standard LDOS header if present. **MAKE/CMD** is similar to the **CREATE** library command, but the file can be filled with any given byte, the file can be closed (EOF set) and the **CREATE** flag toggled on or off if desired. **MAP/CMD** displays or prints the allocation (granules or cylinders and sectors) of a file on a diskette. **RAMTEST/CMD** is a RAM test which is self-relocating and tests memory from X'4000' to X'FFFF'. **RDTEST/CMD** performs a non-destructive read of an entire diskette to ensure readability. **READII/CMD** displays the directory of or moves files from a Model 2 TRSDOS 2.0a diskette. This requires eight-inch, double-density capability. **READ40/CMD** allows read-only access to a 40 track diskette in an eighty track drive (96 TPI only). **TYPEIN/CMD** combines the functions of JCL and KSM. Allows most programs that cannot be controlled via JCL to be totally automated. This includes programs such as LSCRIPT (SCRIPSIT patched for operation under LDOS) and HD Profile 3+. **UNKILL/CMD** recovers files accidentally KILLED or PURGED. **WRTEST/CMD** performs a forced write test for all sectors on a given diskette. Any existing data is destroyed.

Ordering Information: For LDOS 5.x => UTILITY-I #L-32-070.

LS-Utility Disk

The LS-Utility Disk includes many of the most popular filters and utilities from our LDOS 5.x Filter Packages #1 and #2, and our Utility Disk #1. The programs included with the LS-Utility Disk are:

PRCODES/FLT provides for easy control of boldface and underlining, and also provides slashed zeros (on printers that will backspace). The characters required to generate a 'backspace' are user definable. **TRAP/FLT** discards any user-defined character. **MAXLATE/FLT** is a complete translation filter system for input or output devices. Any character may be translated to a different character or a multiple character sequence by defining a 'translation table'. Included are tables for EBCDIC and DVORAK keyboard translation. Custom translation tables are easily built for any application. This is a very useful filter, and by itself is easily worth the cost of this package. **KSMPLUS/FLT** works like the KeyStrokeMultiply (KSM) feature provided with TRSDOS 6, and also allows key re-definition 'on the fly' from the keyboard. Also includes 'command repeat', retrieve system date or time, define the shifted and unshifted function keys and send a form feed to the line printer. **CALC/FLT** is a keyboard filter which will perform conversions from hexadecimal to decimal or binary and vice versa. It will also perform Hex addition or subtraction. **RDTEST/CMD** performs a non-destructive read of an entire diskette to ensure readability. **READ40/CMD** allows read-only access to a 40 track diskette in an eighty track drive (96 TPI only). **TYPEIN/CMD** combines the functions of JCL and KSM. Allows most programs that cannot be controlled via a JCL to be totally automated.

Ordering Information: For TRSDOS 6.x => LS-UTILITY #L-32-150

CON80Z - 8080 to Z80

This tool facilitates the conversion of assembler source files written in 8080 Intel mnemonics to Z-80 Zilog mnemonics. CON80Z is a source translator to help you convert your 8080 files to Z-80 files - easily. It performs the necessary translations of code on a line by line basis. The translation is one-to-one. Each logical input line is replaced by one output line. CON80Z will convert CR-LF sequences to a single CR.

Some 8080 assemblers support a logical line ending character, such as the exclamation mark (!), to create multiple source statements on one physical line. By using the CR="c" parameter in the command line, the character "c" will be interpreted as a logical line end when found in the operand field of the source statement and not within single quotes.

The "(HL)" 8-bit memory reference is denoted in 8080 code as the single character, "M". The appropriate translation from "M" to "(HL)" will be made by CON80Z wherever necessary. The 8080 16-bit registers available are denoted as B, D, and H with the OP code changed to "extended" to interpret the reference as 16-bit register use (e.g. LD changed to LDX). CON80Z makes the appropriate translations on extended instructions and will translate B, D, H, and PSW to BC, DE, HL, and AF.

During the translation process, CON80Z will convert all comments in upper case characters to lower case characters except for the character immediately following the semicolon (;) comment indicator. CON80Z will also translate multiple blanks used as field separators to one tab (X'09').

