AUDIO HORIZONS

New Ideas In Professional Audio From Martinsound

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Helping You Stand Out

Flying Faders: The Untold Story

On June 14, 1999, the clock ran out on AMS Neve's exclusive control

by Joe Martinson - President of Martinsound

As Chief Technology Officer Joe works hard to keep cutting edge technology friendly.

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Products mentioned in this article:
Flying Faders
Article summary:
The development of Flying Faders. Key events, insights, and people that shaped the leading moving fader automation system.

of Flying Faders marketing, freeing Martinsound to sell, manufacture and improve the system independent of Neve. Since December 1998 marked the tenth anniversary of the delivery of the first and second Flying Faders™ fader automation systems to Powertrax Studios in Hollywood and Groovemasters in Santa Monica, I thought it might be fun to tell the Flying Faders story.

Looking back at the ensuing years, we are very pleased by our customers' continued enthusiasm for Flying Faders. As President of Martinsound, I want to give credit to some to the key individuals who labored for years to take the hassle out of automation. Now, you have a chance to get to know the history and people of the Flying Faders *Just Mix* development team.

The foundation of the Flying Faders system was actually developed during Martinsound's work on a virtual console with digitally controlled analog, similar to today's Euphonix consoles. As a development tool we built a 32-channel control surface with moving faders, LCD displays, digital rotary pots and a wonderful high resolution video display. Our work on VCA and MDAC gain control devices gave us the tools for building digitally controlled equalizers and signal routing.

The first person I hired for the project was Dale Manquen, a tape recorder designer best known for

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Just Mix

In the beginning the Powers-That-Be in Japan said, "Let there be VCRs."

And VCRs appeared. And they were ingenious for they allowed a person to record their favorite TV program and then watch it at a more convenient time. And the Powers-That-Be in Japan said, "It is good." But the people complained saying, "What if we aren't home to press the record button when our favorite program starts?" And the Powers-That-Be in Japan said, "Let there be timers." So the designers installed clocks, programmable timers and channel changers into the VCRs. And the Powers-That-Be in Japan said, "It is good." But the people whined

by Shawn Micheal - VP of Product Development

Shawn has been intimately involved in the development of Flying Faders, The MSS-lO, MultiMax and ForMAX.

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saying, "It's too expensive." And the Powers-That-Be in Japan said, "Let the price fall."

So the designers removed anything and everything that wasn't necessary in order to drop the price. And the price plummeted. And the Powers-That-Be in Japan said, "It is good." And the people bought millions of them. But when they got their VCRs home they realized that it was next to

Products mentioned in this article:
Flying Faders

Article summary:
Bad design makes ugly technology. How our Just Mix philosophy makes Flying Faders a joy to use.

impossible to program their inexpensive VCRs, let alone set the clock. So they just pressed the record button when their favorite show came on or didn't bother to record it.

But the people didn't complain, because they had been given exactly what they had asked for! And the Powers-That-Be in Japan said, "It is very, very good."

Is Productivity Dead?

In the last issue of Audio Horizons I considered if quality audio is dead. Now

by Joe Martinson - President of Martinsound

When Joe isn't throwing stones at poorly designed pro audio products, he enjoys spending time with his wife Annette and 6 year old son AJ.

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I would like to question whether productivity in audio is dead. Easy to use equipment is an endangered species. An industry that once prided itself for efficiency and productivity is being buried alive with difficult to use equipment, under the guise of heavily featured, low priced products.

Is the next generation of users doomed to spend their time fighting virtual work surfaces that slow every move? The engineer of yesterday could move from console to console and tape machine to tape machine with ease because of the similarities between them. Today's engineer is faced with incompatible file formats, inconsistent nomenclature, and control layouts that are wildly different from product to product. Add on top of that confusing layouts, multiple layers of menus, and controls that do one thing one minute and something else the next. Can a mouse and a CRT ever make a really good replacement for a console's mixing surface? About as well as substituting a QWERTY keyboard for the keys on a piano. Will a pocket protector, taped glasses and a degree from Cal Tech become the requirements for future audio professionals in place of artistic vision? I sure hope not.

Don't get me wrong. I love technology. But the application of it should be for the purpose of making creativity easier and turning out a better product, not to simply add more features per dollar. Low cost audio equipment has its place. It makes it affordable for anyone to churn out product. Just as MP3 and the Internet allow everyone to be a record company. But occasionally I enjoy listening to great material, masterfully done on the finest equipment, created by the Pros.

The true audio professional requires more than most semi-pro equipment can provide. Poorly designed or unintuitive products make a pro look bad. That's not a good career move. Sometimes all that's wanted is a good sounding, medium length reverb; not 1,500 buried parameters that try to make a bad reverb useable! Even small amounts of wasted time caused by irritatingly hard to use products will sap those creative juices. Does your equipment help you get your juices flowing, or do you dream of setting fire to it and collecting the insurance money?

To understand what it takes to make a great user interface we need to take a look at controls. Equipment has controls to modify its behavior. A control has a value that can be changed. The value varies some function that affects the way the equipment works. An input device is used to change the value. A display should be provided so that you know the control's current value and how that setting changes the function of the equipment.

A few decades ago life was pretty simple. Most controls on audio equipment were limited to switches and pots that directly changed how the unit functioned. These types of controls typically store the value mechanically. The input device also acts as the display so you can instantly see the current setting. Since the function is integrated into the control, each control has a single purpose and directly changes how the unit functions.

