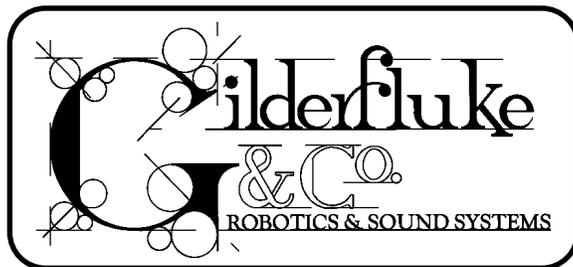


**"Always do right.
This will gratify
some people and
astonish the rest"
- Mark Twain**



**All the News
that we could
jam into a little
under 4 pages**

Views and News from the world of Gilderfluke & Co.

November 1995

Number 5

NEW MICROCONSOLE

MicroConsoles were one of the first products made by Gilderfluke & Company over twelve years ago. Our new revision of this old workhorse is the first in almost eight years.

This new MicroConsole adds the ability to work with PC•MACs Animation Control Systems in addition to Micro MACs and Smart Brick Systems. It also replaces the IBM Backup Box. At about 1/3 the size of the old MicroConsole, it gives you a new midrange choice for programming consoles between the Full-sized MACs-CON and single channel Togglobyte TOG-02.



The New MicroConsole features include:

- Works with all PC•MACs, MICRO MACs and Smart Brick Animation Control Systems from Gilderfluke & Company. It will even work with any DMX-512 control signals coming from a lighting board or other piece of equipment!
- Can be used with any combination of four eight bit digital (thirty-two digitals) or four analog channels.
- Thirty-two tactile feel buttons for programming digital functions. Any combination of these inputs can be programmed while all the others are playing back animation data that has been previously recorded.
- Four rotary inputs and four external analog inputs which can be used in any combination for programming analog functions. The external inputs can be used with joysticks, a 'Waldo', or any other 0-10 volt signals.
- LARGE seven segment LED display for the display of the data being recorded or played back.

~ c o n t i n u e d o n p a g e 4 ~

NEW SMART BRICK BRAINS FOR CARD CAGE MOUNTING

When Gilderfluke & Co. first started building Animation Control Systems, most were small stand-alone systems in individual boxes. Now most of our systems are being mounted in card cages. The Smart Brick Brain is the last part of our Smart Brick System to make this transition.



The Rack Smart Brick Brain is a 3-1/2" by 6" card in the same form factor as all of our other card level 'Brick' animation products. It will fit into any of our Animation card cages, occupying a single one inch wide slot.

~ c o n t i n u e d o n p a g e 2 ~

PC•MACs DOES WINDOWS ('95)

PC•MACs and PC•Pb will both run under Microsoft's Windows '95. A few minor cosmetic glitches will be fixed in our next software updates.

The problem we have run into with Windows '95 has been with Windows itself. It has bugs. For most people running PC•MACs these won't present any major problem since an operator will be there to correct them.

For automated playback systems running under PC•Pb, Windows '95 will occasionally stop playbacks for no reason. Although the safety timers in our PC•Pb code will usually restart the animation system within a few seconds,

~ c o n t i n u e d o n p a g e 4 ~

HARD DISK AUDIO FOR PC•MACS

PC•MACs has quickly been accepted as the worldwide standard for Animation Programming Systems. It is the best selling Animation Programming System in the world, and is used by virtually every major animation manufacturer as their standard programming platform.



Our latest revision of the PC•MACs and PC•Pb software will be available beginning at the 1995 IAAPA convention in New Orleans. The programs have been rewritten to take advantage of several of the newer features available under Microsoft's Windows 3.1 and Windows '95.

PC•MACs has always been able to lock to SMPTE, LaserDisks, and internal or external clocks. The latest release of PC•MACs adds the ability to lock to audio files stored on the PC's hard disk. All you need to add to your PC to take advantage of this feature is some standard audio playback hardware.

Once a show has been locked to an audio file, the OffLine editing screen will display the audio waveform along with any animation channels being edited. This allows you to 'see' the sounds that should be in sync with your animation movements.