CON80Z will perform translations on selected pseudo-ops where there is a similarity of usage on common TRS-80 assemblers. The following pseudo-op translations will be performed: <DB/DS/DW/SET> to <DEFB/DEFS/DEFW/DEFL>.

Ordering Information: For use with TRSDOS 6 => PRO-CON80Z #M-31-033
: For use with LDOS 5.x => CON80Z #M-30-033

LED - Text Editor

LED is a full screen oriented text editor that you can use to edit almost any type of ASCII file, including ASCII program source code for BASIC programs, the BASIC Answer source code, as well as JCL and KSM files. The LED command menu may be displayed on the lower portion of the screen while editing text. This display includes all LED command keys, the name of the file currently being edited, the current cursor column, the hex value of the character under the cursor and the available memory left in the text buffer.

Cursor positioning is accomplished with the four arrow keys. The <CLEAR> <ARROW> key combinations will move the cursor to the top, bottom, left or right of the text. Tabs are supported, as well as the following modes: overtyping, insert, insert line, and delete. 'Blocks' and 'Block mode' commands allow the speedy manipulation of large text areas. 'Global Search' and 'Search/Replace' are also provided.

A Hex mode allows characters to be input as two hexadecimal digits over the entire X'00' to X'FF' range. This makes possible the direct editing of graphics characters. The TABS parameter may be specified when entering LED which will cause any X'09' (tab) character encountered in the file to be expanded to a string of spaces. The XLATE=X'ffft' parameter may be used to perform a character translation when loading or saving a file.

LS-LED for TRSDOS 6.x includes the commands: 'write a marked block to disk', and 'insert file from disk at cursor'. These functions make the maintenance of subroutine libraries or 'boilerplate' text very simple.

Ordering Information: For LDOS 5.x => LED #L-30-020
: For TRSDOS 6.x => LS-LED #L-30-021

Host/Term - Communications Program

This communications' package includes two terminal programs and a host system that can be used independently or in conjunction with the terminal portion of the package. ADDS25/CMD is set up to look like a Radio Shack DT-1 emulating an ADDS-25 terminal. Full cursor positioning, reverse video, and blinking fields are supported. The second is called TERM6, and allows one Model 4/4P to be used as a remote terminal to another Model 4/4P running the Host portion of LS-Host/Term. Both terminal emulators found in LS-Host/Term include all the features of COMM, to make them much more powerful than 'just a terminal'. Full upload and download capabilities are available for file transfer, as well as spooled printer support (both simultaneous print/display and transparent print with ADDS25). ADDS25 is ideal for communications with a Model 16/6000 running under XENIX. We also include a version of XMODEM for error-free file transfer between systems using the MODEM7 protocol. 'C' source for such a utility to run under Unix/Xenix is available in the public access database of CompuServe.

The Host portion of this package allows your Model 4/4P to be operated remotely from another Model 4/4P. All video effects (such as cursor positioning, PRINT@ and reverse video) will be properly transferred to the remote system. You may also use an ADDS-25 type terminal instead of a Model 4/4P and still retain most remote video effects and cursor positioning. Other terminal types can be used, but all video functions may not be operational on the remote. When bringing up Host, you can specify a password is required for log-in, and other HOST parameters (linefeeds after carriage returns, nulls to be sent, etc.)

Finally, we include a useful data conversion utility that will convert to/from binary and HEX-ASCII binary representation, to/from INTEL Hex format and checksum files. LS-Host/Term gives you the tools you need to get your communications chores done quickly and effectively.

Ordering Information: For TRSDOS 6.x => LS-Host/Term #L-35-281

LCOPY - TRSDOS to CP/M

LCOPY runs under CP/M and allows you to transfer files from various TRS-80 diskettes formatted by LDOS 5.x or TRSDOS 6.x onto your CP/M disks. You can obtain TRS-80 disk directories, transfer files, and invoke CP/M commands easily and rapidly from the program's menus; these functions are also accessible directly from the CP/M prompt. LCOPY also includes CVTEXT which adds the LINEFEED to form the CP/M end-of-line sequence, CR-LF. This is useful for post-processing TRS-80 format text files after a file transfer.