A good example is a simple audio fader. Its function is to change the level of a signal and it does this by directly attenuating the audio. You move its knob up or down to make changes and then look at the knob position to know how much the sound is attenuated. Now let's play design engineer and make it more sophisticated (complicated). Instead of running the audio though the fader, we will use a Voltage Controlled Amplifier (VCA) to perform the attenuation function. The fader now outputs a voltage that represents its position or value that is sent to the VCA. The fader still acts as the input device, display, and control, but the function has been removed to the VCA.

If we connect a computer between the fader and the VCA, we can build an automation system that allows changes on the fader to be stored and then replayed. The fader is still an input device and display, but the control has been removed to the computer while the function occurs in the VCA.

During replay, when the computer is changing the voltage sent to the VCA, the fader knob is no longer displaying anything useful. Devices that display incorrect control values are called lying indicators and are very confusing. Since the display on the input device (fader knob) is wrong, we need another display, like a computer monitor, to give visual indication of the current control value.

Now it's time to make a change to the control values stored in the computer. We will replay the values in the computer and use the fader to make changes. At the point where the stored value is to change, the value in the computer can do one of two things. It can jump to the current fader position and then store the absolute fader value as the fader moves during the update, or it can add/subtract any relative changes made to the fader from its initial position, once the update begins. One means that the fader knob displays absolute information, the other means that the fader knob displays relative information. But the computer display will always reflect the absolute VCA control value.

The awkwardness of this kind of automation led us to conclude in the mid 80's that the future of console automation demanded motorized faders. With a motorized fader, changing the control value either by the user or the computer requires changing the fader position; therefore the knob position display never lies. The need to put control values on a computer monitor is gone. What you see is what you get. Touch enabled updates on the moving fader can make stored changes easy and natural. But it turned out to be a lot harder to make a great automation system than just using a moving fader. Years of effort went into creating and implementing the *Just Mix* design philosophy featured in our Flying Faders automation system. That is why it has been known for over a decade for its power and ease of use.

Once a control value is removed from its input device and lives inside a computer, the whole world can change and not always for the better. With the control value disassociated, the same input device can be used for many functions, much like the mouse on your computer. This is a

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In This Issue

Notices

MSS-10 Eases Tracking and Mixing

The Martech MSS-10 microphone preamp is another prime example of the Martinsound *Just Mix* design philosophy. The MSS-10 earned its *Natural Sound* description as a result of many months of evaluation and extensive listening tests down to component level.

It has been designed with a sonic neutrality and resolution that earned it a nomination for the 1998 TEC Award for Outstanding Technical Achievement. But what it offers in practical terms is a microphone preamp that takes the hassle out of recording.

We have produced a report on the MSS-10 and Natural Sound. It presents Martinsound's *Natural Sound* and *Just Mix* philosophies and demonstrates how they converge in the MSS-10 mic preamp to simplify the engineer's job at every stage of the recording process. The report explains why the unique natural sound and musicality of the MSS-10 have made it a favorite of many world class engineers and mixers.

To understand more about how the MSS-10 can make a difference to your next session, contact Martinsound and we'll send you a copy of our report, entitled *How the MSS-10 Takes the Hassle Out of Tracking and Mixing.*

Engineers are discovering that during both tracking and mixing they no longer have to waste time correcting the sound of a mic preamp that introduces its own character and coloration to the source being recorded. They have discovered that the naturalness and lack of coloration of the Martech MSS-10 makes their job much easier and allows them to concentrate on the big picture.

One such engineer who has discovered how Natural Sound and the MSS-10 can make a huge difference is Andy Smith. Smith has four MSS-10s which he has been using on the new Paul Simon studio project and for the recording of the recent extensive, nationwide collaborative tour by Simon and Bob Dylan. The MSS-10s have been used extensively throughout both recording projects, particularly on the recording of Simon's and Dylan's vocals and guitars. Look for more information from Martinsound on these projects when they are completed.

Smith is a relative newcomer to the MSS-10 , as is Ricky Lawson. Lawson is a drummer, producer and engineer based in southern California. A founding member of the Yellowjackets, Lawson left the band for a busy career as a session drummer with artists like Stevie Wonder, George Benson and Paul McCartney, and has also toured with Lionel Richie, Michael Jackson, Phil Collins and Steely Dan. Lawson uses his MSS-10s in his project studio, and plans to utilize them on the forthcoming Kenny G album sessions and a Steely Dan PBS special planned for late 1999.

We'll be bringing you Ricky's comments on how the MSS-10 has taken the hassle out of recording for him in our next newsletter.

Legendary engineer Al Schmitt uses the MSS-10 all the time to capture the sound of world class artists. Ask him what he thinks of the MSS-10 and he'll tell you, "I have certain preamps that I like a lot: I use the Martech a lot." Schmitt describes the performance of the MSS-10 as "killer" and "fabulous."

A 7-time Grammy Award winner and inductee into the 1997 TEC Awards Hall of Fame, Schmitt has used the MSS-10 on vocals, individual instruments, and on orchestras and choirs. He has used the MSS-10 to record Vince Gill, Johnny Mathis, Diana Krall and Monica Mancini. He has recorded Johnny Mandel's orchestra with MSS-10s and he has used them on scoring sessions for movies like Hope Floats.

Another big fan of the MSS-10 is renowned producer, engineer and mixer Bruce Botnick. Botnick has put his Martech MSS-10s to work on many scoring sessions, including the animated motion picture Mulan, Small Soldiers, and The 13th Warrior. He has recorded and produced over 60 motion picture soundtracks including Aladdin, Air Force One, L.A. Confidential and E.T. - The Extraterrestrial. Botnick works frequently with composer Jerry Goldsmith on his scoring sessions, and says, "What is important to me is that the musicians like the way the MSS-10 sounds. I like that; it tells me that the tools I am using are good."

