

## Amiga Inc. to Support OS3.5 Update for Classic Amigas

From Gary Peake, of Team AMIGA

It is official! Amiga Inc. announces OS3.5 with P5 PPC board support will be done by the first half of '99! It was not announced however, whether the OS3.5 upgrade will use the P5 or H&P PPC software.

Developed in combination with a lot of Amiga developers, OS3.5 Upgrade will use the current 3.1 ROMS and will be a CD ONLY release. There will be no PPC version, however PPC support will be included using either P5 or H&P PPC software, as stated above.

### Highlights concerning the OS3.5 upgrade:

- ☛ RTG Support
- ☛ RTA Support
- ☛ CDFS Support
- ☛ New Interface
- ☛ Plus bug fixes and updates to several areas of the OS

Purposes of the OS3.5 upgrade is to support all of the advanced hardware and software that is on the *Classic Amiga* market and to allow developers to code for a higher specification *Classic Amiga*. This will open the door for more and better software and hardware for the *Classic Amiga* while giving developers more transition time into the NG Amiga.

There will also be a full Classic OS3.5 emulator shipping with the NG OS so we can all start buying software again secure in the knowledge that it will be supported and will run with the NG Amiga!

This 3.5OS upgrade and the promise of full emulation in the NG Amiga will smooth the transition for all Amiga users to the NG Amiga.

In the next week or so, a website will go up especially for OS3.5 and Amiga Inc will begin releasing information on the upgrade to the Amiga press. More details about OS3.5 will also be released in Cologne.

We are told that the highlight of the show thus far for Bill McEwen is the modeling convention going on in the same hotel. 400 female wannabe's apparently provided fodder for some of the oldest chat up lines in the book as Amiga guys attempted to entice the young ladies into discussions about Intuition and Peeks and Pokes.

Joe Torre, in his own enduring style, showed up in a giant sumo outfit and ran around the lot pursued by security. Not to be outdone, Rick "The Canadian's Are Coming" Giannini of Asimware flattened Amiga Inc's Darreck Lisle several times without even putting on his sumo suit.

Another grand demonstration of why the Amiga community MUST keep one step ahead of society (and the law!).

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**Contributions**

Contributions can be soft copy (on 3½" disk) or hard copy. It will be returned if requested and accompanied with a self-addressed envelope. The editor of the Amiga Users Group Inc. newsletter *Workbench* retains the right to edit contributions for clarity and length.

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**Deadlines**

*Workbench* is published each month. The deadline for each issue is the 2nd Sunday of the month of publication.

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Newsletter produced by



Not much has happened this last month in the world of Amiga. The upcoming AmigaFest at Albert Park is at this stage still going ahead, however, the organiser and the website concerned with its promotion do not seem very enthusiastic. Questions remained unanswered and vital information seems missing. Some exhibitors seem reluctant to attend. It doesn't look good for the show. We can only cross our fingers that this event will take place to restore the local Amiga community's confidence in the support for our beloved computer platform.

In other news, Byte One Computers has acquired MVB Computers. Both premises will be still be operating from their present locations. With this amalgamation, the two operations should be able to fulfil your every Amiga need. Contact Gordon at Byte One Computers or Bruce at MVB Computers for more details or see their ad and editorial on pages 6 & 7 of this newsletter.

Tom Heeren



**Meeting**

This month's meeting has not been planned yet but rest assured that something interesting will turn up as it did last month!

**Forthcoming Meetings**

If you can help with ideas for our monthly meetings please contact a committee member.

**October 18:** Next club meeting.

**November 15:** A Surprise In Store?

**A Member Sadly Missed**

In November last year Neil Stuckey, a long time member, passed away. His wife, Adela, has kindly donated hundreds of Amiga Magazines, cover disks and CDROMs to the club. This donation is greatly appreciated and the club wishes to extend their sympathies to Adela and family and also their gratitude for this generous donation. Adela also has expressed some interest in attending or next swap meet as she has some hardware she wishes to sell to members.

John Hopkins, a committee member, has collected this large donation and no doubt will be putting it on display at this month's meeting. Why not come along and see some Amiga history!

Tom Heeren

**A Colour Workbench!**

No doubt you have seen the *Workbench* develop over the last few months into what is a rather classy little publication.

For all those that are interested in seeing a colour version of the magazine please contact the editor. Once you have contacted me you will receive in your email the newsletter in .pdf format. This can be read by a PC or Mac using the free Adobe Reader software available from the web. You can of course read the document using your Amiga and make it emulate a PC or Mac or even use an Amiga version of a .pdf reader. I have, however, had reports that the Amiga version cannot reproduce the file accurately.