The DISPLAY directory command reads the target TRS-80 diskette and displays a directory of the files on that diskette, sorted by FILE NAME and EXTENSION. The TRANSFER files command allows you to move files from your TRS-80 diskette to a CP/M disk. This is the most powerful command in LCOPY. The DOS disk is identified by drivespec or partspec while the destination drive is identified with the letter of the drive onto which you want the TRS-80 files copied. Parameters are available to select particular TRS-80 file attributes, transfer all OLD or NEW files, ERASE any previously existing destination CP/M file, select a particular CP/M user area as the target of the file transfer, or have LCOPY QUERY you for the transfer of each TRS-80 file. The CPM command displays a second menu which provides access to CP/M system commands such as: <D>isplay a CP/M disk directory, <E>rase a CP/M file, <R>ename a CP/M file, <C>opy a CP/M file, <T>ype a CP/M file, <L>og a new default CP/M drive, change to another <U>ser area, or e<X>it to the main menu.

Ordering Information: For MAX-80 CP/M & Mod4 CP/M+ => LCOPY #M-32-063

DSM - Disk Sort Merge

DSM is a high speed, disk virtual sorting utility that eliminates the burden of sorting from your applications software development project. DSM will create and maintain index files for you. Since the sort is disk virtual, your only limitation is the amount of available disk space, not available memory!

DSM can sort almost any type of field in a random access file. Each field may be up to 253 bytes. The field types handled include compressed integer, single and double precision fields, and ASCII data (strings). Single and double precision numbers may be in the format used by Interpretive BASIC, or may be in the floating point format implemented by Manx AZTEC 'C'.

Disk files can have 65,535 logical records with an LRL of from 1 to 1024 bytes. You may specify up to 24 select fields (12 for DSM51) to determine which records will be included in the sort. Relations (e.g. 'equal to', 'less than or equal to', etc.) may be applied to your selection criteria; logical operators (AND/OR) may be used. For instance: "sort by zip all people with a last name of either Smith or Jones". Additional fields may also participate in the sort. Example: sort in zip order and by name within the same zip.

Sorting may be either ascending or descending. DSM can skip records that match a "deleted record" value. A list of "deleted" records may be written to a separate file. You can also save a "template" of the sort/select specifications to disk to automate the sort. This allows you to set up a sort operation that is transparent to even the non-sophisticated user.

DSM is intended for use with user-developed applications software. Please note that DSM creates an index file, as opposed to actually re-ordering the records in the data file (though once an index file is created, re-ordering the records is a simple matter if desired).

Ordering information: For TRSDOS 6.2.x (or later) => **DSM4 #L-35-205**
: For Model I/III LDOS 5.x => **DSM51 #L-35-204**

diskDISK

Are you running out of directory space on your hard disk? Are you tired of allocating in granules that are much bigger than your average file? If so, you need diskDISK. The diskDISK utility allows the creation of 'logical disk partitions' as files on a physical disk drive.

This is an excellent utility for large-volume (eighty track or double sided) floppy drive owners, and is almost indispensable for hard disk users. Once a diskDISK file is 'installed' into a logical drive slot, the diskDISK can be used just like any other physical drive, and there are no restrictions as with many other concepts of 'partitioning'.

Almost all operating system functions are available just as though this file were an actual physical drive. Also, a diskDISK file can be used as a system drive, and/or may be SYSGENed in place if desired. With diskDISK, you can easily group related files for ease of maintenance. DiskDISK files can also be set up as 'images' of physical drives to allow mirror image backups.

Finally, diskDISK drives allocate in granule sizes smaller than your hard disk system. Five inch diskDISK images allocate just like floppy drives. Also, there are special diskDISK types that allocate in one or two sector granules for maximum storage efficiency.

The advantages of using diskDISK simply can't be overstated. This should be considered a must for hard disk owners. Please note that you are still limited to a total of eight logical drives active simultaneously, but diskDISK provides for easy swapping of any currently active diskDISK file.