The Grammy Award-winning producer has been presented with over two dozen gold and five platinum disks since beginning his career in the early Sixties, when he recorded many successful albums by bands like The Doors, Love, the MC 5 and Neil Young's Crazy Horse.

If you would like to join the distinguished group of engineers, mixers and producers who are discovering how the MSS-10 takes the hassle out of tracking and mixing, please contact us and we'll send you a copy of our report plus detailed information on the Martech MSS-10 microphone preamp. Contact us by phone or fax, or visit our website for further information. ▨

MultiMAX & Surround Sound Profits

Adding MultiMAX to your existing mixing console will save you big money.

by Steve Harvey - Audio Horizons Editor

Steve is public relations director at Martinsound and editor of this newsletter.

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Products mentioned in this article:
MultiMAX
Article summary:
How MultiMAX overcomes the limitations of your existing console and enables confident production of surround sound mixes in many different formats.

Many consoles simply do not include the features necessary to successfully produce surround sound projects. But rather than replace the console, or pay for costly upgrades or custom-engineered solutions, you can simply add MultiMAX. The powerful and unique features of this inexpensive solution allow you to handle the complexities of surround sound monitoring on your console by augmenting its stereo monitor section, preserving your investment in the console and speeding up the mixing process.

MultiMAX has been designed to integrate with your existing stereo console to add monitoring in 8-channel surround, 7.1, 5.1 and LCRS, with precise level control of multiple speaker systems, and comprehensive solo, mute and dim control. All of the controls are right there at your fingertips; and if you don't have space for a 1U box close at hand, perhaps the optional remote can be positioned more conveniently. The remote is available as a standalone unit or in a version that can be custom-fitted into your console or other work surface.

But MultiMAX offers much more than simple level control. It offers selection and monitoring of the signal at any stage in the mixing process. It allows you to perform quality control checks throughout the signal chain, all at the push of a button. With MultiMAX integrated into your studio you can return the patchcords to storage – everything is now just a button push away.

MultiMAX allows you to monitor the mix buses or the mix recorder. You can insert any matrix encode/decode processor and monitor before and after processing. You can monitor the 2-channel Lt Rt (2-channel matrix-encoded) output of the processor, or listen to an Lo Ro (standard, un-encoded stereo) downmix.

The front panel (or remote) buttons all feature LED indicators, providing the engineer with a clear idea of the signal flow at a glance. The 'wide' inputs (8-channels each) consist of Direct (console buses), Playback (recorder returns), and three Premixes – a total of 40 inputs. A single switch selects between Direct and Playback for quick and easy comparison of the buses and recorder returns. A new software revision allows all five 8-channel inputs to be selected in any combination, or one-by-one in 'interlocking' mode.

A quick glance at the panel will tell the engineer what sources are being monitored. It can be the sum of the selected wide inputs, the return from the decoder (up to 8 channels), a stereo source (Lt Rt or Lo Ro, for example), or even the console. You need to be able to retain your console's mute, dim and solo (PFL/AFL/APL) features, and MultiMAX allows you to monitor these functions through a

single button push. Rear panel connections further simplify this feature: you can interface the console mute, dim and solo logic lines to MultiMAX to provide automatic selection of those functions - regardless of the monitor system format currently in use - when they are selected at the console.

There's also a switch to introduce the production track. This is useful in scoring sessions where you want to monitor the track but don't want it to get into the mix or recorder sends – and it doesn't use up any consoles inputs.

There are some additional switches in the monitor source section, and it's here that MultiMAX really shines. MultiMAX is the only surround monitor controller currently available to offer comprehensive downmixing in all formats, to insure backward compatibility on any playback system. Your 8-, 6- or 4-channel surround sound mix can be played back in a wide variety of formats on home systems. Some decoder systems recover the Lt Rt matrix-encoded mix differently to other systems, and differently to your original mix. Other systems synthesize a surround mix from the encoded data. You need to be sure that your mix will sound good, regardless of the format in which it will be replayed.

Switches in the monitor source section provide the engineer with the ability to hear the surround mix downmixed to a variety of other formats. MultiMAX provides the complete user-selectable menu of downmix coefficients that are also available to the engineer in the Dolby encoder for DVD production, allowing the auditioning of the results of the application of those coefficients before processing. This permits the engineer to maximize his balance between downmixed and non-downmixed sources. An LFE filter can also be selected to simulate the DVD-Video and DTV encoding process.

MultiMAX also provides summing coefficients to ensure the correct downmixing of levels when monitoring a 5.1 mix in LCRS format, for example, or a multichannel surround mix in stereo or mono. These coefficients take into consideration the difference in surround channel levels between motion picture theatrical release mixes and video or music mixes to correctly sum the surround channels for playback on systems with fewer speaker channels.

Some monitor control systems can take all day to set up. That's fine if you can bill the client, otherwise it's a day of lost revenue and a potentially frustrating day for the engineer. With MultiMAX you can be ready for your session in next to no time, without any

Make your existing console a surround powerhouse

complications. The easy-to-read LCD and great sounding MDACs allow precise, repeatable setups of the system. Configuring the system for the session is a simple matter, with easily accessible setup menus and clear graphics. The mute, dim and speaker solo functions interact to make the setup of the monitor system a breeze. You can calibrate your speaker systems using the built-in pink noise generator and individual level trims. The LCD SPL readout can even be customized to reflect the operating levels at which you normally work.