For those members that take up this offer, please be assured that your regular hardcopy will still be arriving in your letter box.

Send your requests to:

E-mail: doggone@blaze.net.au

Subject: Colour Workbench

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# THE YEAR 2000 AND THE AMIGA

**T***o make a long story short, the Amiga in general does not suffer from the Year 2000 problem in the context known to the PC world. However, the Amiga faces three distinct date problems and a single, specific Year 2000 problem with limited scope which will be described below.*

## 1. Scope of this document

The following text refers to Amiga desktop computers built between 1986 and 1997 and only covers computer hardware configurations designed and built by Commodore-Amiga, Inc. This specifically excludes 3<sup>rd</sup> party hardware extensions, such as the Microbotics "StarBoard" which among other features offered a battery backed up clock, but it includes Amiga computers built by Amiga Technologies GmbH and Amiga, Inc.

## 2. How Amigas handle date & time

The Amiga operating system has always followed the Unix model in measuring time as the number of seconds that have elapsed since a fixed point of time. Under AmigaOS that fixed point of time (also known as 'epoch') is 00:00:00 of January 1, 1978 (Unix uses 00:00:00 GMT, January 1, 1970). The operating system manages time and date through a central component known as `timer.device`. This component reads and stores date and time information using a data structure known as `timeval` which, in 'C' language notation, is shown below:

```
struct timeval
{
    ULONG tv_secs;
    ULONG tv_micro;
};
```

In this context an `ULONG` refers to an unsigned 32 bit quantity. The `tv_secs` structure member holds the number of seconds that have elapsed since the AmigaOS epoch and the `tv_micro` member denotes the number of microseconds (the 10<sup>-9</sup>th part of a second) that have elapsed since the last second has passed.

Until AmigaOS 2.0 was introduced in 1989/1990 the operating system only provided the methods for time keeping but did not offer any means to convert the number of seconds elapsed since the AmigaOS epoch into human readable format. This work was left to application software developers who implemented different conversion algorithms with varying success.

## 2.1 The AmigaDOS date and time handling is special

"AmigaDOS" and "AmigaOS" are not two names for the same thing. Exactly the opposite is true: AmigaDOS is (in a nutshell) the name of the AmigaOS layer which implements filing systems and their actions, the command line interpreter and which handles loading and relocation of executable binary files. AmigaDOS is more or less a port of the Cambridge University TRIPOS 32 bit kernel. It has its own peculiar data structures, including its own version of the `timeval` structure described above. The AmigaDOS flavour is known as `DateStamp`, as shown below:

```
struct DateStamp
{
    LONG ds_Days;
    LONG ds_Minute;
    LONG ds_Tick;
};
```

In this context a `LONG` refers to a signed 32 bit quantity. The `ds_Days` member contains the number of days (each day consists of exactly 24 hours) that have passed since the AmigaOS epoch. The `ds_Minute` member denotes the number of minutes that have passed since midnight (00:00:00) of the given day and the `ds_Tick` member contains the number of "ticks" that have passed since the last minute. A minute consist of 3,000 "ticks", i.e. there are 50 ticks in a second.

AmigaDOS uses `DateStamps` to describe file and volume creation dates, and all shell commands follow the same model, i.e. if the system date is set through the shell `DATE` command, it will calculate time and date in `DateStamp` format.

## 2.2 Local time vs GMT

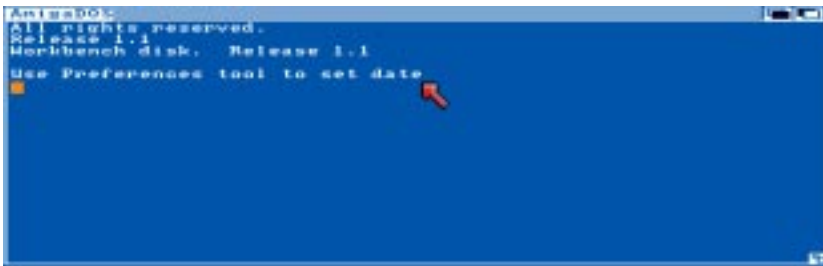
The Amiga operating system never knew the concept of local and global time. While the AmigaOS 2.1 update (1992) introduced a locale preferences editor that allowed for the time zone to be selected, the operating system itself never put this feature to use or encouraged application software developers to use it. One might argue that with this background, the AmigaOS was always tuned to local time.

