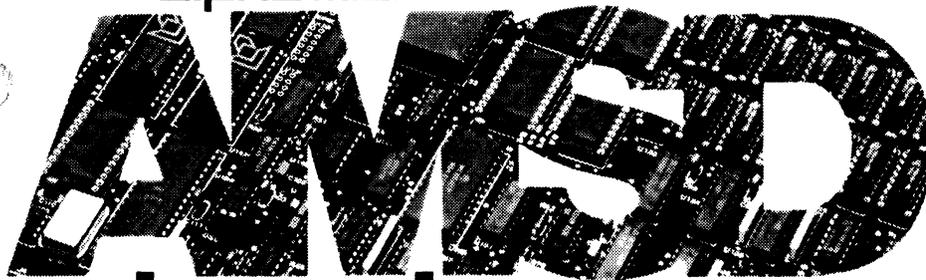


alpha micro



**journal**

November 1986

ALPHA MICRO SERVICE DIVISION

Volume 8, No. 10

In this issue...

*Special  
Articles*

Transitions

Message From the Editor

*Software*

1.1.19 The Inside Scoop: AM-350, AM-515 & AM-640 Software Upgrades

3.2.11 New Software Patches Available from AMSD

3.2.12 AM-415 Hardware/Software Compatibility Note  
(415DVR.DVR - SPN-222L-01)

6.3.2 AlphaWRITE 1.2 Potential Footnote Problem

6.4.1 New Features of the VIDEOTRAX® 3.0 Release

6.5.1 MULTI: It Simply Makes Your Computer Easier to Use

*General  
Information*

3.1.2 New Part Numbering System For User Manuals

Back Issue Volume Table of Contents Pages

◆◆◆ Holiday Schedule ◆◆◆

Alpha Micro wishes all our dealers and customers a  
Happy Thanksgiving.

We will be closed Thursday and Friday, November 27th  
and 28th.

Editor ..... Robin Soto  
 Assistant Editor ..... Sandra Tomlin  
 Artwork Director ..... Bill Briscoe

Contributors to this issue: Randy Bird, Jose Celaya, Robert Currier, David Evans, Jeff Kreider, Robin Soto, Sandra Tomlin.

Copyright ©1986 by Alpha Microsystems.

AlphaACCOUNTING, AlphaBASIC, AlphaCALC, AlphaFORTRAN, AlphaLISP, Alpha Micro, AlphaPASCAL, AlphaRJE, AlphaVUE, AlphaWRITE, AM-100, AMOS, and AMTEC are trademarks of Alpha Microsystems. VIDEO-TRAX is a registered trademark of Alpha Microsystems. AlphaCARE and AlphaSERV are service marks of Alpha Microsystems.

The *AMSD Journal* is published monthly by Alpha Micro Technical Publications for the Alpha Micro Service Division. Please address all correspondence to AMSD Journal, Alpha Microsystems, 3501 Sunflower, Santa Ana, California, 92704.

Alpha Micro has checked the information contained in this newsletter and believes it to be accurate at the time of publication. However, readers should independently determine that any information used works correctly on their system and is appropriate for their application.

**Subscription Information:** Subscription rates are \$40 per year. Back issue sets are also available for \$150 per set. Each Alpha Micro dealer receives one permanent subscription to the *AMSD Journal* free. For additional subscriptions, send your name, company name, address, customer number (if applicable) with payment of \$40 for each subscription to:

AMSD Journal  
 Subscription Department  
 Alpha Microsystems  
 P.O. Box 25059  
 Santa Ana, CA 92799

#### AMSD Telephone Numbers

Customer Service .....	(714) 641-7602
Customer Education .....	(714) 641-6330
Technical Support .....	(714) 641-7608
Main Switchboard .....	(714) 957-8500
Spare Parts/Logistics .....	(714) 641-6339
AMTEC (1200 Baud Bell 212A).....	(714) 545-2290
AMTEC (300 Baud Bell 103).....	(714) 545-8546

#### Article Filing Instructions

We hope you find the *AMSD Journal* to be a valuable reference tool, and that you will want to refer to its articles frequently in the future. To make it easy and quick to find information, current articles are designed to be filed with articles from past issues. The entire set of *Journal* back issues forms three volumes: "General Information," "Software Information," and "Hardware Information." (The set of back issues is available for purchase. See "Subscription Information," above.)

The title of each feature article in this issue includes a reference number. Use the reference number to file the article in the back issue volume indicated at the top of each page of the article. For example, if the top of the first page of the article "6.5.5 One Hundred New Uses for MULTI," contains the words "Software Information," you know that article is to be filed in Section 6 of the "Software Information" back issue volume after article number 6.5.4.

The last pages of the *Journal* are new Tables of Contents for the back issue volumes, updated with entries for articles included in this month's issue.

## Transitions

by Roger Rowe  
Vice President  
Alpha Micro Service Division

For a number of years, AMSD has been responsible for the production of this journal. As most of you know, we have tried to provide you, not only with technical solutions to problems encountered during the development of our new products, but also interesting articles about new technical developments at Alpha Micro.

I think it's time the Journal broaden its perspective. To that end, we have enlisted

the services of Alpha Micro's Technical Publications department to help us present a new image to you.

It is my sincere hope that the technical contributions we receive from the field (more specifically from you) not only continue, but increase.

AMSD continues to be committed to providing complete technical information and support to our dealer base.

Hope you like the new look! **AMSD**

## Message From the Editor

by Robin Soto  
Manager, Technical Publications  
Advanced Products Division

This month marks the start of a new venture for the Alpha Micro Technical Publications department; that is, producing the AMSD Journal.

We are very excited by this opportunity because we feel getting to know you better and researching the technical issues that concern you will help us enormously in producing documentation in line with your needs and interests.

Let me quickly introduce you to the Alpha Micro Technical Publications department: We are part of the Advanced Products Division, which develops Alpha Micro's hardware and software products. Our particular job is to produce software manuals (for example, the AMOS/L System Commands



## Message From the Editor (Continued)

Reference Manual and the AlphaWRITE Reference Library) and system owner's manuals (for example, the AM-2000 Owner's Manual).

We look forward to working closely with you to continue to focus this journal toward your interests. Please write us with suggestions for articles or with technical questions. We are vitally interested in your opinions. In fact, the next issue will contain a short questionnaire that asks for your suggestions for future issues.

We've already made a few plans for the future ourselves, which include: Articles by several Alpha Micro Advanced Products Division managers, a question and answer column, and in-depth articles on some of the new Alpha Micro products.

But, while we have some changes in mind, one thing we can assure you will not change: We will continue the fine tradition set by the Alpha Micro Service Division Journal staff of past years to respond to your needs with timely and accurate information.

In extending our thanks to the AMSD staff for their hard work over the years, we would like to say a special "Thank You" to Nancy Steen, the most recent editor of the AMSD Journal, for her cheerful help in getting us started producing the Journal.

**AMSD**

## 1.1.19

### *The Inside Scoop:*

# AM-350, AM-515 & AM-640 Software Upgrades

by Randy Bird  
Product Manager  
Advanced Products Division

Since the most recent AMOS releases (AMOS/L 1.3B, AMOS/32 1.0), a variety of software update packages have been released to fix bugs and support new hardware. Since, in the same time frame, there have also been a variety of hardware updates with similar names and new hardware/software dependencies, an explanation of all the updates is in order. We hope this article will help eliminate some of the confusion.

