Menu systems typically provide controlled menu-driven access to programs, access to the DOS environment for executing operations that cannot be run from the menu system, and password capability to control access (if necessary). For users unfamiliar with DOS' rules for disk and directory navigation and loading software, menu systems facilitate usage of a microcomputer and its software. Menu systems are created using menu generating software that set up menus providing simplified access to software programs, batch files, and DOS commands. Many marketed software will generate menu systems and they vary widely in their look and features. Menu Works stands out due to its extensive array of features for a unbelievably low price of $25. Others may have some stronger features but Menu Works' price compared to its range of features sets it apart.

Menu Works' (MW) menus are pleasantly designed and display quickly so that users will not be irritated by delay. Menu selections appear on the right side of the screen with the left side showing function key assignments (figure 1); the current directory is noted onscreen. Menu selections are indicated by moving arrow keys (point and shoot), typing the first letter (speed key), or moving a mouse. Assigned function keys can popup MW's help screens or a customized prompt-specific help, list a directory, locate a file, change the drive, change directory, access DOS temporarily, set time/date, check disk space, and copy files. For both the experienced menu builder and the inexperienced menu user, MW is easy to learn and use; referral to documentation is minimal. MW offers extensive popup onscreen help, tutorials, and an appealing manual. Differing from most other menu generating software, MW's manual has sections for both the experienced menu builder and the inexperienced menu user. Usually the inexperienced menu user's information needs are not addressed in documentation associated with menu generating software; those users need help the most! Clearly written with good figures, MW's manual includes a table of contents and a subject index.

For the menu builder (the person creating menus), MW offers a lot of menu building power for its low cost. The banner headline at the top of the screen can be rewritten to incorporate an institutional name up to 30 characters (30 characters will not be enough for some
User menus can be arranged hierarchically with higher level menus leading to lower level menus. With each menu having up to 81 selections, an almost unlimited number of menus can be built. Passwords for accessing menus, accessing the DOS environment, or exiting the user menus can be specified. Menu screen colors can be selected as well as a delay time before the menu screens go blank (screen saver). Screen saving can also be activated by a pressing a hot key combination. MW's function key assignments cannot be suppressed, reordered, or changed. For some situations, it would be desirable to select from a set of function key assignments thereby customizing the function keys for local needs. Some of the existing function key assignments (e.g., date/time) may be unnecessary or create confusion in some environments. Once a menu has been set up, the order of existing selections cannot be changed without deleting some selections and creating them anew for insertion into the desired order.

Installation is extremely fast and easy. MW adds two lines to the microcomputer's pivotal AUTOEXEC.BAT file and, as a courtesy, prefaxes them with a REMark statement to identify their origin. If desired, MW will structure an initial menu system automatically during installation! MW scans the hard disk directories looking for over 1600 software COM and EXE files and then sets up hierarchical menus grouped by software category. Thus an MW menu system does not have to be built from scratch. Automatic menu building offers substantial benefit for busy menu builders and sets MW apart from most other menu generating software. MW sets up menus for popular database, wordprocessing, communications, spreadsheet, games, and graphic/painting software as well as for general utilities (e.g., backup software), programming languages (e.g., BASICA), and DOS utilities (e.g., Format, Sys, Compare, Debug, Find). MW cannot be expected to recognize everything on the market; for example, MW did not automatically install DialogLink, Norton Utilities, and AskSam into menus.

After installation, the menu builder uses MW's setup menu (figure 2) as the starting point to create, modify, or remove user menus. Starting with the initial menu system built by MW, the menu builder deletes undesired prebuilt menu selections, refines the remaining prebuilt menus and menu selections, and creates new menus and menu selections for software unrecognized by MW. A starting directory can be specified for a menu selection. Menu selections can load software, run DOS commands, run unique MW commands, run batch files, or link to lower or higher level menus. MW has an extended command set with some commands comparable to DOS commands used in batch file programming. MW's extended set of commands sets it apart from several other menu generating software. MW commands can prompt for drive letters, single character (e.g., Y/N) or text, passwords, filenames or paths (which MW will then validate), or pressing any key. Default prompt answers can be prespecified. MW can substitute or pass prompted responses into
subsequent command line(s). MW commands can sound a beep, clear screens, wait during a timed delay, wait until a specific 24-hour time, return to the user menu, jump ahead (goto), compare strings for equality (if), echo, pause, and convert upper/lower case characters.