## 2.3 How Amigas maintain system time

The early Amiga computer models did not support a battery backed up real time clock that would keep on ticking and maintaining local time even until after the machine was switched off. For example, the first Amiga computer ever (later christened the Amiga 1000) did not offer a battery backed up clock. For the Amiga 500 the battery backed up clock was an extra hardware feature one had to buy separately with a memory

expansion. The Amiga 2000 and (with the exception of the Amiga 600 and Amiga 500+ models) all models to follow did feature a built-in battery backed up clock.

On machines without battery backed up clocks, the Amiga sets its system time according to the modification date of the boot volume. In other words, the point of time the last file was modified or created on a disk would determine



**Figure 1:** The original system request from Amigas without a battery backup clock installed.

the system time. As this was by no means accurate, the AmigaOS boot process would suggest and prompt you to adjust the system date once the system had booted as shown in Figure 1 below.

With machines that featured battery backed up clocks, the system time was read during the boot process. As of AmigaOS versions 1.2 and 1.3 a special program, called `SetClock`, was responsible for reading the current clock settings and setting the system time accordingly. Starting with AmigaOS version 2.0 that functionality was integrated into the ROM operating system, making the `SetClock` utility at least in part redundant.

If the system starts up without being able to set its system time, it defaults to 00:00:00 January 1, 1978.

### 3. Setting and reading the time

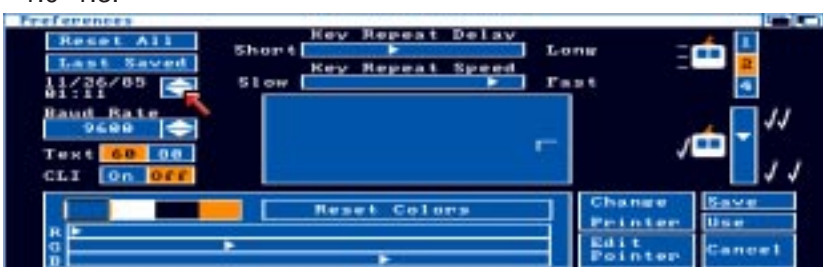
The Amiga offers both a command line interface and a graphical user interface. Both went through a number of changes over the years as will be described below.

#### 3.1 The command line interface

There are two shell commands which deal with the system date, these being `SetClock` and `Date`. The `Date` command is for reading and setting the current system date whereas the `SetClock` command deals with the battery backed up clock, it reads and stores the current system time from/in it. The `Date` command is of particular interest due to the human readable date format it uses by default. Today you might invoke the `Date` command and receive the following output:

19-Sep-98

**Figure 2:** The system time editor was incorporated in the preferences editor in AmigaOS 1.0–1.3.



As one can see, the year number is limited to two digits only. Even if a different locale is used (e.g. French), the year will always be displayed with its two last decimals only. Luckily, this numbering is consistent with the following rule:

- If the year number is greater than or equal to 78, the year is 1900 plus the number given (i.e. numbers 78...99 indicate years 1978...1999).
- If the year number is smaller 78, the year is 2000 plus the number given (i.e. numbers 00...77 indicate years 2000...2077).

To set the system time to any year beyond 1999, you reverse the rule, i.e. entering `date 01-jan-01` will set the time to 1 January, 2001.

All versions of the AmigaDOS `Date` command (version 1.1 through version 37.1) display and parse the data format in the same fashion. They behave consistently and predictably throughout all Amiga operating system revisions.

### 3.2 The graphical user interface

The system time is set through the preferences editor which in AmigaOS versions 1.0-1.3 used to be a single, monolithic program as pictured in Figure 2.

The controls for setting the system time are located in the top left corner of the window. They allow the last two digits of the year to be adjusted; the model follows the AmigaDOS `Date` command in that a year number smaller than 78 denotes a year in the range 2000...2077 and all other settings refer to a year in the range 1978...1999.

With the introduction of AmigaOS 2.0, the time preferences editor was moved into a single program named `Time` as pictured in Figure 3.

In this editor, the year can be entered as a four digit number. However, the range is limited to the years 1978...2113.

When the AmigaOS 2.1 update was released, the time preferences editor was revised, as can be seen in Figure 4.

Just like with its predecessor, the year can be entered as a four digit number. In this case, the range is limited to the years 1991...2099.

## 4. The problems

As far as is known today, the Amiga faces four date problems. Two are design problems caused by numeric overflow, one is caused by hardware limitations and one is a real bug that will strike in the year 2000.