### AM-640 Update

The easiest update to explain is the AM-640 Software Update Package; this, of course, provides support for the VME-bus AM-640 magnetic tape subsystem. In addition, this software provides the following features:

1. Increased backup speed and tape reel capacity.
2. Support for installed base of Cipher, CDC/Tandberg, and Keystone tape transports.
3. Support for higher speed, higher density transports, to 100 ips and 6250 bpi.
4. Support for and ability to boot from the AM-640 Controller. (Note: Booting from mag tape requires AM-175 CPU boot PROMs of revision E00 or later or AM-180 CPU boot PROMs of revision B01 or later.)

5. The software is easier to use.

The AM-640 Software Update Package (part number PSB-00751-00), will be shipped with all AM-640 Controllers until the next operating system release. Additionally, it is available from AMSD.

### AM-350 Phase I Upgrade

The support for the AM-350 Intelligent I/O Controller in the released versions of AMOS/L 1.3B and AMOS/32 1.0 has been found to have some important limitations. Accordingly, we have released an AM-350 Phase I Update package (PSB-00721-00) to resolve these limitations. All AM-350s shipping until the Phase II software is available (see below) will have this package included. In addition, AMSD is sending the package to all sites to which AM-350s have already been shipped.

### AM-350 & AM-515 Phase II Upgrades

When the AM-350 and AM-515 were originally released, neither the software nor hardware supported use of the upper segment address register; hence, any system containing one of these boards was limited to a maximum of 8 megabytes of system memory. Through a combination of software and hardware upgrades, this limitation has now been lifted. Additionally, the AM-515 Phase II allows use of multiple Xebec controllers on the AM-515, making operable the full complement of up to eight 5 1/4" drives (using the AM-433 disk subsystem chassis).

## 1.1.19 (Continued)

### AM-350, AM-515 and AM-640 Software Upgrades

The Phase II Updates are a bit confusing because there are some one-way compatibility issues. The general rule is: "The old software works with either old or updated boards; however, the new software requires the hardware update to have been performed."

Here, "old" software means either the support software included in the operating system release or the AM-350 Phase I software package (discussed above). "New" software means the Phase II software. The hardware rework to the appropriate board (AM-350 or AM-515) consists of adding one jumper and replacing some socketed PALs and PROMs. Board revisions are listed at the end of this section.

Because the AM-433 disk subsystem requires the AM-515 Phase II software, the software is bundled with the subsystem. Otherwise, if you have need for greater than 8 megabytes of memory in your system, the software is available from AMSD (PSB-00641-00). The AM-350 Phase II software will also be available from AMSD (PSB-00741-00).

Be aware that the next AMOS release will include these software changes in the AM-350 and AM-515 microcode. Hence, the astute observer will note that in order to run correctly with the next operating system release, the hardware updates to the AM-350 and AM-515 must have been made. AMSD has been working on making sure the entire field is up to date; however, if you have an early AM-350 or AM-515 (shipped before August 1986), you might want to check the board revision now, while it is fresh in your mind, and ensure it is at the revision indicated below or later.

AM-350 Phase II Hardware Update:  
Revision A03

AM-515 Phase II Hardware Update:  
Revision A06

#### Summary

The following list summarizes the current upgrade packages and their use. When the next AMOS release comes out, all of these updates will be folded into it; in the meantime, just a bit more care is required to make sure you have the right software for your system!

**PSB-00751-00 AM-640 Magtape Upgrade**  
Hardware Support for the VME-bus  
AM-640 Magnetic Tape Controller.

**PSB-00721-00 AM-350 Phase I Upgrade**  
AM-350 microcode bug fixes.

**PSB-00641-00 AM-515 Phase II Upgrade**  
AM-515 software supporting more than  
8Mb memory, AM-433 subsystem.

**PSB-00741-00 AM-350 Phase II Upgrade**  
AM-350 software supporting more than  
8Mb of system memory.

### 3.2.11

## New Software Patches Available from AMSD

The following list gives a description of the new software patches now available from AMSD. The products affected by these patches are: MULTI, AMOS/L and AMOS/32.

Patches in the following list include SPNs 216 through 222, released as of 22 October 1986; beginning where the list appearing in the Sept./Oct. Journal article left off (see Journal Vol. 8, #9 - Software Article 3.2.9).

The SPN description in the purpose column ends with the software version(s) this patch is intended for.

SPN #	Module	Purpose
216	MULTI	Corrects following display problems in overview mode: protected fields disappeared, erase to end of line didn't work correctly, and split screen scrolling didn't work correctly. MULTI version 1.0.
217	MLT110.OVR	Corrects a printing problem that occurred when the MULTI job was not initiated from DSK0:. MULTI version 1.0.
218	RUN	Fixes erroneous error message "?Subscript out of range" in programs with a large quantity of variables. AMOS/L version 1.3B and AMOS/32 version 1.0.
219	COMPIL	Corrects a problem compiling a program with a large number of MAP statements. AMOS/L version 1.3B and AMOS/32 version 1.0.
220	LOKSER.LOK	Corrects a problem where a CLOSE after UNLOKF would occasionally close other files in the database. All AMOS/L 1.3 versions and AMOS/32 version 1.0.
221	LOKUTL	Add a feature to wake up a suspended user waiting for a locked record or file. All AMOS/L 1.3 versions and AMOS/32 version 1.0.
222	415DVR.DVR	Corrects timing problem with AM-415 products when used with the 68020 chip. For compatibility purposes, it should be installed on both AMOS/L and AMOS/32. AMOS/L version 1.3B and AMOS/32 version 1.0.

### 3.2.12

## AM-415 Hardware/Software Compatibility Note (415DVR.DVR - SPN-222L-01)

The 415DVR.DVR program has been upgraded to increase the efficiency of data transfer when using an AM-415 controlled Winchester disk on AM-1500 or AM-2000 Series computers, and a software modification is now available to bring your 415DVR.DVR program up to the current level. This modification applies only to AMOS/L 1.3B and AMOS/32 1.0 operating systems.

#### Do You Need the Upgrade?

This software modification will enhance the performance of all AM-415 controlled Winchester disks and we recommend that everyone install it. However, certain AM-415 users **MUST** make this modification to avoid a fatal incompatibility between the released version of the 415DVR.DVR program and the AM-117 Converter board supplied on the latest Alpha Micro computers.

To find out if your computer is one that requires the upgrade, answer these questions:

1. Do I have an AM-1500 or AM-2000 Series computer?
2. Does my computer contain a Winchester disk using an AM-415 Disk Controller?
3. Is the AM-415 Disk Controller connected to an AM-117 Converter board with part number DWB00117-90? (Some AM-1500s may contain this version of the AM-117 board, but all AM-2000s with AM-415s contain this version of the AM-117.)

If you answered YES to all three questions, you **MUST** make this modification.

#### Is the Upgrade Already Installed?

If your VME-bus computer contains an AM-415 Controller, this upgrade may already be installed on your computer. To find out, type the following commands at monitor level:

```
LOG DVR:  
DIR 415DVR.DVR/H
```

If you see the hash number:

```
474-341-510-103
```

the upgrade has not yet been installed. Go ahead and install it.