MultiMAX will control four separate speaker systems, plus an alternate set of surround speakers so that you can easily switch between direct radiating and diffuse, depending on the soundfield that you require. The monitor system currently selected is clearly indicated by an LED, as are the individual channels selected within each system. The setup menu allows the redirection of low frequencies from any channels that are using limited bandwidth monitor speakers to channels equipped with full-range speakers, or a subwoofer.

Contact us now for more information on MultiMAX and as a bonus we'll send you a report on the secrets of doing surround sound on your existing stereo console. ◤

Learn Surround Secrets For Free

We want to send you a free report revealing some of the mysteries of surround sound production. Contact us by phone, fax or e-mail and we will send you a copy of *The Secrets of Doing Surround Sound on Your Existing Console.*

Your mixing console is probably the most expensive item of equipment in the control room. Our report offers some suggestions on how to use your existing stereo console to produce surround sound mixes without it costing you a fortune in modifications or custom electronics, simply by augmenting the console's stereo monitor section with a monitor controller.

The report offers tips on how to work around what you may perceive to be the shortcomings of the average stereo console to successfully produce surround sound projects. It discusses the features that you should look for in a good surround sound monitor control system, and provides some basic advice on setting up for your first surround mixing session. It also looks at the most commonly used surround sound formats, and even looks back at the history and development of multichannel sound.

Contact us today and we'll also send you information on the MultiMAX, the comprehensive surround sound monitor control solution from Martinsound. ◿

Each MultiMAX Is Rigorously Tested

by Mike Somers - Engineering Manager

When Mike moved with Neotek to Martinsound, his collection of vintage tubes, transformers, amps and speakers filled 5000 square feet of our warehouse

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Products mentioned in this article:
MultiMAX, ForMAX

Article summary:
The testing system was designed and built to thoroughly test each and every MultiMAX we ship.

While MultiMAX was still in development the need was recognized for some means to reliably and quickly test each end product. While there are only 28 front panel switches, internally there are over 100 complementary FET switches controlling 55 inputs and 38 outputs. There are many combinations that belie the intuitive front panel operation. It was obvious that manual testing would require costly testing time, with the potential for testing errors.

What was implemented is a system that requires the technician only to hook up the unit, start the test, and enter the serial number. As the test is running, a report is automatically generated and saved to the system. This historical data also assists in tracking the unit and verifying that component tolerances are being met. Any failures that occur halt the test and the failure is recorded. This allows any

repairs to be performed in the future, while not interrupting the testing of other units.

Our testing system consists of an Audio Precision Analyzer (with the Windows Interface) and a custom proprietary signal routing box that communicates with MultiMAX over RS-232 serial lines. Using this system, an entire MultiMAX can be tested in less than 10 minutes (a fraction of the time that would be required to manually perform the tests), with complete confidence in the results. This system has also been designed to be able to test other products such as ForMAX, an input formatting unit.

We perform a wide range of tests on all of

the signal paths, including frequency response, THD, noise, maximum input and output levels, and accuracy of the level control and trims.

The internal pink noise generator is then calibrated and checked for flat frequency response. After the unit has passed the audio tests, the hi-pot and ground bond tests are performed to ensure compliance with safety requirements (e.g. UL and CE). We expect our professional audio equipment to excel in all of the above tests.

Thanks to the incredibly detailed testing and conservative design, you can be assured a long trouble-free life from MultiMAX right out of the box and for years to come. ◿

MultiMAX EX
Option for Dolby Surround EX™

Just when we thought the design of MultiMAX was finished, along came the new Dolby surround format that adds a rear center surround channel - Dolby Surround EX™. We now offer an upgrade for MultiMAX that can fully control the additional rear channel. The modifications utilize part of the circuitry that is normally available for the Lc and Rc channels in 7.1 formats. The setup menus allow selection of either Surround EX or 7.1 mode, but not both modes simultaneously

Euphonix offers MultiMAX

Euphonix has announced that MultiMAX will be offered as a factory option on their CS3000 consoles.

ForMAX

If a project comes in the door with a track layout that doesn't conform to your standard, you can rewire or repatch; but what about the client coming in tomorrow?

Its impossible to quickly accommodate non-standard channel assignments and multiple surround formats with connector panels and patchbays. Although some formats have fixed channel assignments, busy facilities need a more flexible way to connect consoles and recorders to MultiMAX.

Recognizing the realities of surround sound facilities, Martinsound introduces ForMAX, a Surround Monitoring Formatter.

ForMAX, a companion product to MultiMAX, is a simple and cost effective way to instantly reassign any mix bus, or its associated track, to any of eight monitor positions. With 24 mix bus inputs and 24 recorder return inputs, ForMAX gives you individual Direct/Playback selection for each input of the 24 In by 8 Out crosspoint summing matrix.

Up to five ForMAX units can be connected to Multimax for a total of 120 Direct and 120 Playback inputs! The LCD display shows all of the assignments, as well as providing access to the various Setup Menus. You have the freedom to create, store and instantly recall many different Formats, Reassignments, and Setups.

Adding the optional ForMAX Paddle Switches to your console and the Machine Control Interface to your recorders creates a full featured dubbing console monitor system. The Record Paddles and their associated Direct/Playback Paddles can operate individually or in user assigned groups. Advanced Mute and Solo features are included,

providing exceptional functionality.