#### 4.1 Negative time

As was outlined above, the Amiga measures time in seconds. As it turns out, the number of seconds to accumulate until 19 January, 2046, 03:14:07 will form the largest value a signed 32 bit integer number will hold. This is not a problem for the time keeping module (`timer.device`), but application software and other operating system components which treat the number of seconds as a signed quantity will get into trouble one second later: the number of seconds will rise to 2,147,483,648 which in two's complement

format represents the negative number - 2,147,483,648. AmigaDOS, which always treats time as a signed quantity, will consider this date to be invalid because it is negative. Worse, the ROM date conversion routines exhibit a bug which, once the date is later than 19 January, 2046, 03:14:07, causes all subsequent date operations to be inaccurate. The immediate effect this has is that calculations on dates can be off by more than two years.

This behaviour is consistent through all AmigaOS versions. A fix is not available yet, but research is in progress to investigate whether this bug may be fixed by updating several AmigaOS modules (`locale.library`, `dos.library`). After all, this bug is "just" a side-effect of treating an unsigned quantity as signed.

#### 4.2 Time rolling over

An unsigned 32 bit integer can hold a maximum value of 4,294,967,295. When the Amiga has accumulated that many seconds, it will be 7 February, 2114, 06:28:15. One second later the seconds counter will roll over and restart at 0. In other words, on 7 February, 2114, 06:28:16 the Amiga will believe that it is midnight on 1 January, 1978.

No fix for this problem is available yet.

#### 4.3 The battery backed up clock can count only to 99

Amiga computers that feature a battery backed up real time clock use one of two different hardware designs: either the Oki MSM6242RS (A500, A2000) or the Ricoh RP5C01 (A3000, A1200, A4000) chip. As is common with clock chips of that type, the year counter is implemented as a two digit BCD number. Once it reaches the year 99, the counter will roll over and start again with 00.

Starting with Amiga operating system version 2.0, the boot process will read the battery backed up clock time and set the system time accordingly. This takes place every time the Amiga is reset. Because the year number covers only two digits, the same algorithm as used by the AmigaDOS Date command is employed. The consequence this has is that the Amiga system date set at system startup time will always be in the range 1978..2077. While the system clock will keep on ticking beyond 31 December, 2077 a system

reset will set the clock back to 1 January, 1978.

No fix for this problem is available yet.

#### 4.4 Some versions of SetClock stop working in the year 2000

The SetClock program shipped with the Amiga Workbench disk revisions 1.2 and 1.3 exhibits a bug which causes it to miscalculate the battery



Figure 3: The time preferences editor for AmigaOS 2.0

backed up clock time starting with the year 2000. It is accurate only for the years 1978..1999. Once the year counter rolls over to 00, SetClock will believe that the year is 1978 until the year 2079 is reached; that's when it will believe that the year is 1979 - which is not necessarily an improvement.

Please note that only the SetClock program found on the AmigaOS 1.2 and 1.3 Workbench disks suffers from this problem. Several versions of this program were distributed, each between 4,000 and 7,000 bytes in size. To tell whether you have a version that works or not, check the file size; if it is less than 1,000 bytes in size you will probably have the properly working version. If it is larger than 4,000 bytes, you probably have the faulty version.

A fix for this problem is provided in the following archive.

[ftp://ftp.amiga.com/pub/SetClock\\_v34.3.lha](ftp://ftp.amiga.com/pub/SetClock_v34.3.lha)

Download it and unpack it, then read the enclosed SetClock\_ReadMe file.

*Olaf Barthel*

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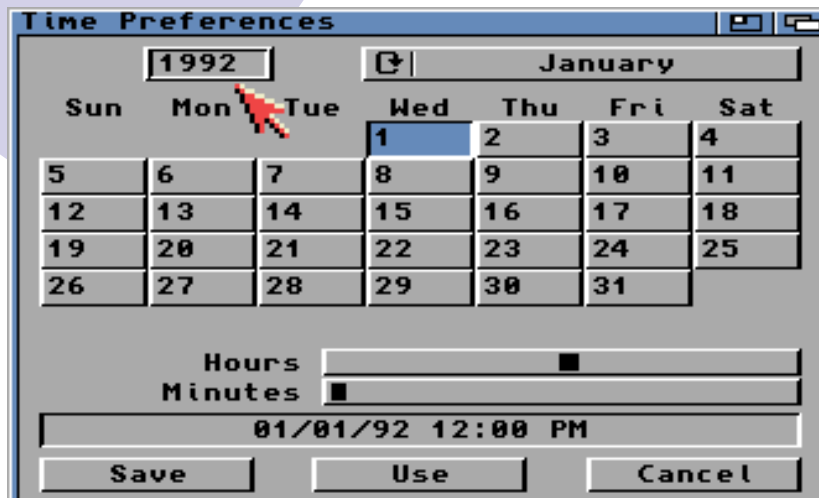


Figure 4: The editor that is supplied with AmigaOS 2.1+ to control the time and date of your system.