**WARNING:** Be aware that the standard AMOS/L 1.3B and AMOS/32 1.0 operating system releases **DO NOT contain this modification!**

Therefore, if you ever have to re-install the operating system from the standard release medium, you will wipe out the modified version of the 415DVR.DVR program. If you do this, you will have to then re-install this upgrade before you can generate a new AM-415 disk driver or your system might not reboot.

If you need to re-install the standard AMOS operating system, be sure you first make a bootable backup of your system. Then re-install the AMOS release, following all instructions in the current AMOS Release Notes. Remember that before you can generate new disk drivers as described in the Release Notes, you must first re-install the 415DVR.DVR upgrade.

## 3.2.12 (Continued) AM-415 Hardware/Software Compatibility Note

### Making the Patch

1. Log into any account other than DVR:.
2. Use the AlphaVUE text editor to create a new file named 415D01.M68, and type in these statements:

```
; Patch to DVR:415DVR.DVR
; (Patch Notice SPN 222L-01)
; AMOS/L Version 1.3B,
; AMOS/32 Version 1.0
; Copyright (C) 1977,1986 - Alpha
; Microsystems, Inc.
```

```
        COPY    PATCH
        OHASH   474,341,510,103
        NHASH   465,425,522,305

        .="H188
10$:    MOVB    @A5,D6
        BMI     10$
        PUSHW   #2
11$:    SUBW    #1,@SP
        BNE    11$
        POPW
        TST    D6

        END
```

3. Use the COPY command to transfer a copy of the 415DVR.DVR program into the same account where you created the 415D01.M68 file:

```
COPY = DVR:415DVR.DVR
```

4. Enter the command:

```
PATCH 415DVR.DVR WITH 415D01
```

5. You will see the patch file being assembled and installed. You should see no error messages. If you do, make sure you have created the patch file

correctly and are modifying the correct version of 415DVR.DVR.

The hash totals displayed when the patch is completed should be:

```
Old Hash: 474-341-510-103
New Hash: 465-425-522-305
```

6. Now copy the modified 415DVR.DVR back to the driver account:

```
LOG DVR:
COPY = Devn:415DVR.DVR[p,pn]
```

where Devn:[p,pn] is the device and account number you just performed the modification in.

7. Use the FIX420 program to generate a new disk driver based on the upgraded 415DVR.DVR program, remembering to save the driver to the disk.
8. Use the MONGEN program to generate a new system monitor including the driver generated by FIX420 in the monitor (if the AM-415 disk is your System Disk). Remember to save the monitor to the disk, too.
9. Use the MONTST program to test the new monitor to make sure the system boots properly. After you are sure the new monitor is OK, rename it to AMOSL.MON (for AMOS/L systems) or AMOS32.MON (for AMOS/32 systems).

For further information on using the PATCH, COPY, FIX420, MONGEN, and MONTST commands, see the System Commands Reference Manual for your system.

## 6.3.2

# AlphaWRITE 1.2 Potential Footnote Problem

AlphaWRITE's new footnote feature, introduced in version 1.2(196), lets you choose from two types of printed footnotes. You can choose type E to print all footnotes at the end of your document or type B to print footnotes at the bottom of the page where they occur.

Under some circumstances, attempting to edit a document containing an existing type B footnote could cause AlphaWRITE to be caught in a loop and your job to hang.

### The Problem

When you have type B footnotes and use the **paginate** command on your document, AlphaWRITE first duplicates the footnote text, then merges the duplicate at the bottom of the correct document page. It does this by recording the footnote information as "hidden" text and storing it in memory for this particular page.

As AlphaWRITE works with different parts of your document, it reads from and writes to memory as needed. Depending on exact memory configurations, AlphaWRITE may not take the hidden text into consideration as it works with different parts of your document. If this occurs, AlphaWRITE becomes caught in a loop and the job hangs.

This problem will be corrected in a future AlphaWRITE release. Until then, you can avoid difficulty by following the five steps below when you want to work with a document containing type B footnotes.

### Steps to Avoid the Problem

Unlike type B footnotes, type E footnotes are not written out to memory as "hidden"

text and cause no confusion as AlphaWRITE reads from memory. Therefore, by switching the footnote type to E, you can work with your document safely.

The procedures we recommend to switch the footnote types are:

1. At the document containing the type B footnote, use the **header** command to display the AlphaWRITE Document Header.
2. Change the Footnote Print Type setting from B to E. Then press the **MENU** key to return to your document.
3. Use the **paginate** command so footnote print type B is deactivated.
4. Work with your document as needed.
5. Before printing your document, use the **header** command to restore the Footnote Print Type setting to B. Then, use the **paginate** command to put the setting back into effect.

## 6.4.1

# New Features of the VIDEOTRAX® 3.0 Release

VIDEOTRAX® is a hardware and software package that allows an IBM PC compatible computer to use Alpha Micro video technology to perform file backup using a standard video tape recorder.

The new VIDEOTRAX 3.0 software release is now available, incorporating new features that make VIDEOTRAX more flexible and easier to use.

The most notable of these new capabilities are:

- o VIDEOTRAX Scripts
- o New Scheduling Feature
- o DOS Interaction
- o New Information Displayed
- o Easier Installation Check
- o Support for the TI-PRO Computer

For detailed information on these new features, see the VIDEOTRAX 3.0 Addendum, DSO-00007-00. Meanwhile, here is an overview of VIDEOTRAX's new abilities:

### Scripts

VIDEOTRAX 3.0 gives you a way to "teach" VIDEOTRAX how to perform any VIDEOTRAX procedure, placing the keyboard input that makes up that procedure into a special file called a "script." Teaching VIDEOTRAX is a simple matter of selecting the **Create a Script** option, and doing the procedure you want VIDEOTRAX to learn. From then on, VIDEOTRAX can do the procedure for you. In this way, you can create simple, single-command batch (.BAT) files to execute your backups.

### Scheduling

Previous versions of VIDEOTRAX allowed you to delay the start of a backup if you were using a remote control VIDEOTRAX

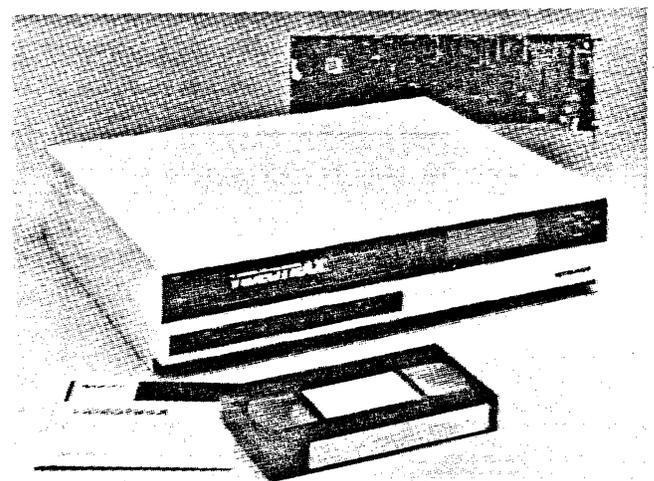
VTR. VIDEOTRAX 3.0 offers a much more sophisticated scheduling capability: you can schedule the start of any VIDEOTRAX procedure (script), any DOS command, or any DOS batch file for a particular day and time.