Whether formatting a multichannel mix, or monitoring several submixes or stems simultaneously, ForMAX makes it a snap. Combine MultiMAX with the power and control of ForMAX and you have a superior 'picture mixing' solution that costs far less than the competition.

RMS

The Recorder Monitor System provides confidence monitoring of an array of multitrack recorders and reproducers. Several post production facilities have added the RMS Recorder Monitor System to their machine rooms. The system can provide monitoring of Input, Sync and Repro signals for up to sixteen 8-track recorders.

Installations at Disney, Todd AO Bundy, and Universal Studios include the new RMS remote control. The remote control permits access and control of all machines in the system from a single 3 1/2" by 19" portable panel.

The built-in programmable digital sinewave and pink noise test oscillator functions are so useful that our customers asked us to make a buffered version of the test signals available for external applications.

This new Oscillator Buffer option provides a balanced oscillator output that is available even when no tones are being fed to the recorders attached to the RMS.
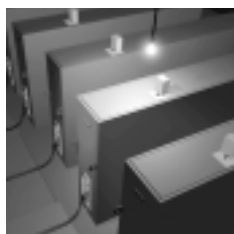
MicMAX
An Affordable Alternative

Not everyone has the budget to buy premium quality mic preamps like the MSS-lO. An affordable alternative with excellent value is the Martinsound MicMAX. Many Neotek customers requested a stand alone version of the great sounding mic preamps of the Neotek Elite console. The MicMAX dual mic preamp offers all of the great sound of the Elite, and adds a few extra features. Selectable input impedance, a LED gain readout and a multi-color signal amplitude bargraph complement the excellent sound of the direct-coupled, fully balanced input circuitry.

EMT™ Upgrades

How quiet is the Martech EMT-140 Electronics Upgrade? A technician at one of New York's largest studios recently installed a kit on

one of their plates. When he was done, he went to the control room to listen to the results.

He cranked open the monitor but didn't hear any residual noise from the plate. "Must have done something wrong," he thought. "But just in case, I'll throw a coat hanger down the hallway leading to the EMT plate." He heard *clang, clang* in the monitor; everything was working just fine, yielding an incredibly low noise floor. The dynamic range of the circuits in the EMT Upgrade is greater than 130 dB at 1 kHz!

The popular Martinsound EMT Remote Control kit is fully compatible with the old EMT controllers, so units of old and new vintage can be used together.

New Standard Post uses MultiMAX

"It's all about control and flexibility," says Scott Wood, Chief Engineer of New Standard Post, a new facility located in the heart of Hollywood's post production community. Wood states, "The MultiMAX provided an easy, reliable solution for monitoring surround in many formats." MultiMAX is the only surround monitor controller to offer comprehensive downmixing in all formats, ensuring backward compatibility on any playback system.

MultiMAX provides control of the industry-standard JBL 4675 speaker systems on New Standard Post's 2 large dubbing stages. Pro Tools workstations are installed throughout the facility, which includes an ADR suite and 4 (soon to be 12) edit rooms, all linked with a high-speed network. The facility, which opened in February 1999, has been very busy with a host of independent features, plus new TV series *The 101 Deeds of Eddie McDowd.*

Trax East gets an Elite II with Audiomate

"The Elite sounds fabulous; great mic pre's and EQ," says Eric Rachel, owner of Trax East Recording Studio, located near New York City in South River, NJ. The studio recently installed a Neotek Elite II 32-channel in-line console with a 64 motorized faders Audiomate system fitted. Rachel chose the Elite II for the sound: "And it has more than met our expectations," he notes.

The Elite II is a 26-bus in-line console, with 2 stereo and 24 multitrack buses. It offers audiophile quality mic preamps and a flexible dual channel architecture that combines the ease of in-line monitoring with many routing possibilities. The filter, insert, EQ and aux sends may be separately assigned to either path.

The Power PC-native Audiomate software is very intuitive, making it the first choice for many engineers. It provides 10 bit resolution (1024 steps) and quarter-frame accuracy. The sophisticated software offers channel and global operational modes, fader and mute grouping, snapshots, cue list, machine control and comprehensive off-line editing functions, yet is easy for even the first-time user to operate. Martinsound is the exclusive U.S. distributor for Audiomate. ◢

When You Need Tech Support

It's a Technical Jungle out there. Every day a new piece of gear, another software program, a new audio format - the learning curve for life just keeps getting steeper. As Customer Support Specialist for Martinsound, I understand the anguish caused by technology infringing on your creativity when things don't seem to work right. Fortunately we have a long track record of building reliable equipment, which makes my job a lot easier. With less time spent on putting out fires, we can concentrate our efforts on researching customer needs and making better products.

I personally work both sides of the equipment, as a user and technician, and I spend a fair amount of time in the field, involved with real world product applications. I also have the advantage of working with the design engineers when new products are under development. So whether you have Flying

by Richard Zeier - Customer Support Engineer

Richard is a music technologist who spends countless hours composing and producing film scores for yet to be written scripts. Look for a CD released in 2000.

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Faders, a MultiMAX, a Neotek console or one of our other many fine products, I'm here to help you get the most from your studio system, and keep you a satisfied Martinsound customer. ☑

A Team Welcome

During my long history here at Martinsound, I have come to know many of our customers on a personal basis. Now as the Vice President of Operations, I hope to have an even greater opportunity to make your association with our company a profitable one.

My mandate is to create an exciting atmosphere within Martinsound – a place where we continue to develop amazing new products, deliver these in a timely fashion, and provide the service, support and quality, professionals have come to expect of professionals.