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**Byte One Computers is pleased to announce that we have acquired the assets of MVB Computer Supplies Pty Ltd on the 1st October 1998. The store located at 506 Dorset Rd, Croydon VIC, will continue to operate under the name "MVB Computers".**

Byte One has primarily been involved with the importation of the leading edge in Amiga hardware expansions. While this focus has not changed, we will now be expanding the scope of our operations in an effort to provide the Australian Amiga community with fast and easy access to the very latest in Amiga hardware and software.

You can be assured that MVB Computers will strive to give our customers the service and support they would expect, which has perhaps been lacking in our region of the world in recent times. I cannot emphasize enough how important this is to us as we realise that it is your support that is essential to us and therefore it is our responsibility to offer the same support in return.

Recent talks with our contacts overseas indicate a bright future for what has been termed the "Classic Amiga". The migration to the PowerPC family of processors is continuing and with a range of exciting new packages soon to be released, the position of the PowerPC in the Amigas future is stronger than ever.

Due to the lengthy negotiations and current reorganisation of MVB, we are unsure as to whether we will be able to attend the Melbourne Show with a stand this time. If we are not able to be there, we hope that you understand why.

By the time you read this, we will have on the way a range of new hardware and software. We are currently setting up an in store display to show you exactly what the PowerPC is capable of, and we encourage you to come down to the store to take a look, or to ask our knowledgeable staff any questions you may have regarding Amiga products.

Starting November 16th and running for one month will be an "Under New Management" sale. We will be offering discounts on new and existing software as well as excellent deals on the PowerUP boards so that everyone has the chance to experience the Power of PowerPC.

Thank you and we hope to see you soon,

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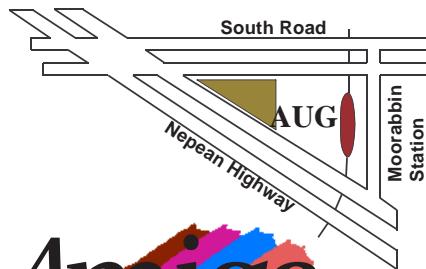
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The North Western Amiga Users Group was formerly a special interest group of AUG but is now a separate entity.

**Membership**

The AUG Inc. membership year runs from September to August. If you are joining in:

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**Disk and Book Library**

AUG has a collection of Amiga books and magazines. Members can borrow for a period of one month. The library is available at most meetings. Programs from the public domain library are available at many meetings.

**World Wide Web Access**

Chris Quonoey can provide a very competitive Internet connection to all AUG members at reduced rates from BlazeNet. Connection costs are as low as \$0.95/hr. There are no joining or monthly fees and your access time is paid for in advance. For details contact Chris (0418 377 975).

**The Dead Letter Department**

The AUG's new BBS run by Craig Hutchison has access to all the latest AmiNet files as well as other goodies. Registration is free to all members. Phone: (03) 9571 7194

**Meetings**

The Amiga Users Group meets at the Moorabbin Arts Centre Complex, 979 Nepean Hwy, Moorabbin (see map) on the 3rd Sunday of each month at 2:00pm. There is ample parking at the rear of the complex off South Road. Meetings are held in the "Sun Room" or on the 2nd floor (up the stairs then turn left). Ask at reception if you get lost. Cost: \$2.00 members; \$4.00 non-members. This is to cover rental costs.

**Amiga**  
Users Group Inc.

**Membership Form**

First Name: ..... Surname: .....

Address: .....

Post Code: ..... E-mail: .....

Phone (AH): ..... Phone (BH): ..... Fax: .....

*I have enclosed a cheque or money order as outlined in the table above. Once admitted as a member of the Amiga Users Group (Vic.) Inc. I agree to abide by the rules of the association for as long as I continue to be a member.*

Signed: ..... Date: / /1998

*If joining by mail please allow 2-3 weeks for your membership to be processed.  
(The following is optional)*

Year of Birth: ..... Amiga model(s): ..... Occupation: .....

Interests: .....

Where did you hear about AUG?: .....

What services would you like AUG to provide?: .....