One screen of customized help information (limit of 5 lines with 52 characters each) can be created for each menu selection. However customized help is only active when a prompt is being solicited; some other menu generating software provide more extensive customized help capability. MW does not offer a logging function to monitor usage as do some other menu generating software. If a logging function is needed, commands can be created to accomplish this by incorporating prompts and echoing redirected text and date/time to a log file. Norton Utilities' TIMEMARK utility can be used if elapsed time is needed for logging. Expansive batch file writers may feel restrained with MW's limit of 15 command lines for each menu selection. Some other menu generating software support more command lines per menu selection.

MW intelligently recognizes potential conflict between its own memory needs and those of other microcomputer software. Menu software is usually resident in the microcomputer's RAM memory so that menus execute quickly. Unfortunately this may tie up RAM needed by other software. Conflicts may result between the RAM needs of a menu software and a memory-hungry software (like LOTUS 123); the potential for conflict is heightened when some RAM is already committed to print spoolers, cache memory software, etc. When a MW menu selection loads up a memory-hungry software, MW unloads (swaps) itself from RAM into a hard disk file thereby freeing up almost all of the RAM that MW was using (except for 2K). After the memory-hungry software is exited, MW reloads itself into RAM so that MW's menus will execute quickly.

MW further assists in RAM memory management with powerful control commands designed for monitoring and controlling terminate-and-stay-resident (TSR) software. TSR software are always active and ready to popup for usage when a "hotkey" (keystroke combination) is pressed. However TSRs can be notorious for outright incompatibility with certain software or for tying up RAM needed by another software. Menu builders frequently face frustrating situations trying to cram several software within the 640K limit of RAM memory. A MW menu selection can incorporate control commands which load and unload TSRs from RAM. MW control commands can load TSR(s) only when those TSR(s) are needed for concurrent usage with a specific software. When exiting that software back to the user menu, MW will unload the TSR(s) from RAM. Similarly, MW control commands can unload TSR(s) before loading a memory-hungry software. After that software is exited, MW will reload the TSR(s). MW can also monitor for the unexpected or hidden loading of a TSR associated with a software being used and then ensure that the mystery
TSR is unloaded before returning to a MW menu. MW's TSR command capabilities are usually found in separate utility software sold specifically for that purpose. Menu builders frequently have to contend with TSR software and RAM memory conflicts and MW conveniently provides the tools needed. MW is a stronger product in this respect than most other menu generating software.

Prospective Menu Works (MW) users need an IBM PC, XT, AT, PCJr, 386, PS/2 or compatibles running PC/MS DOS Version 2.0 or later with at least 256K of RAM memory. MW does not run in expanded memory which would be a nice touch for those that have it. While MW does not require a hard disk, a hard disk is recommended for effective usage of MW. Color graphics, Microsoft compatible mice, and LAN networks are supported but are not required. MW is not copy protected. Version 2.1 was reviewed and it is a significant revision over version 2.0 and earlier. With Version 2.1, the price dramatically decreased so that MW would stand out in the crowded menu market. Menu Works retails for $25 from PC Dynamics, 31332 Via Colinas, Suite 102, Westlake Village, CA 91362 at telephone (800)888-1741 or (818)889-1741. Unlimited telephone support (including an 800 number) is available for registered users. Site licenses and volume discounts are available. Considering its extremely low price, Menu Works' strong points far outweigh its weak points and comes highly recommended.