This feature is available whether or not you are using a remote control VIDEOTRAX VTR. (However, the remote control VIDEOTRAX VTR is required for truly unattended VIDEOTRAX operation.)

### Interacting with DOS

At any point while using VIDEOTRAX, if you are where you can press the F1 key to request help information, VIDEOTRAX also allows you to press the F2 key to temporarily exit to DOS. To return to the VIDEOTRAX menu you were at when you exited, press the ESC key.

A typical use of this feature is to use the DOS DIR command to check the names of files you want to back up.



## 6.4.1 (Continued)

### New Features of the VIDEOTRAX 3.0 Release

#### New Information

If you are using a remote control VIDEOTRAX VTR, you see the Tape Label when you verify a tape. The Audit Trail entry has been expanded to include the Tape Label and Reliability Ratio (if you used the automatic verification feature).

The Tape Label now includes the "Current Date" which you can change to ensure the date of the backup tape is accurate.

#### Easier Installation Check

Verifying that VIDEOTRAX has been installed correctly is now just a matter of entering a single command which invokes a

VIDEOTRAX script that puts VIDEOTRAX through its paces.

#### Support for the TI-PRO Computer

The VIDEOTRAX documentation now includes a software patch that allows VIDEOTRAX to support the TI-PRO Computer.

## 6.5.1

### **MULTI:**

# It Simply Makes Your Computer Easier to Use

It hardly need be said that computers have become an important part of our day to day business life. Regardless of what job you hold, you probably depend on the computer for assistance with much of your daily routine.

But despite this dependence, you probably find the computer "gets in the way" at times. What should be a quick and simple task takes extra long because it involves doing things the computer's way instead of yours. Not exactly why you use a computer, is it?

Your day can hold many duties that the computer can help you do more effectively: planning, telephoning, numeric analysis, correspondence, meetings, developing software, giving presentations.

However, no matter how well you plan, phone calls, unscheduled meetings, requests for information and so on, all combine to force you to perform your activities in fragmented segments throughout the day. In order to get anything done at all, you need to be able to switch rapidly from task to task, and still be able to take care of interruptions as they occur.

In addition, none of your activities is really independent; the outcome of a phone call may cause you to change your thinking on calculations you are doing. Further, the results of those calculations often must be included in your correspondence. Each activity builds on the outcome of another, making the efficiency of each step important.

The computer can also introduce new problems of its own. A worksheet analysis program may free you from the drudgery of performing repetitive calculations with pen-

cil and paper, but if you are forced to simply wait for a large calculation to be performed, with further use of the computer restricted, you temporarily lose the ability to use the computer to increase your effectiveness.

While your Alpha Micro computer provides tools to perform all of the tasks we've described-- such as AlphaCALC worksheet processing, AlphaWRITE word processing, AlphaMAIL electronic mail, and extensive software development tools-- individually they do not make up the ideal overall "environment" in which you would like to work.

To switch from word processing to worksheet analysis, you must exit AlphaWRITE and enter AlphaCALC-- a lot of work if you're only looking for one number to answer a question over the telephone, considering that you must now exit AlphaCALC and re-enter AlphaWRITE to get back to where you started. And then to send a quick "while you were out" message after answering the phone, you must once again leave the program you are using, call up AlphaMAIL, send the message, and start up your original program.

MULTI was created to help solve all of these dilemmas, and more. Known as an "environment manager," MULTI lets you access multiple applications at the same time. Without requiring modifications to existing software, or obsoleting software packages you already purchased, MULTI "wraps itself around" the software you use, providing you with extra capabilities.

## 6.5.1 (Continued)

# MULTI: It Simply Makes Your Computer Easier to Use

### Switch Between Tasks

You can switch quickly from one task to another, without losing your place or stopping what you were doing. A single keystroke is all it takes. Likewise, you can quickly return to where you were with another keystroke. You can have up to 16 different tasks available to you, all just a keystroke away. Now when the phone rings, a single keystroke can switch you to AlphaMAIL where you can take a message. Another keystroke and you're back to what you were doing.

### Move Data

With MULTI, you can easily move data from one application to another, even if neither application was designed to allow data transfer. Make a copy of a screen display and place it into the document you are editing. Call up an on-line database service, get the current stock quotes, and copy them into your AlphaCALC worksheet. Take the results of that worksheet and copy it into a letter. MULTI lets you do all this without changing the application programs.

### Display Multiple Tasks

You can display multiple tasks on your screen at one time, each in its own "window," allowing you to quickly see what is happening in each. If you've started a program compilation, you can monitor its progress in one window while editing a file in another window. MULTI brings many features of expensive bit-mapped workstations to your standard alphanumeric terminal screen.

### Built-in Desk Accessories

Whenever you want, you can call up any of MULTI's "desk accessories." These handy little programs are always available, so you can use them independently of what else you are doing. MULTI's desk accessories include:

A **desk calculator** with built in memory. Perform simple calculations without reaching for your 10-key. MULTI allows you to take the results of your calculations and copy them to the program you are running.

A **note pad**. Rather than accumulating a pile of small paper scraps on your desk, each containing an important bit of information, you can use MULTI's built-in note pad to make notes to yourself: keep a to-do list, jot down meeting notes, or keep an expense report.

A **perpetual calendar**. Use MULTI's monthly calendar accessory to see any month between 1900 and 1999. You can quickly scan for your next available day, or to see when an upcoming project is due.

An **alarm clock**. MULTI lets you set its alarm to keep track of important events and notifies you when they are due. Use the alarm clock to notify you of meetings, lunch time, or quitting time.

A **phone list**. MULTI maintains a Rolodex<sup>(R)</sup>\* style phone list for you with phone number, names, addresses, notes, and keywords. When you select the appropriate keywords, MULTI scans through your phone list identifying the matching entries.

\* Rolodex is a registered trademark of Rolodex Corporation.

## 6.5.1 (Continued)

# MULTI: It Simply Makes Your Computer Easier to Use

**A phone log.** As part of the phone list accessory, MULTI will both dial your phone and log the time and date the call was placed. You can annotate the phone log to make notes of the conversation or to jot down required action items.

**A printer utility.** MULTI provides you with access to the printers on your system. It allows you to check the printer queues, print a file, or print a copy of your terminal screen display, without requiring you to leave the program you are running.

**A system directory accessory.** MULTI gives you access to a list of the files in a particular disk directory without leaving the program you're running. The directory listing not only shows you the filenames, but also gives a brief description of each file. Full directory wildcarding is supported.

### Define and Save Configurations

MULTI allows you to set up the tasks you want available and will save that configuration. The next time you begin using the computer, MULTI will set things up just the way you want. Not only can each user on the system have a unique configuration, but each user can have several different ones to choose from.

\*\*\*\*\*

By providing the ability to quickly switch between tasks, MULTI eliminates much of the bother of all those interruptions. The desk accessories go even further towards eliminating the wasted energy of getting out of one program and into another. And, by combining the ability to move data from one task to another with the unifying appearance of the desk accessories,

MULTI allows software developers to combine existing applications into an integrated package-- like TopView<sup>tm</sup>, Windows<sup>tm</sup>, or DesQ<sup>tm</sup>-- without requiring modification of existing, time-tested applications packages.\*

### Sounds Good, But-- Will It Work on My System?

One of the most challenging parts of implementing MULTI was to make it work with the widest variety of software possible. By careful adherence to the terminal driver standards agreed on between Alpha Micro and its dealer association, and extensive testing with a wide range of software products, MULTI has been made to support just about all existing software. If an application is standards compliant, it will work with MULTI.