Ordering Information: For LDOS 5.x => **diskDISK #L-35-211**
: For TRSDOS 6.x => **LS-diskDISK #L-35-212**

QuizMaster

QuizMaster is an educational/informational question and answer program that can also be used as a game. Its basic operation is to display a question and four possible answers. It scores the operator's response based upon the speed in addition to the accuracy of the response. Response speed may be adjusted to one of three possible skill levels.

QuizMaster randomizes both the order of the questions and the order of the answers to prevent memorization. The question sequence is never the same. Extended play provides a 'sudden death mode' feature for the skillful user.

QuizMaster comes with five subject files of up to 100 questions each. These are: U.S. Information, Geography, Math, General trivia, and Fantasy and Science Fiction trivia. These files can be increased or edited, up to 255 question and answer sets per file. In addition, you can create your own specialty files of up to 255 question/answer sets. The only limit to the number of question files you can have is the number of diskettes you possess. The Subject Modules were derived from grades 6-9 textbooks.

QuizMaster is educational, interesting and addictive. The QuizMaster system includes all the facilities necessary to establish and maintain your own series of multiple choice questions on any subject whatsoever. The system is comprised of several machine language modules for fast and accurate access and response times.

For ease of entry, an 'input editor' allows full transparent cursor motion along with insert and delete modes, type over and fast cursor positioning. This feature is found in both the "Add" and "Edit" modes.

Five support programs are provided to create, extend, edit, print, and maintain the question - answer files. Also included is a program to reconstruct a file that has been damaged by disk I/O errors or faulty disk media. A packing module allows files that have been heavily edited to be compressed to use disk space more efficiently. All features are easy to use and easy to operate. Everybody loves trivia, and now you can control your trivia.

Ordering Information: For LDOS 5.x => QuizMaster #L-51-500

THE SOURCE

This may be the first and last times that the complete source code for such a sophisticated operating system has been made available to the public for a reasonable price. THE SOURCE contains a vast wealth of information for the assembly language programmer. If you have ever wondered how an operating system does its 'magic', these are the books for you! THE SOURCE is not only informative, but also an excellent learning tool.

This set of books contains the complete, commented assembler source code for TRSDOS 6.2, excluding hard disk support, the Microsoft BASIC and the HELP/CMD utility. Each book is softbound, 8-1/2 by 11. The complete set totals over eleven hundred pages of cleanly commented, elegant source code. Volume 1, The System, covers SYS0 to SYS5 and SYS9 to SYS13. Volume 2, The Libraries, covers all of the library commands making up SYS6, SYS7 and SYS8. Volume 3, The Utilities, covers all utilities, drivers, and filters.

Ordering Information: For anyone => THE SOURCE, 3 Volume Set #L-60-020

UNREL - Convert REL to ASM

Here's one of those rare utilities designed for the programmer. UNREL will decode a relocatable object module which has been assembled by either Microsoft's M80 or MISOSYS' MRAS assemblers. The output is an assembler source file compatible with MRAS and one which should also be equally usable with M80 (probably change the output file extension to MAC!).

Now you can take a binary REL file which looks like this:

```
8091D15391D494204505345548194149154D155205504F494E5481131253
```

```
...
```

into a form more usable by your MRAS assembler; an ASCII file such as this:

```
;GENGRP/ASM:1
NAME      ('GENGRP')
EXTRN     BAKCLR,CLIPP,DCOMPR,DOWNC
EXTRN     FCERR,FETCHC,FORCLR,GRPACX
...
PUBLIC    BOXLIN,CLS,DDT,DOBOXF
...
CSEG
SETXVR:
PUSH      DE
PUSH      HL
LD         HL,(GRPACX)
...
```

This miraculous transformation is made possible by the UNREL utility. Of course, there are limitations.

First, UNREL makes the assumptions that anything in a code segment is code, and anything in a data segment is data. Those of you already having experience with object code disassemblers know that decoders can sometimes get "fooled" by data being interpreted as code. With object module REL files, this problem still exists. However, if good programming practices, such as segregation of code and data, have been followed by the original programmer of the REL module, your decoding job is simpler.