As such I invite all of you to join the Martinsound team. Your input is invaluable to us and I need to know when we've been able to exceed your expectations and when we've fallen short. While I myself am excited about our 'Philosophy of Continuous Improvement', it does no good if it isn't reflected in our products and services.

So you have my pledge, we will work hard

by Bill Stein - Vice President of Operations

When Bill isn't busy keeping customers happy, he has found time to date, marry and have a child with our former receptionist Danette. Their new baby boy is Noah Daniel. Congratulations. Talk about taking work home.

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Martinsound Is On The Web

Join The Flying Faders Users' Group

As part of the effort to build strong relationships with our customers and prospects, we are expanding Martinsound's online presence. The Flying Faders Users' Group is a free resource for owners and users of Flying Faders, and members of the Flying Faders development team will continue to play an active role in the users' group. The Web-based service provides news on hardware and software topics that are of interest to studio owners, recording engineers and technical/maintenance staffs.

Found on the martinsound.com website, the Flying Faders Users' Group features archives of all Users' Group newsletters, bulletins, and an enrollment form for joining the Group.

Sign Up For Martinsound E-News

We are about to launch an email supplement to this newsletter delivering timely news and information of interest to demanding audio professionals. Subscription is free and can be easily stopped at any time, so whether you are making purchase decisions, sharpening your skills, or just staying in touch we invite you to sign up by filling out and returning the response card, calling Martinsound, or sending email to chris@martinsound.com.

http://www.martinsound.com/ffug.htm

http://www.martinsound.com

Visit Us On The Web

www.martinsound.com is a great way to find out about Martinsound products. We are currently adding detailed technical information in PDF format for many Martinsound products. Included will be block diagrams, connector pinouts, interfacing schemes, physical dimensions and application information. ☑

ACX Expands Flying Faders Consoles

When we introduced the ACX Automated Console Expander, we didn't realize how unique this product really is. Many of our clients are now fully committed to the concept of expanding their existing consoles with our versatile Flying Faders equipped sidecar. The first installation took place over a year ago at Todd AO's Radford Scoring Stage in Studio City, CA. Their ACX has earned a solid place in the control room and is now used on virtually every session.

They frequently move the ACX off to the side for the composer to use for mixing his synth guide tracks. The automation ties the composer's cue track mix to the live tracks without burdening the scoring console and scoring engineer.

Dark Horse in Nashville has built an ACX into a permanent extension of their Trident 80 console,

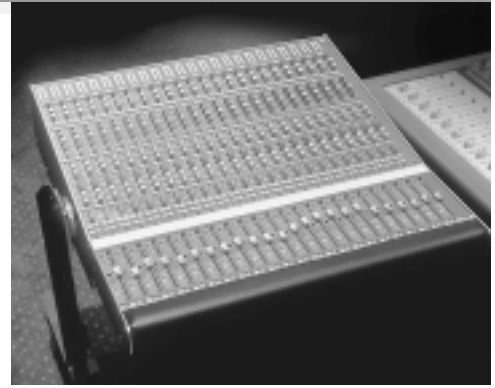boosting it from 48 to 72 channels.

Village Recorders has 3 studios equipped with Flying Faders. The small size of the ACX permits them to expand consoles that fill almost the entire width of the control room. Space limitations prevented adding more buckets on the VR console .

Signet Sound has 3 Neve V-Series consoles that were frequently expanded by renting an ACX from Martinsound.

Cherokee Studios has a Trident A-Range console equipped with Flying Faders and expects to add Flying Faders to their other A-Range. The versatility of the ACX was a key factor in their choice. They also are considering using the ACX with a Flying Faders computer as a stand-alone automated sidecar to expand their GML-equipped third console.

On the east coast Sound One has brought in

ACXs for *Snake Eyes*, *Men in the Moon* and *Sleepy Hollow* while Sony Music expanded for Sean Murphy's recent stint there. ◣

Continued...

Just Mix from front cover

We have all joked and laughed over the flashing clock on many people's VCRs. But think about it. It's really not a laughing matter. What we are evidencing is extremely poor design. Design that makes a device affordable even if it's barely useable. When an average citizen is incapable of setting a clock (we're talking about a clock here!) it demonstrates the complete breakdown of all design principles.

Likewise, when a device that is meant to shorten your workload, requires more time to learn, set up and manage than the job it's supposed to accomplish, then the designer forgot what s/he was trying to accomplish.

The three main reasons why people allow technology in their life are greater convenience, precision, and entertainment. If any or all are present then a higher degree of productivity, profitability, and/or satisfaction is accomplished. Productivity, profitability, and/or satisfaction are the main reasons people buy technology.

So what does any of this have to do with fader automation? Well automation is technology! Studio owners understand that the 'Big Boys' require automation for their project to duplicate the moves over and over until it's perfect (productivity). So the perception is that automation is a necessity ('Big Boys' means profitability). But what is not well understood is that automation is as diverse as automobiles... there are Mercedes and there are Yugos (satisfaction factor).

What makes one automation system superior to another? Answer: Simple, effortless control. Mixing should not require a degree in computer science. Think about that VCR clock. How many people would opt to purchase a slightly higher priced VCR if setting the clock or programming the record times were a snap. Currently, high end VCRs can automatically pull the time off the local PBS channel. They can also be simply programmed by punching in a code from the TV guide. People love that. They are no longer

victims of technology, but are power-users. So it is with fader automation systems. All systems move levels up and down, but it is in effortless simplicity that the superior systems shine, making mixing an unencumbered joy and not a dreaded headache.