MULTI supports just about every terminal feature there is, including: all screen attributes, protected fields, split screen, addressable status lines, local printers, insert/delete line, 132-column mode, function keys, alternate character sets, and color (of the TCRT -2, -3 variety.) And, while it performs best on an AM-62A terminal, MULTI works on just about any terminal.

There is no need to pre-allocate jobs that take up space whether someone is using them or not because MULTI allocates jobs on your system as it needs them. And as long as you have memory available, all tasks and desk accessories are available, regardless of what others on the system are doing.

\* TopView is a trademark of IBM Corp.  
Windows is a trademark of Microsoft.  
DesQ is a trademark of Quarterdeck Corporation.

## 6.5.1 (Continued) MULTI: It Simply Makes Your Computer Easier to Use

MULTI is easy to install on your system. It requires no special drivers or patches to existing software. It works with AMOS/L version 1.3 and later, and AMOS/32 1.0 and later. Just copy MULTI's files, modify the JOBS statement in your system initialization file to add extra job table slots (only 4 bytes per extra job slot,) reboot, and you're off and running with MULTI.

compliant operating system, MULTI can actually change the way you think about and use your computer, making your daily routine easier, faster, and more satisfying.

For more information about MULTI, contact your Alpha Micro dealer.

### New Capabilities, New Satisfaction

MULTI provides you with a whole new range of capabilities on your Alpha Micro computer. By taking full advantage of Alpha Micro's device independent, standards

## 3.1.2

## New Part Numbering System For User Manuals

by Robin Soto  
 Manager, Technical Publications  
 Advanced Products Division

On occasion I am asked by one of our dealers what the different document part numbers mean and why there are so many of them. This seems a good opportunity not only to answer that question, but to let you know about a new type of document part numbering Alpha Micro is introducing this month that we hope will make life easier for you and your customers.

First, here are the existing document part numbers:

### DWM-00XXX-XX

Hardware technical manuals. The middle digits represent the particular board. For example, DWM00415-00 is the part number of the technical manual for the AM-415 Disk Controller.

### DWM-00100-XX

(where XX is 01 or greater) Older software user manuals. For example, DWM-00100-01 is the AlphaBASIC User's Manual for AMOS/T systems.

### PDI-XXXXX-XX

Hardware installation instructions. The middle digits represent the particular hardware discussed in the document. For example, PDI-00117-00 gives installation instructions for the AM-117 Converter board.

### DSS-10000-XX

Older software user manuals and notices. For example, DSS-10000-03 is the AlphaVUE/TXTFMT Training Guide.

### DSS-10XXX-XX

Newer software manuals and notices. If the first five digits are greater than 10000 and if the last two digits are not zero,

this document is an update to an existing manual. Part number DSS-10002-00 is the AMOS/L System Operator's Guide. The document DSS-10002-05 is Change Page Packet #5 for the "AMOS/L System Operator's Guide".

### PSM-XXXXX-XX

Purchased software manuals. These are manuals distributed by Alpha Micro but purchased by us from other vendors. For example, PSM-00034-00 is the AlphaBASE Tutorial.

### PDB-XXXXX-XX

Although PDB- part numbers can represent a lot of different things, they also can represent a manual that consists of more than one part (for example, a binder, reference card, tabbed dividers, and the manual itself).

Finally, part numbers for binders, binder slipcases, keyboard overlays, and other miscellaneous fabricated items usually have a part number beginning with DWF- or HDM-.

### New Part Numbers

Now that we all agree on what the existing part numbers are, the question arises, "Why complicate my life with new ones?"

One of the most disturbing documentation problems we have faced during the last few years is this: How do we make sure that a customer always receives the latest information? For a lot of complicated reasons we won't go into here, with our existing part numbering system, there is no way to automatically ensure all applicable change page packets get shipped with a particular manual or even to make sure the customer knows there are updates available.

## 3.1.2 (Continued)

### New Part Numbering System for User Manuals

Therefore, this month we begin using a new part number plan for new software manuals as a way to make sure updates are shipped with manuals. As time goes by, we will begin to convert our existing manuals over to this new part numbering system as well. You won't see much change for a while, because as yet none of the new manuals have any change page packets that apply to them! But, you will start seeing some of the new part numbers in the November Alpha Micro Dealer Price List.

Here is how it all works:

#### DSO-XXXXX-XX

Software user manuals. When you order a DSO- number, you automatically receive the manual plus any change page packets that apply to it. Of course, you can still order change page packets separately. (See the next section.)

For example: DSO-00007-00 is the order number for the VIDEOTRAX 3.0 Addendum. Although there are no updates to that document yet, if there were they would also be included when you order DSO-00007-00.

#### DSU-XXXXX-XX

Updates to software manuals (change page packets). Included in DSO- orders, but also available separately.

The first five digits are the same as the DSO- number of the manual to which the update applies. For example, if there were an update to DSO-00007-00, the VIDEOTRAX 3.0 Addendum, the first change page packet would be DSU-00007-01.

#### DPO-XXXXX-XX

Software manuals distributed by Alpha Micro purchased by us from an outside vendor. All updates are automatically included with a DPO- order.

#### DPU-XXXXX-XX

Updates for software manuals distributed by Alpha Micro.

#### Summary

A DPO- or DSO- part number includes the basic manual as well as all applicable change page packets and updates. A DSU- or DPU- part number is a change page packet. DSS- numbers will still be used for new notices and reference cards that do not get updates. DWM- and PDI- numbers will still be used for hardware documents.

## AMSD JOURNAL TABLE OF CONTENTS UPDATE PAGES

The next pages of the Journal are updated Table of Contents pages for your back issue volumes. The updated pages are:

- HARDWARE INFO. - Hardware Volume Table of Contents
- VOLUME - Section 2 - Disk Controllers & Disk Drives
- Section 3 - I/O Boards
- Section 4 - Tape Drives and Interface Boards
  
- SOFTWARE INFO. - Software Volume Table of Contents
- VOLUME: - Section 3 - AMOS/L Operating System
- Section 6 - Software Packages
- Section 8 - AMOS/32 Operating System (new section, tab divider will be available at a later time.)
  
- GENERAL INFO. - General Information Volume Table of Contents
- VOLUME: - Section 3 - Manuals

The table of contents pages have undergone a "face-lift" and you'll see these changes:

- A footer line at the bottom of each table of contents page shows you revision information. This line shows month, year, volume and issue number of the Journal this table of contents page arrived with.
- All table of contents pages have a title line showing which volume they belong in: Hardware, Software or General Information.
- Entries for articles published since 1983 now show the month and year of publication.
- Cross reference article entries use this format:

"Article Name" - Cross reference: See Volume Name  
Article #.#.# - [Month Year]

Where Volume Name is Hardware, Software or General Information. Where #.#.# is the article number designating section, category and article number. (For example, article 6.4.3 is filed in section 6, under category 4 and is the 3rd article in category 4.) [Month Year] is the Journal publication date for the article.