Second, UNREL supports only the following special link items: 0 - entry symbol, 1 - select common block, 2 - program name, 3 - request library search, 5 - define common size, 6 - chain external, 7 - define entry point, 9 - extern+offset, 10 - define data size, 11 - set location counter, 13 - define program size, 14 - end program, 15 - end file. Special link items (4 and 8) as well as chain address, SLI-12, are not supported.

You can easily pull apart relocatable libraries using MLIB, the REL librarian included with our MRAS assembler and translate the associated modules into ASM source. A SPLITLIB utility is included with UNREL in case you have a library file too big to handle by MLIB. SPLITLIB can also be used to split a library into separate modules. The example above, incidentally, is from the graphics library, GRPLIB/REL, which is distributed with Tandy's hi resolution graphics board. This should make a few folks happy.

The UNREL package also includes a utility, DECODREL, for displaying the bit stream of a REL file. This can be used to more fully understand the actual bit stream. If you have MRAS, take a look at page 7-6 of the manual and you will see a sample output of DECODREL.

UNREL should be the perfect professional assembler's tool for your bag of tricks. The TRS-80 version of UNREL includes programs for both the Model 4 (DOS 6.x) and Model I/III LDOS 5.x!

Ordering Information: For TRS-80 III/4 LDOS/TRSDOS 6 => UNREL-T80 #M-30-054
: For CP/M => UNREL-CPM #M-32-054

The BASIC Answer

Remember when you went back to modify that BASIC program you finished some months ago? Sure was rough to remember what was going on in some of that code, wasn't it? Well, MISOSYS has the answer to those 'BASIC programming blues'. The answer is 'The BASIC Answer'.

The BASIC Answer (also known as 'TBA') is a BASIC text pre-processing utility that allows BASIC programmers (Hey, That's you) to generate program code in a structured manner. 'Source code' is created with your favorite word processor or text editor that can output a plain ASCII file. This lets you exploit all of the powerful editing, block movement, and cursor control features available in your word processor or text editor. If you don't already have a favorite editor, see our LED and LS-LED products elsewhere in this catalog. You can even use the BASIC interpreter to create your 'source code'. TBA is then used to process this source code into ordinary interpretive BASIC code.

So how does this help your programming? First, TBA utilizes labels in lieu of line numbers. Branching in a program is accomplished by means of a descriptive label as opposed to an arbitrary line number. This means that blocks of code, subroutines, and procedures can be called and referenced by names which reflect their function, such as, "@SORT.NAMES", "@FIND.MINIMUM", "@CALC.MEDIAN", etc. Labels may be up to fourteen significant alphanumeric characters in length. This allows totally relocatable BASIC subroutines without renumbering problems.

In addition, TBA supports variable names of up to fourteen significant alphanumeric characters. This means that very descriptive names can be applied to variables in order to greatly augment program readability and comprehension. This is especially helpful in the case of program code which has not been examined for a long time.

For example, a typical TBA statement may look like this:

```
IF ACCNT.OVERDUE# > 0 THEN GOSUB @PRINT.WARNING
```

rather than

```
IF A9# > 0 THEN GOSUB 51090
```

Clearly the first line contains a veritable wealth of information as compared to the second. When TBA processes your source, the label references are resolved with actual line numbers, and all variable names are transformed to unique one or two character names. In addition, remark statements are not included in the output program. The output of TBA is a directly executable interpretive BASIC program that uses a minimum of available memory. The source code remains in its eminently readable form.

TBA also introduces the concept of "Conditional Translation". This feature allows co-existence of "machine-dependent" or other variable code within the same program source. TBA can then be instructed to ignore the irrelevant sections when processing the source to executable code.

TBA allows the use of pseudo Global and Local variables. Local variables are those variables which retain their value only in a unique subroutine. This means that variable tracking and conflict problems are minimized.

The BASIC Answer combines the self-documenting benefit of COBOL with the casual structure of BASIC in concert with the editing power of a word processor. This is truly a timely combination.