For programming of mouth movements, a new 'Yak' function has been added. When a selected digital or analog channel is set to 'Yak' the audio data from the hard disk is analyzed and turned into animation data for those channels. You can then edit these animation channels as needed to bring them into perfect sync with the audio.

Although any low cost audio card that can play Windows .WAV audio files will work with PC•MACs, their sound quality is not the greatest in the world. If you are going to be using this feature for anything other than as a programming aide, we would recommend that you spend a bit more and get a slightly higher quality audio card (the cards from Turtle Beach sound good). We have also found that the crystals that set the sample rates on some of the cheaper cards are none too accurate. One card we tried actually played a one minute long sample in one minute and four seconds! PC•MACs responded to this card by constantly having to correct for drift between the animation data and the audio being played.

The audio file playback from PC•MACs can be used in

place of the traditional 'scratch tape' during programming, or as the permanent audio playback medium for your show. Be aware that playing back audio from a hard drive means that it will constantly be running, and this will definitely shorten its lifespan accordingly. With the cost of hard drives as ridiculously low as they are now, a spare hard drive which is preloaded with all the show and audio data is prudent for any permanent installation.

NewRackSmartBrickBrain...continuedfrompage1:

One of most popular options on these new Brick Brains is an LCD display on its front. We had to search for quite some time before we found an off-the-shelf display module that we could add without having to make the cards occupy more than a single card cage slot. This display gives you two lines of alphanumeric data on the status of the Brain and the shows it is running. Between shows it will even tell you the time of day!

The Rack Mounted Smart Brick Brain features include:

- Supports up to 255 separate shows (the original Smart Brick Brain allows only 63 shows).
- Supports a total memory capacity of over one MByte on the Bricks. This translates into a show capacity of over 9 hours at 30 FPS. The original Smart Brick Brain allows only 64 KBytes of memory per system.
- Real Time Clock allows you to schedule what time shows will be played. Ninety different schedules of ninety entries each are available. You can select which of the schedules will be used on each day of the year up to a year in advance. The Clock remains accurate within 10 PPM even during power outages and automatically adjusts for daylight savings time.
- Sixteen different countdown delays between shows can be selected using a front panel mounted rotary switch. You can set each of these delays for up to 99 hours, 59 minutes and 59 seconds.
- The Rack Mounted Smart Brick Brain can perform countdown between shows while simultaneously playing other shows in the background.
- Sequential support for up to seven LaserDisk players. Supports both CAV (normal 1/2 hour capacity) and CAV (extended 1 hour capacity) LaserDisks.
- The configuration is stored in battery backed RAM, or can be burnt into EPROM for true nonvolatility.
- Built-in 'attract' modes for use in coin operated devices like fortune tellers and shooting galleries.

GILDERFLUKE SHOW PLANS

We are scheduled to exhibit at the following trade shows and conventions in 1995 and 1996. Most of the equipment described in this newsletter will be on display at these shows:

Nov. 15-18: IAAPA (International Association of Amusement Parks and Attractions) at the New Orleans Convention Center in New Orleans, Louisiana.

June 29-July 1: Show Biz Expo at the Los Angeles, California Convention Center

CUSTOM DESIGN FOR UNIVERSAL'S BACK TO THE FUTURE ATTRACTION

Once upon a time we had lots of time for doing custom designs for our clients. One of the problems with the tremendous success we have had is that we just don't have as much time for custom work these days.

A recent custom project has been a new design for the controllers that run the dashboards on Universal's Back to the Future attraction in California. The attraction was originally built for the opening of Universal studios in Florida about four years ago. The twenty-four dashboards became problematic, and similar problems raised their head two years later at Universal Hollywood.

We were contacted by Universal Studios Hollywood Audio/Video department to design replacement controllers. Our design is based on our Analog Smart Brick. At 3-1/2" x 7", it is about 1/4 the size, and uses about 1/4 the parts to do *more* than the controller it is replacing. Because of the constant vibration that these controllers will have to endure, we have added such design features as using restraints to anchor all the parts that might shake loose.