# VOLUME I - HARDWARE

## Table Of Contents

### 1.0 Central Processing Units

- 1.1 AM-100
- 1.2 AM-100/T
- 1.3 AM-100/L

### 2.0 Disk Controllers & Disk Drives

- 2.1 AM-200
- 2.2 AM-210
- 2.3 AM-400
- 2.4 AM-410
- 2.5 AM-415
- 2.6 AM-420
- 2.7 AM-500
- 2.8 Disk Drives
- 2.9 AM-515

### 3.0 I/O Boards

- 3.1 AM-120
- 3.2 AM-300
- 3.3 AM-310
- 3.4 AM-320
- 3.5 AM-330
- 3.6 AM-316
- 3.7 AM-350

### 4.0 Tape Drives & Interface Boards

- 4.1 AM-600
- 4.2 AM-610
- 4.3 AM-620
- 4.4 AM-640

### 5.0 Memory & Memory Management

- 5.1 Memory Management
- 5.2 AM-700
- 5.3 AM-710
- 5.4 AM-720
- 5.5 Memory Management - Others

(continued on next page)

**VOLUME I - HARDWARE (continued)**

**6.0 AM-1000 System**

6.1 AM-1000

**7.0 Integrated Systems**

7.1 AM-1010/1011

7.2 AM-1020/1021

**8.0 Chassis & Power Supply**

8.1 AM-900

**9.0 Cables**

9.1 RS-232, 422, 423

**10.0 Printers**

10.1 Printers

10.2 AM-302

10.3 AM-304

**11.0 Terminals**

11.1 AM-60

11.2 AM-62

**12.0 Special Purpose**

12.1 AM-960 & AM-965

12.2 AM-110

12.3 SSD

**13.0 Maintenance, Troubleshooting & Compatibility**

13.1 Maintenance, Troubleshooting & Compatibility

**14.0 Workstation**

14.1 Workstation

**15.0 ELS (Entry Level System)**

15.1 ELS

**SECTION 2 - DISK CONTROLLERS & DISK DRIVES**

**2.1 AM-200**

**2.2 AM-210**

- 2.2.1 PDB-00210-05 Data Separator Circuit Retrofit
- 2.2.2 Realigning Data Separator Circuit
- 2.2.3 Procedure for Daisy-Chaining Floppy Disk Drives
- 2.2.4 AM-210 Boot PROM Enhancement
- 2.2.5 AM-1011 Enhancement Procedure
- 2.2.6 AM-210 Bus Filter Modification
- 2.2.7 AM-210 and AM-410 (handling precautions)
- 2.2.8 AM-210 Delay Line Modification
- 2.2.9 AM-210-10 Minifloppy Disk Subsystem

**2.3 AM-400**

- 2.3.1 Trident Drive Modification

**2.4 AM-410**

- 2.4.1 Phoenix Drive and AM-100, Rev. B03
- 2.4.2 Purging the Phoenix Disk Drive
- 2.4.3 Phoenix Disk Drive Filters
- 2.4.4 AM-410 and AM-100/T Enhancement
- 2.4.5 Static Eliminator
- 2.4.6 Phoenix Data Recovery from the Fixed Media
- 2.4.7 Phoenix Cartridges
- 2.4.8 AM-410 Error Code Reporting
- 2.4.9 Phoenix Cable Routing
- 2.4.10 Interpretation and Use of Phoenix Fault Display Indicators
- 2.4.11 Phoenix Velocity-Gain Adjustment Procedure
- 2.4.12 Phoenix Configurator Guide
- 2.4.13 Multi-Drive Installation Procedures for Floppy, Hawk and Phoenix Drives
- 2.4.14 Phoenix Power Supply "Crowbar" Condition
- 2.4.15 AM-410 PROM Change
- 2.4.16 Phoenix Absolute Filter Inspection
- 2.4.17 Phoenix Drive-Handling Procedures
- 2.4.18 Care of AM-410 Subsystems
- 2.4.19 Phoenix Drive Filter Change Procedure
- 2.4.20 AM-410, AM-420, AM-610 Controller Board Modifications
- 2.4.21 AM-410 Sector Counter Modification
- 2.4.22 Noise Elimination Modification for the AM-410, AM-420, AM-610
- 2.4.23 Striking the Absolute Filter for Phoenix Drives - [Jan. 1984]
- 2.4.24 Absolute Filter Purge for Phoenix Disk Drives - [Jan. 1984]
- 2.4.25 Use of Non-CDC Refurbished Heads - [Apr. 1984]
- 2.4.26 Phoenix No Boot with AMOS/L 1.3. [Jul. 1986]

(continued on next page)

SECTION 2 - DISK CONTROLLERS & DISK DRIVES (continued)

2.5 AM-415

- 2.5.1 Alpha Micro's New High-Performance Systems - [Aug. 1983]
- 2.5.2 Write Project Caution on 400MB Fujitsu Drive - [Aug. 1983]
- 2.5.3 AM-415 Board Corrections - [Oct. 1983]
- 2.5.4 AM-415 EEC Control Circuit Modification - [Jan. 1984]
- 2.5.5 Recovery of Fujitsu Defect Maps - [Dec. 1983]
- 2.5.6 70 Megabyte Fujitsu Headlock - [Aug. 1984]
- 2.5.7 Changing Logical Splits On Fujitsu Drives - [Apr. 1985]
- 2.5.8 AM-415/AM-410 Configurations - [Jul. 1985]
- 2.5.9 Adding Extra Byte to Data Transfer - [July. 1985]
- 2.5.10 BADBLK.SYS Precautions - [Sept. 1985]
- 2.5.11 AM-415/VCR Improved Reliability Modification - [Sept. 1985]
- 2.5.12 Making Revision A AM-415 Functionally Compatible With Revision B - [Sept. 1985]
- 2.5.13 AM-415 Disk Controller Versions - [Jun. 1986]
- 2.5.14 "AM-415 Hardware/Software Compatibility Note (415DVR.DVR - SPN-222L-01)" Cross reference: See Software Volume article number 3.2.12 with same title - [Nov. 1986]

2.6 AM-420

- 2.6.1 AM-420 Power Cycle Modification
- 2.6.2 Alpha Micro's Winchester-Based Subsystems (general discussion)
- 2.6.3 Winchester 60MB Motor Control Circuit Board Enhancement
- 2.6.4 DEVTBL Configurations for Winchester-Based Systems
- 2.6.5 AM-422 Subsystem Main PCB Modification
- 2.6.6 Boot-up Procedure for a Winchester Drive
- 2.6.7 Winchester Error-Code Reporting
- 2.6.8 AM-420 Controller Board Reset Line Modification
- 2.6.9 Important Notice on Certification for Winchester Disk Users
- 2.6.10 Error-Checking and Correcting Code for Winchester Disk Subsystems
- 2.6.11 AM-420 Ground Wire Modification
- 2.6.12 PRIAM 60MB Disk Drive Rework
- 2.6.13 AM-420 Sector Counter Modification
- 2.6.14 Automatic Lock Key Feature Priam 32MB and 60MB 8 Inch Drives - [Oct. 1983]
- 2.6.15 8" Priam Drive Reinstallation Guide - [Apr. 1984]
- 2.6.16 AM-420 Boot Prom Reference Guide - [May 1984]
- 2.6.17 AM-420/Priam Drive Read Error Modification - [Oct. 1985]