Back in 1989, Martinsound took fader automation not just to a new level, but to a whole new dimension with Flying Faders. Ingenious computer programming resulted in a product whose many innovative features are still not fully duplicated or even understood by other automation manufacturers. Unlimited Undo and Redo was available on the very first release of Flying Faders. How many other programs of any type give you this feature even today? Another clever feature was taking the ubiquitous offset LEDs one step further and adding the ability to remove that offset with the push of a button. Again, because of programming ingenuity and sophisticated hardware, the fader does not just move from where it's at to where it needs to be, but instead the fader plays the underlying play pass moves while removing the offset across a user specified time interval. These are a couple of examples of the immense thought that went into Flying Faders. But the real strength of Flying Faders is the simplistic and effortless control of its very powerful features. It reflects a design philosophy that we at Martinsound call *Just Mix.*

Just Mix means exactly what it says. Its entire design was built upon the concept that people simply want to mix while having the automation assist them and remember the moves. This is in stark contrast to other systems that require you to operate automation in order to accomplish a mix. This may seem a trivial point, but the difference is profound. With a minimum of instruction, a novice can mix a project on Flying Faders without needing an assistant standing guard to keep him or her from ignorance, idiosyncrasies, inconsistencies and crashes.

Automation in its basic form is simply the

programming of actions for a repetitious chore. It accomplishes the tedious task the same way every time. But fader automation is completely different. Contrary to popular belief in the pro audio industry, the real job of fader automation is to duplicate a mixer's moves, not change levels. In other words, fader automation's primary concern is programming ease! Except for the few moments when a final mix is transferred to the master media, the automation is constantly being reprogrammed. But you don't want to be a computer programmer. You want to mix!

To move you from programmer back to mixer, a major rethink needed to occur on the principles of automation. After decades of mixing lots of phenomenal records with just manual mutes and fader moves, it was ludicrous to assume that engineers couldn't mix without automation. What engineers wanted was the ability to have their moves recorded so that they had a 'second chance' to improve upon what they had mixed. But there is an important distinction here. They don't want to record moves, they want their moves recorded. The first involves learning a whole new process, the second support working in a natural instinctive way.

Learning a whole new process wouldn't be so bad if there was a protocol that manufacturers agreed upon. As there is no such protocol, you are forced to learn from scratch every time you encounter a new fader automation system. This means that engineers tend to gravitate towards what they are familiar with to ensure that they look their best. That is why when Martinsound designed Flying Faders the highest priority was to eliminate any and all unnecessary learning curves.

Three different user profiles were considered to determine what level of complexity and what level of user friendliness would need to be incorporated.

The first profile was the power user. This is the mixer who has extensive experience with mixing and automation. Their knowledge means that

Is Productivity Dead? from Page 2

key tool to make things cheaper. The problem is that this approach destroys anchors. Your mind has the ability to associate things in groups and how they relate to other things. If things are always changing functionality, you lose your anchors and maybe your mind. It's like having a piano with 8 mode keys and 6 note keys. A note key could be middle C in mode one and F sharp in mode two. You know, after spending years using computers, that doesn't sound that bad.

A computer with a mouse, keyboard, and CRT can replace a 20-foot long console control surface. It would seem that having everything nearby would be a real time saver. But they can't fit all 15,000 controls found on a 20-ft console onto a 20-inch monitor. So they layer. Gone are many of the anchors. Now part of the display has to tell you which part of the surface you are looking at. Some designers add a small number of physical controls to augment the computer display and input devices. This can help, but often not very much. Even the big computerized consoles that claim to have dedicated controls to minimize the learning curve wimp out and double up on some functions.

Let's face it, the days of dedicated controls for each feature are gone and they aren't coming back. As the number of features and tracks continue to rise, it becomes unaffordable to make every control visible all of the time. That doesn't mean it's impossible to create easy to use products that have hundreds or thousands of features.

The trick to good design is to understand certain important design rules. Controls can be grouped into two types, configure controls and creation controls. Configure controls are set offline. With these controls you spend more time reflecting on what you want to do rather than doing it. These are set up functions done offline, before you get started.

Creation controls are used in the creation process and require a much higher degree of accessibility. They are used on-line in the heat of battle. Their use is instantaneous as you react to external events. You don't want the brakes on your car to be 3 menu levels down when the car in front of you slams on the brakes. Properly designed equipment favors direct access of creation controls and makes the location and change of the configuration controls simple and clear. Cost is always considered, but not at the expense of usability.

I was discussing these issues with Shawn Micheal, the head of Product Development here at Martinsound. I stated that we had two primary design philosophies: *Just Mix* which entails hassle-free user interfaces and *Natural Sound* which preserves the quality of the signal.

He looked at me as if I were totally clueless and passionately pointed out that he found that the *Natural Sound* of the MSS-lO mic preamp removed most of the hassle of mixing since he didn't have to try and fix the coloration induced by other preamps. It never occurred to me that *Natural Sound* is more than a quality issue, it's also a productivity issue.

Most manufacturers design modern equipment for maximum features and give little thought to productivity. Productivity means that it is user friendly, both from a sonic and audio control standpoint.

Tell me how you feel about it. What equipment do you love to use and what are your pet productivity peeves? My E-mail address is jmartinson@martinsound.com. I would love to hear from you, whether you agree with me or think I'm clueless. It is your perspective that counts. ◣

Joe Martinson
President, Martinsound

Just Mix

their demands on response time and feature sets are high. The need for the automation to conform to their preferred style of working is just as important as its ability to jump through hoops when demanded.