To program the show we used a technique that we have often used when retrofitting shows that are running with an outdated or another manufacturer's control system. We run the old system in parallel with a PC•MACs system, while the outputs of the old system are fed into the PC•MACs Programming Console. This takes a few passes, but is usually much quicker than programming a show from scratch.

Once we had the data in the PC•MACs system, we were able to easily 'goose up' the old animation program using the powerful editing tools available under PC•MACs. Watch for the extra 'jokes' we added to the dashboard lights next time you ride this attraction!

MEMORY MANAGEMENT FOR PC•MACs

The following is an updated excerpt from the PC•MACs manual. It is applicable to systems running under both Windows 3.1 and Windows '95:

PC•MACs must be installed on a fairly 'clean' PC system. It is best to install system 6.0+ and Windows 3.1+ using the default settings Microsoft recommends in their installation programs. After the system installation is complete, run MEMMAKER as recommended by Microsoft (tell it you are not running any EMS programs). This will set up all the TSR software that needs to run in the high memory to its optimum positions.

After running MEMMAKER and exiting to DOS, you can then run MSD.EXE to look for an unused block of memory where the hardware and software should be installed. Using the 'MEMORY' command, you should see some 'free UMBs', or 'Available' memory where you can address PC•MACs. Typically this is at EFO0h through EFFFh.

Exit MSD and add the notation 'X=EF00-EFFF' to the end of the extended memory driver command lines in your CONFIG.SYS and SYSTEM.INI files. The easiest way to do this is to go back into Windows and run 'SYSEDIT' (this extremely useful program comes with Windows).

The CONFIG.SYS line should read something like 'DEVICE=C:\DOS\EMM386.EXE NOEMS X=EF00-EFFF'. This will theoretically lock out DOS programs from using these memory locations for anything else.

In the '[386Enh]' section of the SYSTEM.INI file, you will need to add 'EMMEXCLUDE=EF00-EFFF'. This will theoretically lock out Windows programs from using these memory locations for anything else.

Reboot your computer.

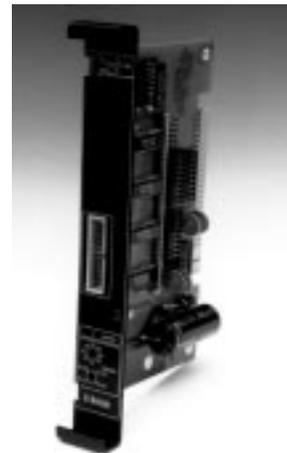
Now if you run MSD, you should definitely see the area as 'Available'. After you have installed the PC•MACs SMPTE card (turn off the computer first!), you should see what MSD thinks is a block of 'RAM' at the bottom of this reserved area of memory.

MSD can also be used to find what interrupts are available to you. PC•MACs needs only one, and has been successfully run using either number 5, 10 or 11.

As with most things in the PC world, MSD will only display the conditions when it is running. It will often display erroneous results if you are going to load other software and hardware later.

UPDATED Z-BRICKS

Another redesigned product we will be showing at the 1995 IAAPA convention in New Orleans is a new Z- Brick Card. This is the simplest and least expensive type of 'Brick' card we make.



Typically the Z-Brick is used with an Analog Smart Brick or Smart Electronic FeedBack (EFB) card. These feed it eight bits of data and address along with a strobe that tells it when to latch. This data comes from the DMX-512 being sent to the Analog Smart Brick or Smart Electronic FeedBack (EFB) card or from the onboard data EPROMs.

This design is so simple and straight forward that it has also been used by some of our clients when they want to bridge between their own in-house or outdated animation systems and ours.

ANIMATION AND SOUND FOR PARADES

Many of the parades you see at major theme parks have floats that carry onboard sound systems, animated figures and millions of flashing lights. These are perfectly synchronized to the sound coming from the fixed speakers along the parade route. Doing this isn't nearly as complicated or expensive as many people assume.

The key to such a system is the synchronizing signal. Smart Brick Animation Control Systems and our AB/DR-3000 series of Digital Audio Repeaters can all be triggered by a SMPTE time code. This is the industry-standard signal that tells everything where in the show it is thirty times each second.