2.7 AM-500

- 2.7.1 Hawk Disk Drive Resistor Modules
- 2.7.2 Disk Drive Data Recording and Recovery Techniques
- 2.7.3 Adding Peripherals to Alpha Micro Systems
- 2.7.4 Checking Head Alignment
- 2.7.5 Magnetic Recording Techniques Used for Disk Drives

(continued on next page)

**SECTION 2 - DISK CONTROLLERS & DISK DRIVES (continued)**

**2.7 AM-500 (continued)**

- 2.7.6 Servo Track Operations
- 2.7.7 Bad Block on Hawk Disk Drive Fixed Surfaces
- 2.7.8 Hawk Disk Drive First Seek Operation
- 2.7.9 Static Eliminator Wiper Arm
- 2.7.10 Return to Zero Seek and Operation Seek
- 2.7.11 Normal and Emergency Retract Operations for the Hawk Disk Drive
- 2.7.12 Hawk Resistor Packs
- 2.7.13 AM-500 Error Codes
- 2.7.14 AM-500 Error Codes
- 2.7.15 Hawk Drive Power Supply Modification
- 2.7.16 Head Alignment Procedure for the Hawk Disk Drive Without a Small Disk Exerciser
- 2.7.17 Hawk Static Eliminator Assembly
- 2.7.18 Index-to-Burst Procedure for the Hawk Disk Drive Without a Small Disk Exerciser
- 2.7.19 Hawk Drive Absolute Filter Inspection

**2.8 Disk Drives**

- 2.8.1 Winchester Disk Performance - [May 1985]

**2.9 AM-515**

- 2.9.1 "The Inside Scoop: AM-350, AM-515 & AM-640 Software Upgrades"  
- Cross reference: See Software Volume Article 1.1.19 with same title - [Nov. 1986]

## SECTION 3 - I/O BOARDS

### 3.1 AM-120

- 3.1.1 AM-120 Auxiliary I/O Board
- 3.1.2 Adding an AM-120 to an AM-100 System
- 3.1.3 AM-120 Remote Reset Installation Instructions
- 3.1.4 AM-120 Time-of-Day Clock Feature

### 3.2 AM-300

- 3.2.1 DWB-00300-00 Enhancement Procedure
- 3.2.2 AM-300 Baud Rate Modification
- 3.2.3 AM-300 Six Port Serial Input/Output Circuit Board
- 3.2.4 Interrupt Level for Second AM-300 in Winchester-Based Systems
- 3.2.5 Adding Additional AM-300 I/O Circuit Boards to an AM-100/L System.

### 3.3 AM-310

- 3.3.1 AM-310 Communications Controller Board
- 3.3.2 AM-310/A Four-Port Buffered I/O Controller

### 3.4 AM-320

- 3.4.1 AM-320 Line Printer Subsystem

### 3.5 AM-330

- 3.5.1 AM-330 Data Communications Board (general discussion)

### 3.6 AM-316

- 3.6.1 AM-316 Information - [Feb. 1985]
- 3.6.2 AM-316 Documentation Update - [Sept. 1985]
- 3.6.3 AM-316 Revision A04 Modification - [Oct. 1985]

### 3.7 AM-350

- 3.7.1 "The Inside Scoop: AM-350, AM-515 & AM-640 Software Upgrades"  
- Cross reference: See Software Volume Article 1.1.19 with the same title - [Nov. 1986]

**SECTION 4 - TAPE DRIVES & INTERFACE BOARDS**

**4.1 AM-600**

- 4.1.1 AM-600 Subsystem (cable connections)
- 4.1.2 AM-600-02 Modification for Use with the AM-710
- 4.1.3 AM-600-02 Modification for Use with the AM-700
- 4.1.4 AM-600/T Magnetic Tape Interface

**4.2 AM-610**

- 4.2.1 AM-610 Video Cassette Recorder Backup
- 4.2.2 AM-610 Enhancements
- 4.2.3 VCR and Streamer Subsystems
- 4.2.4 AM-610 Video I/O Level Modification
- 4.2.5 Notice to AM-610 Users
- 4.2.6 AM-610 Adjustment - [Jul. 1983]

**4.3 AM-620**

- 4.3.1 AM-621 Streaming Tape Backup
- 4.3.2 AM-621 Streaming Tape Subsystem Maintenance
- 4.3.3 AM-620 Streaming Tape Backup on AM-100/L-Based Systems
- 4.3.4 S-100 Streamer Drive Configurations

**4.4 AM-640**

- 4.4.1 "The Inside Scoop: AM-350, AM-515 & AM-640 Software Upgrades"  
- Cross reference: See Software Volume Article 1.1.19 with the  
same title - [Nov. 1986]

## VOLUME II - SOFTWARE INFORMATION

### Table of Contents

#### 1.0 General Information

- 1.1 General Information
- 1.2 PIC Procedures

#### 2.0 AMOS Operating System

- 2.1 AMOS Releases
- 2.2 AMOS Patches
- 2.3 AMOS Utilities

#### 3.0 AMOS/L Operating System

- 3.1 AMOS/L Releases
- 3.2 AMOS/L Patches
- 3.3 AMOS/L Utilities

#### 4.0 Utilities

- 4.1 General Utilities
- 4.2 CRT420
- 4.3 XCERT

#### 5.0 Backup Procedures

- 5.1 Backup Procedures

#### 6.0 Software Packages

- 6.1 RJE
- 6.2 CP/M
- 6.3 AlphaWRITE
- 6.4 VIDEOTRAX
- 6.5 MULTI

#### 7.0 UNIMOS

- 7.1 UNIMOS

#### 8.0 AMOS/32 Operating System

- 8.1 AMOS/32 Releases
- 8.2 AMOS/32 Patches
- 8.3 AMOS/32 Utilities

## SECTION 1.0 - GENERAL INFORMATION

### 1.0 General Information

Alpha Micro Warranty Program

### 1.1 General Information

- 1.1.1 Resources for Writing Custom Terminal Drivers (\*.TDV)
- 1.1.2 File Extension Allocations
- 1.1.3 Decreasing Resident Monitor Size
- 1.1.4 Updating the System Monitor
- 1.1.5 Factors which Increase the Monitor Size
- 1.1.6 Software Hints (AlphaPASCAL)
- 1.1.7 Documentation Adjustment
- 1.1.8 Generating a Shell Program
- 1.1.9 Warm Boot Tape Created on an AM-100/L
- 1.1.10 Important Notice for VCR Users
- 1.1.11 Warm Boot Reminder
- 1.1.12 Software Patch Policy Change
- 1.1.13 Rebuilding a Master File Directory
- 1.1.14 Adding Bad Tracks to BADBLK.SYS - [Sep. 1983]
- 1.1.15 Converting Block Numbers Into Head and Cylinder Numbers - [Nov. 1983]
- 1.1.16 Using CRT420 and BADBLK.SYS - [Jul. 1984]
- 1.1.17 Usage of the New Draw Box and Scroll Box Commands - [Dec. 1984]
- 1.1.18 Important Notice to Dealers Expecting Delivery of New Systems [Feb. 1985]
- 1.1.19 The Inside Scoop: AM-350, AM-515 & AM-640 Software Upgrades - [Nov. 1986]

