

HARDWARE GALLERY

What's faster than a speeding disk drive, able to load tall files in a single bound?

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WARP SPEED.....A

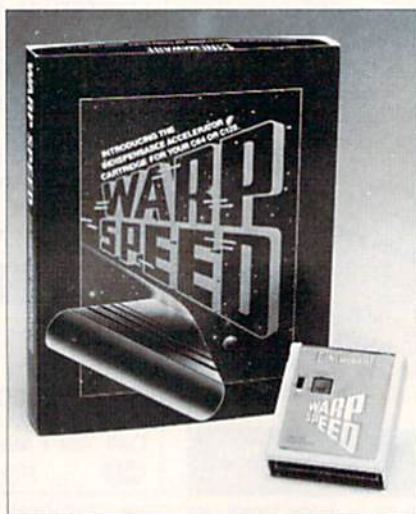
*Warp Speed's the Name,
Acceleration's the Game!*

A rendezvous with the Cinemaware staff earlier this year gave me the opportunity to witness a sneak preview of their Warp Speed cartridge. Using a 1541 and a Warp Speed-equipped C-64, they demonstrated the unit's ability to load and display graphic screens at a rate of speed that almost matched that of a 1571/C-128 combination. In fact, the load times were so rapid that I had difficulty believing that their 1541 wasn't actually a 1571.

As I watched this cartridge perform a variety of amazing feats, not the least of which were these high-speed loading exercises, an important question came to mind. Would these high-speed disk operations be compatible with the dizzying variety of hardware and copy-protected software configurations found in the real world? Read on and decide for yourself.

C-64 AND C-128 COMPATIBLE

When a production model of Warp Speed arrived for review six weeks later, I began a series of tests to try to reveal its limitations. My initial impression was that if improving the 1541's disk access times was all the cartridge could



Fast and compatible: two key words that describe Warp Speed.

accomplish, I would probably recommend it as a wise investment to most C-64 users. However, it offers considerably more than fast loading times; Warp Speed is a rarity because it gives users a cartridge that's compatible with both the C-64 and the C-128.

Warp Speed differs in appearance from most other cartridges. A toggle switch on top lets C-128 users choose between 64 and 128 modes. Located next to that switch is a reset button that

can re-activate the cartridge if it becomes disabled. While most operations won't disable Warp Speed, you can deactivate it by using the SYS 64738 command in 64 mode or SYS 16384 in 128 mode.

Plugging the cartridge into the expansion port of either computer gives you a full set of Commodore's DOS wedge commands. Besides those one-key commands, some other keys perform newly assigned tasks. There's the pound (#) sign, for toggling between 8 and 9 as the default disk drive; the ampersand (&) command, for viewing word processing (sequential) files on the screen; and the pi (π) sign, which takes you to the ML monitor.

Warp Speed adds a transparent, 64- and 128-mode, menu-driven disk system that's accessed by pressing the British pound sign (£). Nine options within the menu offer rudimentary disk functions, such as displaying the directory, as well as more sophisticated features, like a single- and dual-drive copier utility, a disk-sector editor and a full-featured machine language monitor.

More good news abounds outside of the menu system. Activating the cartridge causes every file loaded from Basic to have a Warp Load performed on it. This process, whether done in 64 or 128 mode, causes the words "Warp Loading" to appear, followed by starting and ending addresses of the file being loaded.

COPY-PROTECTION COMPATIBILITY

Software compatibility is always foremost in my mind when evaluating fast-load cartridges, so I tried using the Warp Loading feature on every copy-protected software package I could get my hands on. While all the programs I tested seemed to work flawlessly, I'm certain some software incompatibility must exist. Even Cinemaware wisely admits that probably *only* 99 percent of the heavily copy-protected software will work with their cartridge. I feel that, regardless of how many copy-protected titles you own, the compatibility is good enough to rule out any problems.

Table 1. Comparison of load times.

	Load times without Warp Speed	Load times with Warp Speed
C-64 or C-128 with a 1541:		
36-Block File:	25 seconds	3.5 seconds
70-Block File:	47 seconds	7.0 seconds
Stealth Mission (SubLogic)	3 minutes, 50 seconds	3 minutes, 50 seconds
Acrojet (MicroProse)	1 minute, 5 seconds	1 minute, 3 seconds

Some compatibility problems not related to copy protection do, however, become apparent when you use a 1541 to fast-load files saved with C-128/1571 disk utilities, such as Commodore's 1571 DOS Shell. At the bottom of the first page of Warp Speed's owner's manual, you'll find a paragraph that contains some ambiguous statements about how 1571 files and Warp Speed files are both saved in a skew 6 format, which results in a 1000 percent increase in loading speed. This statement is true, provided the 1571 files (either 64 or 128 mode) were saved with starting addresses that Warp Speed can use.

On the other hand, nothing is loaded into memory if you use Warp Speed's Auto Load menu in C-64 mode to load and run C-128/1571 files that were saved from addresses incompatible with the C-64. I uncovered two quick fixes for this dilemma. The first remedy is to load these files with Warp Speed disabled, then re-save the files with Warp Speed activated. While this is a bit time-consuming, bear in mind that the process

only needs to be performed once. The second fix is not to use Auto Load menu with C-128-saved files. Finally, as with any Commodore fast-load cartridge, a little experimenting on the user's part will quickly determine any software's Warp Speed compatibility.