Ordering Information: Model 1 or 3 under LDOS 5.1 => TBA #L-21-010
: Model 4/4P/4D under TRSDOS 6.x => LS-TBA #L-21-011

THE MISOSYS QUARTERLY

Take an LDOS QUARTERLY, an LSI Journal, and a NOTES FROM MISOSYS. Blend them together into a professional magazine format filled with the latest information on MISOSYS products, programs and utilities, patches, significant messages from our Compuserve SIG, and articles on programming and what do you have? Why THE MISOSYS QUARTERLY. Each issue of THE MISOSYS QUARTERLY has a significant product special available only to subscribers. That means, you will invariably recover the cost of a subscription by taking advantage of these specials. Not only that, THE MISOSYS QUARTERLY will keep your TRS-80 up to date with information, news, and announcements. Here's some testimonials from current subscribers:

Sam Wells writes, "Congratulations on the impressive first edition of THE MISOSYS QUARTERLY. It certainly promises to be quite an informative and enjoyable publication."

Harry G. Maurer writes, "My impressions of the QUARTERLY is that it is well worth the money and I am pleased with its content, format and general professional appearance. As far as I know your advice and tidbits of information is not available from any other source."

Ron Ungashick said, "Roy, I received THE MISOSYS QUARTERLY yesterday. I am very impressed! I really liked the LDOS Quarterly, but I believe this is even better. Anyone who used to receive the LDOS Quarterly should subscribe to THE MISOSYS QUARTERLY. It is well worth the price. Thanks for a good publication. It has been too long since one has been available."

Bill Evans reported, "I just got THE MISOSYS QUARTERLY and personally feel that Volume 1 Issue 1 is more valuable than a year's subscription to 80 MICRO. I strongly urge those who did not subscribe to do so now."

Bob Haynes said, "I just received 'THE MISOSYS QUARTERLY'. Very, very nice! Really like the idea of condensing the tips and techniques found in the SIG, and it looks like 'Roy's Technical Corner' has been resurrected in the Programmer's Corner section. I also like the double column format and smaller type (than the LDOS Quarterly). Really packs in the information. Another nice touch is the cello envelope; my postman won't dare scrunch up THIS magazine. It's well organized information in a nicely bound package. Congratulations, thanks, and be encouraged! If Tandy users won't stand behind THIS kind of SUPPORT, they don't deserve any!"

Here's the details on subscribing. Subscription cost varies by rate zone as follows: A = \$25; B = \$30; C = \$32; D = \$35; E = \$40. The following describes the rate zone (if you are unsure what zone you are in, subscribe via MasterCard or VISA and we will charge the correct amount): A = {United States via bulk mail}; B = {Canada, Mexico, or United States via First Class mail}; C = {Columbia, Venezuela, Central America, Caribbean Islands, Bahamas, Bermuda & St. Pierre & Miquelon, from American Samoa to Western Samoa, & from Guam to the Philippines via AO Air}; D = {South America (except rate zone C), Europe (except Estonia, Latvia, Lithuania & USSR), & North Africa (Morroco, Algeria, Tunisia, Libya, & Egypt) via AO Air}; E = Estonia, Latvia, Lithuania & USSR, Asia, Australia & New Zealand, Pacific Ocean Islands, Africa (other than North Africa), the Indian Ocean Islands & the Middle East via AO Air}.

Mark III/IV Collections

Here is a limited edition two-disk collection of software with documentation which bundles together twenty products previously sold individually by MISOSYS, Inc., and Logical Systems Inc. Each collection is attractively packaged in a three-ring binder and brings you a software value in excess of five hundred dollars for less than one fifth the cost.

You get the following programs and files in the Mark III collection:

ALLOC/CMD, BINCONV/CMD, BINPLAY/CMD, BINPRINT/CMD, BSORT51/CMD, BSORT53/JCL, CALC/ASM, CALC/FLT, CMDFILE/CMD, COMM1/ASM, COMM1/FLT, CONVCPM/CMD, CRLF/FLT, CTLG/FLT, CVTEXT/CMD, DD/CMD, DED/CMD, DESCRIBE/CMD, DICTATE/ASM, DICTATE/FLT, DMP2005A/FIX, DOAUTO/CMD, DOCONFIG/CMD, DOEDIT/FLT, DOSAVE/FLT, DOSPEED/ASM, DOSPEED/FLT, DVORAK/XLT, EBCDIC/XLT, EPBINCAT/CMD, EPBINCAT/FIX, FEDII/CMD, FM/CMD, FTS5/CMD, FTS5/HLP, HELPGEN/CMD, IFC/CMD, IFCLIST/CMD, IOMON/CMD, KISTORE/FLT, KSMPLUS/ASM, KSMPLUS/FLT, LCOUNT/ASM, LCOUNT/FLT, LINEFEED/ASM, LINEFEED/FLT, LISTBAS/ASM, LISTBAS/FLT, LOWER/ASM, LOWER/FLT, MARGIN/ASM, MARGIN/FLT, MAXLATE/ASM, MAXLATE/FLT, MEMDIR/CMD, MEMDISK/DCT, MONITOR/ASM, MONITOR/FLT, NAME/CMD, NODAM/CMD, PAGEPAWS/ASM, PAGEPAWS/FLT, PARMDIR/CMD, PDS/CMD, PRTOGGLE/CMD, PTRACE/CMD, RD40/CMD, REMOVE/CMD, RSBINCAT/CMD, SLASH0/ASM, SLASH0/FLT, SLOSTEP/ASM, SLOSTEP/DCT, STRACE/CMD, STRIP7/ASM, STRIP7/FLT, STRIPCNT/ASM, STRIPCNT/FLT, TITLE/ASM, TITLE/FLT, TRAP/ASM, TRAP/FLT, UNKILL/CMD, UPPER/ASM, UPPER/FLT, VIDSAY/CMD, WC/CMD, XLATE/ASM, XLATE/FLT, XONXOFF/FLT, ZCAT/CMD, ZGRAPH/CMD, ZSHELL/CMD

You get the following programs and files in the Mark IV collection:

ALLOC/CMD, ALTDISK/CMD, ALTLD/CMD, ALTRES/CMD, BE/LMF, BINCONV/CMD, BINPLAY/CMD, BINPRINT/CMD, BSORT/CMD, CALC/CMD, CRLF/FLT, CTLG/FLT, CVT324/CMD, CVTEXT/CMD, DD/CMD, DED/CMD, DESCRIBE/CMD, DMP2006A/FIX, DOCONFIG/CMD, DOEDIT/FLT, DOSAVE/FLT, EPBINCAT/CMD, FKEY/CMD, FM/CMD, FTS/CMD, FTS/HLP, HANDY/CMD, HELPGEN/CMD, IFC/CMD, IFCLIST/CMD, INSTALLB/CMD, IOMON/CMD, KISTORE/FLT, LSCOMP/CMD, LSFEDII/CMD, LSQFB/CMD, MAPPER/CMD, MEMDIR/CMD, MINIDOS/FLT, MOD324/CMD, NAME/CMD, OD/CMD, PARMDIR/CMD, PDS/CMD, PROCESS/CMD, PROCURE/CMD, PRTOGGLE/CMD, PTRACE/CMD, RD40/CMD, RSBINCAT/CMD, STRACE/CMD, SWAP/CMD, UNREMOVE/CMD, WC/CMD, XONXOFF/FLT, ZCAT/CMD, ZGRAPH/CMD, ZSHELL/CMD

The complete Volume II six-issue set of the LDOS QUARTERLIES will also be included in each collection. No descriptive information on individual items of either collection is currently available; such information may be located in earlier catalogs of MISOSYS, Inc., and Logical Systems Inc. Approximately 100 units of each collection are available; when they are gone, they're gone! This is a final sale; no returns accepted.

Each collection is sold as-is; with no warranties implied. All Mark III programs will work with LDOS 5.1.4; no utilization of LDOS 5.3 enhancements are guaranteed nor will any of the programs be modified in any way by MISOSYS, Inc. All MARK IV programs will work with TRSDOS 6.2; no utilization of LS-DOS 6.3 enhancements are guaranteed nor will any of the programs be modified in any way by MISOSYS, Inc.

Ordering Information: For LDOS 5.1 => The Mark III collection #M-99-003
: For TRSDOS 6.2 => The Mark IV collection #M-99-004

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