### 1.2 PIC Procedures

- 1.2.1 PIC Code Procedure - [Sep. 1984]

SECTION 3.0 - AMOS/L OPERATING SYSTEM

3.1 AMOS/L Releases

- 3.1.1 Software Release 1.0A
- 3.1.2 Using AlphaBASIC under AMOS/L 1.1 - [Sep. 1983]
- 3.1.3 AlphMENU - [Sep. 1983]
- 3.1.4 Trident "L" Software Release - [May 1984]
- 3.1.5 1.2 No Boot - [Mar. 1985]
- 3.1.6 1.3 Copyright Message and Graphics - [Dec. 1985]
- 3.1.7 New AlphaBASIC Error Code - [Apr. 1986]
- 3.1.8 Negative Substring Modifiers in AlphaBASIC - [May 1986]
- 3.1.9 "Phoenix No Boot with AMOS/L 1.3" - Cross reference:  
See Hardware Volume article 2.4.26 with same title - [Jul. 1986]
- 3.1.10 AM-1013 on AMOS/L 1.3B - [Sep./Oct. 1986]

3.2 AMOS/L Patches

- 3.2.1 Implementing Patches for an AMOS/L System
- 3.2.2 Patches
  - PTCH.LIT - SPN-001L-00
  - AMOSL.MON - SPN-002L-01
  - RUN.LIT - SPN-003L-02
  - PRINT.LIT - SPN-005L-00
  - WRMGEN.LIT - SPN-006L-00
  - ISAM.SYS - SPN-007L-01
  - ISMBLD.LIT - SPN-008L-01
  - ISMDMP.LIT - SPN-009L-01
  - DSKANA.LIT - SPN-010L-00
  - ISAM.SYS - SPN-011L-02
  - ISMBLD.LIT - SPN-012L-01
  - ISMDMP.LIT - SPN-013L-01
  - LABEL.LIT - SPN-014L-00
  - VUE.LIT - SPN-015L-00
  - XEBDVR.DVR - SPN-016L-01
  - XLOCK.SBR - SPN-017L-00
  - AMSORT.SYS - SPN-018L-00
  - SORT.LIT - SPN-019L-00
  - CRT420.LIT - SPN-020L-00
  - DSKPAK.LIT - SPN-021L-00
  - 610DVR.DVR - SPN-022L-00
  - RUN.LIT - SPN-023L-00
  - 210DVR.DVR - SPN-024L-00
  - SCNWLD.SYS - SPN-025L-00
  - CRT410.LIT - SPN-026L-00
  - TRM.DVR - SPN-027L-00
  - RUN.LIT - SPN-028L-00
  - ISMBLD.LIT - SPN-029L-01
  - ISAM.SYS - SPN-030L-01
  - AM100L.M68 - SPN-032L-00

(continued on next page)

Section 3.0 - AMOS/L Operating System (continued)

- 3.2.2 Patches (continued)
  - AM120.M68 - SPN-033L-00
  - PRINT.SBR - SPN-034L-00
  - SPOOL.SBR - SPN-035L-00
  - BASORT.SBR - SPN-036L-00
  - INPUT.SBR - SPN-037L-00
  - COPY.LIT - SPN-038L-00
  - FLOCK.SBR - SPN-039L-00
  - SET.LIT - SPN-040L-01
  - AM310.IDV - SPN-041L-00
  - SPOOL.SBR - SPN-042L-00
  - ISAM.SYS - SPN-043L-00
  - ISMBLD.LIT - SPN-044L-00
  - AM60.TDV - SPN-045L-00
  - RUN.LIT - SPN-049L-00 - [Aug. 1983]
  - SYSACT.LIT - SPN-051L-00 - [Aug. 1983]
  - AM6X.TDV - SPN-110L-00 - [Oct. 1984]
- 3.2.3 Patches to the AMOS/L System - [Jun. 1984]
- 3.2.4 Patches to AMOS/L - [Nov. 1985]
- 3.2.5 Software Patch Notice - [Apr. 1986]:
  - AMOSL.MON - SPN-173L-01 and
  - AMOSL.MON - SPN-174L-01
- 3.2.6. Patches to AMOS/L (Update #3) - [May 1986]
- 3.2.7 Bitmap Size Change to 5 1/4" 70 Megabyte Fujitsu Drive With Patch to FIX420.LIT SPN-186L-00 - [Jun. 1986]
- 3.2.8 AMOS/L 1.3B Monitor Patch - [Jul. 86]
- 3.2.9 Patches to AMOS/L (Update #4) [Sept./Oct. 1986]
- 3.2.10 Hash Total Generation - [Sept./Oct. 1986]
- 3.2.11 New Software Patches Available from AMSD - [Nov. 1986]
- 3.2.12 AM-415 Hardware/Software Compatibility Note - SPN-222L-01 - [Nov. 1986]

**3.3 AMOS/L Utilities**

- 3.3.1 MOUNT.LIT Update
- 3.3.2 ISAM and LOKSER - [Jun. 1984]
- 3.3.3 Upgrades and Updates - [Jul. 1984]
- 3.3.4 AMOS Installation Program - [Aug. 1984]
- 3.3.5 Current Defined TCRT Codes (1.2) - [Dec. 1984]
- 3.3.6 ISAM and Illegal Record Numbers - [Mar. 1985]
- 3.3.7 ISAM: Calculating the Number of Empty Index Boxes - [Nov. 1985]
- 3.3.8 Floating Point and AlphaBASIC - [Nov. 1985]
- 3.3.9 ISAM/LOKSER - Tutorial (Part I) - [Jan. 1986]
- 3.3.10 ISAM/LOKSER - Tutorial (Part II) - [Mar. 1986]
- 3.3.11 ISAM/LOKSER - Tutorial (Part III) - [Apr. 1986]
- 3.3.12 ISAM/LOKSER - Tutorial (Part IV) - [May 1986]
- 3.3.13 ISAM/LOKSER - Tutorial (Part V) - [Jun. 1986]

**SECTION 6.0 - SOFTWARE PACKAGES**

**6.1 RJE**

6.1.1 AlphaRJE

**6.2 CP/M**

6.2.1 Transferring CP/M Applications Programs

6.2.2 New CP/M Release - [Mar. 1984]

**6.3 AlphaWRITE**

6.3.1 AlphaWRITE Printwheel Specifications - [Jan. 1985]

6.3.2 AlphaWRITE 1.2 Potential Footnote Problem - Nov. 1986]

**6.4 VIDEOTRAX**

6.4.1 New Features of the VIDEOTRAX 3.0 Release - [Nov. 1986]

**6.5 MULTI**

6.5.1 MULTI: It Simply Makes Your Computer Easier to Use - [Nov. 1986]

**SECTION 8.0 - AMOS/32 OPERATING SYSTEM**

**8.1 AMOS/32 Releases**

**8.2 AMOS/32 Patches**

8.2.1 "New Software Patches Available from AMSD" - Cross reference:  
See Software Volume Article 3.2.11 with same title - [Nov. 1986]

**8.3 AMOS/32 Utilities**