USER AND COMPUTER COMPATIBILITY

Once you begin using Warp Speed on your C-64, you'll get spoiled by the ease it brings to your life. However, C-128 owners already have at their disposal such a wide range of options coupled with fast disk access that they're unlikely to wax as enthusiastic about Warp Speed as 64 owners (unless, of course, they use a 1541 or spend a lot of time in 64 mode). After using this device for a while, most C-64 owners won't want to go back to their old cartridge or to Native mode.

Life with Warp Speed is not without its problems, though. After reading a few lively discussions about the unit on QuantumLink, I was surprised to find

not everyone shared my enthusiasm. I asked Bob Jacobs, president of Cinemaware, if he was aware of any problems with the cartridge. He admitted that a top-of-memory bug exists in the cartridge, but the problem rarely, if ever, surfaces. I can attest to his claim, because I've used a veritable mountain of commercial and public domain software with Warp Speed without any problems. In fact, I've run, without difficulty, a machine language program that was 166 disk blocks (over 40K!) in length. Cinemaware still plans to offer an upgraded Warp Speed in late 1988.

All told, the Warp Speed cartridge is extraordinary. Comparing it to other fast-load cartridges is an exercise in futility; for the money, I haven't found anything that compares with it. Best of all, it goes a long way in converting the C-64 into the truly useful computer it was always meant to be. (*Cinemaware Corp., 4165 Thousand Oaks Blvd., Westlake Village, CA 91362. \$49.95.*)

—TIM WALSH
RUN STAFF ■

From p. 41.

236	DATA 9A20CF8E20308F9D06C0 A 9A18D909AA9018D919A 20CF8E2 0308F9D0FC0A9 :REM*243	244	DATA 008D969A203690205190 F 01F901A20058DAE929A BD9C9AD 00CA9C88D989A :REM*41	253	DATA 20708F20C685C910B0F9 1 8690F48202B90AE929A BD0AC0A A3868ED9B9A8D :REM*199
237	DATA 9F8D909A20CF8E20308F 9 D08C0A9AA8D909A20CF 8E20308 F9D0AC0A9008D :REM*120	245	DATA BDF198AA20378F4CEB90 2 0F78C202B90AE929ABD 0CC0201 98FA9028D959A :REM*36	254	DATA 959A20369020288F2070 8 F202B90AE929A18BD9C 9A7D9E9 A0A0A0A8D9B9A :REM*88
238	DATA 8F9AAC929AB9EF988D91 9 AA9258D909AA9188D8E 9A20CF8 E20308F9D0CC0 :REM*38	246	DATA 203690AD939A48202B90 A E929ABD06C0AAA90A8D 959A203 69018686D939A :REM*142	255	DATA AE929ABD02C00A0A0A0A 1 86D9B9A8D939A20288F 18A9646 D939A8D939AAD :REM*91
239	DATA 60A003A90099939A8810 F 860E000F01618AD939A 6D959A8 D939AAD949A6D :REM*134	247	DATA C9659002A964AE929A9D A 09AAE929A18BD0AC07D 08C00A8 D989AF007BDF1 :REM*230	256	DATA 949A69008D949A18BD56 9 A6D939A9D569AE8BD56 9A6D949 A9D569A20EF92 :REM*108
240	DATA 969A8D949ACAD0E66020 2 88F38BD4E9AED939A8D 979AE8B D4E9AED949A0D :REM*148	248	DATA 98AA20378F202B90AE92 9 ABD02C0AAA9148D959A 2036901 8AD939A69648D :REM*94	257	DATA 208B92AE929AAD9B9AF0 0 7A8DE04C088D0FAAE92 9ABD9E9 AC903B0032053 :REM*169
241	DATA 979A60202B90AE929ABD 0 0C0AAA9F48D959AA901 8D969A2 03690205190F0 :REM*189	249	DATA 939AAD949A69008D949A 2 0288F18BD4E9A6D939A 9D4E9AE 8BD4E9A6D949A :REM*143	258	DATA 93A9008DA29AA9068D2E 9 A20169560A20018987D 0199A8A DA79A919BADA8 :REM*35
242	DATA 15900620DD8C4C9A90AE 9 29ABD9C9AC0490F020 E98C202 B90A9908D959A :REM*77	250	DATA 9D4E9AAE929A38A90AFD 9 E9A8D9B9A202B90AE92 9ABD04C 0AAA9028D959A :REM*214	259	DATA 9A91A7E8E004D0EB6020 C 989A9BF8DA79AA9088D A89AA99 D8DAB9AA9008D :REM*179
243	DATA A9018D969AAE929ABD04 C 0AA203690AE929ABD0C C020198 FA9648D959AA9 :REM*72	251	DATA 20369020288F20708F20 2 B90AE929ABD0CC02019 8FA9058 D959A20369020 :REM*82	260	DATA 9B9AAD929AD00AA204A0 D 8200E864CBA92A9E0A2 05A0D92 00E86A9DB8DAC :REM*90
		252	DATA 288F20708F202B90AE92 9 ABD08C0AA38A90AED9B 9A8D959	261	DATA 9AA20CA000B19BCDAB9A D ▶