Running wires from a central SMPTE source to a bunch of parade floats is usually impractical. For this reason, a single radio transmitter sending the SMPTE time code to a receiver on each of the floats is needed. Luckily, these are available from a number of different manufacturers. Since SMPTE is an audio signal, 'wireless microphone' transmitters and receivers can be used. For higher reliability, a 'wireless modem' should be used. Wireless modems are available that use 'spread spectrum' technology, error correction and feature ranges of several miles.

If all that is needed is synchronized sound from a float, the equipment on each float can be as simple as a single AB-3000 Digital Audio Repeater (along with suitable amplifiers and speakers).

If Animation Controls are needed, all that you need to add is one Smart Brick Brain and one or more Smart Bricks. The number of Smart Bricks is determined by the requirements of your figures, lights, and whatever else the Animation System will be running.

With the Gilderfluke & Co. Sound and Animation Control Systems, it is easy to add multiple shows to your parade. Our systems decide which show they are running based on the SMPTE 'hour' they receive. If the 'hour' changes, then the Animation and Sound Systems will follow. This allows you to run a separate show while the parade is moving to a scheduled show location, then switch to an entirely different show once it gets there. Smart Brick Systems and AB/DR-3000 Digital Audio Repeaters can support up to 255 different shows.

This technique also can be used in theatrical applications when you run an animation or lighting piece that can't have any wires attached.

APPLICATION NOTES

We are often asked to help our clients with specific projects and questions. If we get asked for the same question more than a few times, our 'stock response' will usually evolve into an 'application note'. The subject of these range from "How to hook up pneumatic cylinders" to "How to build a simple programming console" to "How to attach an animation system to a remote control".

Who knows, even if your application seems pretty bizarre, we may well have the answer in one of our application notes. Just give us a call to find out.

NewMicroConsole..continuedonpage:

be displayed as Decimal, Percentage, or Hexadecimal numbers.

- Sturdy all-aluminum case with sealed membrane switch panel front. Not only is this new MicroConsole smaller than the old one, it is a lot tougher!
- Using the serial port and a modem program on any PC or Macintosh, the new MicroConsole can download, restore and verify a single eight bit channel or all four together. Replaces the IBM Backup box.
- Attaches to PC•MACs just like the full-sized programming console. All the regular features of the PC•MACs Programming Console are available. Any number of preset configurations can be saved and named for instant recall whenever they are needed.
- Attaches to any record/playback Micro MACs or Smart Brick Animation System through their J6 input and output cables. Data can be passed through and monitored or modified as needed.
- Can intercept and retransmit any 256 channel stream of DMX-512 data. Any selected channel can be modified to manipulate whatever is being controlled by the DMX-512 signal. In this mode it can even be used with lighting controllers and dimmer packs from other manufacturers.
- Powered from an included wall wart transformer when used with PC•MACs Systems, or draws its power from the Micro MACs or Smart Bricks being programmed.
- Retains configuration settings in nonvolatile EEPROM memory when not in use.

PCMACsdoesWindows95..continuedonpage:

this is not the sort of behavior you want to see in the field. A MACs-SMP EPROM upgrade will help fix this.

For those of you out there who followed the original development of PC•MACs, you will recall that we first tried to implement it under Windows 3.0. This version of Windows was just too flaky to allow a real-time system like ours to run reliably. We had to wait for Windows 3.1 before we could release the original version of PC•MACs.

We will continue to search for work-arounds to the problems we have encountered in Windows '95, and will release software updates as they are made.

OUR TWO MOST ASKED QUESTIONS

In the dozen or so years we have been in business, the second most commonly asked question is where our company name came from.

Eli Gilderfluke was a cartoon character who appeared in railroading trade magazines in the middle of the 19th century. More or less a precursor of Rube Goldberg, he developed strange inventions for steam trains. These were things like a big scoop to catch the exhaust coming out of the smoke stack and feed it back into the engine's firebox.

The answer to the most commonly asked question is: *'No, we don't build animated figures.'*