The second profile was that of the mixer with little or no automation experience. This is the person who understands that automation can be of benefit, but is concerned about the learning curve and also appearance in front of the client.

The third profile was that of the non-technical music professional. In other words, the producer who insists on personally tweaking the mix until it's right. This type doesn't want to learn how automation systems work; they just want a great mix. They tend to get a bit unpleasant when the engineer asks them not to touch the console otherwise they will screw up the mix. What the engineer meant of course was the automation.

Fortunately, we had all three types of profiles working in the Martinsound Studios during the development of Flying Faders. Satisfying the power users was easy, because they were willing to wade through unnecessary levels of complexities until they hit paydirt. The mixers who were still new to automation weren't difficult either, because they were willing to learn a system when they saw how much it could help them improve the mix. But those nasty producer types made things maddeningly difficult. They forced us to simplify our way of thinking about automation until it no longer interfered with them achieving their magic in the mix.

It was the producer types that caused the light to go on in our collective heads. Automation cannot create or improve a mix. It can only duplicate a mix so that the engineer and producer can improve upon it. With this in mind, Flying Faders took on a whole new direction. It had to be secondary to the mixing function itself, instead of replacing the mixing function. Automation must enhance, not impede the mix process.

Understanding of Flying Faders had to be ridiculously simple. Controls had to be intuitive with no confusion. Mode and function buttons were placed at the faders to minimize distracting your attention from the mix to a computer screen. Unlimited Undo and Redo was incorporated to eliminate the fear of losing magic. Dedicated offset LEDs were implemented for the first time into a moving fader automation system providing the user with necessary feedback as to what was going on with their mix. The now infamous 'Match' button was introduced, allowing the user to instantly get faders back to the play pass while recording moves. Changes in nomenclature were made to assure a lack of confusion. Clever use of the Mute button allowed the changing or erasing of mutes and unmutes in a musical way right at the fader, instead of constantly resorting to an Edit List. Tools that emulated well-known mix tricks were implemented, such as Global Match to give 'razor blade accuracy' to get back to known mix balances.

More than anything else was the novel approach that with a minimal amount of verbal instruction and the push of a button, an absolute novice could mix with minimal if any difficulty. This was the secret ingredient that turned Flying Faders from an automated mixing system into the *Just Mix* automation system. Through the last 10 years great care was taken to ensure that product enhancements and added features never undermined this basic philosophy.

During this past decade we have observed the success of Flying Faders' *Just Mix* philosophy. With the conclusion of the 10 year marketing agreement with AMS Neve, Flying Faders is back under the control of Martinsound. You can be sure that we are dedicated to not only preserving your Flying Faders investment, but also to keeping you on the cutting edge.

We have had many internal discussions on how we can make *Just Mix* even easier and more powerful, and I can say with confidence that the automation revolution launched by Flying Faders in 1989 is going to see profound evolutionary advancements over the next few years.

These changes will cause the entire audio industry to rethink the real purpose of automation and to realize why most automation is such a pain. The goal of *Just Mix* is to make mixing with Flying Faders a lot easier than setting your VCR! ◣

Continued...

Flying Faders: The Untold Story *from front cover*

the 3M Model 56 16-track recorder. Dale came on in 1985 as a consultant. Dale would later join the company full time and served as Product Manager for Flying Faders for over a decade. I first met Dale in 1972 when he was a Product Manager at Ampex for the MM-1100 Multitrack recorder. I purchased one of the first MM-1100s and went up to Redwood City to pick it up in a VW Microbus, being too poor to pay for freight.

Dale helped load the machine and then helped push-start the Microbus (it didn't have a starter). Needless to say, I made quite an impression! Despite first impressions, Dale befriended me and was kind enough to spend time mentoring me. I took his tape recorder class over 20 years ago and it was a life-changing event. Dale is still teaching. His tech training classes at California State University, Northridge are outstanding. EveAnna Manley tells me that Dale's classes are the best thing that ever happened to her techs.

In the early days, Dale worked on many forms of input and display devices, including 'tank tread' endless belts, motorized rotary pots, and motorized linear faders trying to find the perfect input device. We knew that the user friendliness of the controls could make or break the virtual console project. We finally selected the motorized or moving fader as the perfect input device because it acted as both the control and the display.

Previous motorized fader designs had a bad reputation for feel and reliability. We went through almost a dozen different designs before we settled on the version used to this day in Flying Faders. We wanted to have good access to the motor and drive cord so we put all of the drive components on the side of the fader rather than inside. We experimented with several types of drive cord before choosing a unique cord that has a glass core for long-term stability. (Even the early prototypes are still 'up to spec.' after 12 years.) The manufacturer of our motors kept pushing us toward their least expensive motor, which has since become popular with other fader vendors. We stuck with a larger motor with a much stronger shaft and an expensive ball bearing rather than a sleeve bushing. The nearly flawless performance of the beefier motors has given our customers years of trouble-free service.

Our early work in human interface design convinced us that the technology we had developed would make a superior moving fader automation system. In January of 1988 we put the console project on hold and put all of our efforts into Flying Faders. Needing more help, we added David Wood to the development team. Dave was a college student who interned with us and then hired-on full-time. Dave and I created scanning and communication circuits that allow Flying Faders to scan every fader, switch and LED in the system 305 times per second. (The early systems have each scanned over 100 billion components since they were installed.)
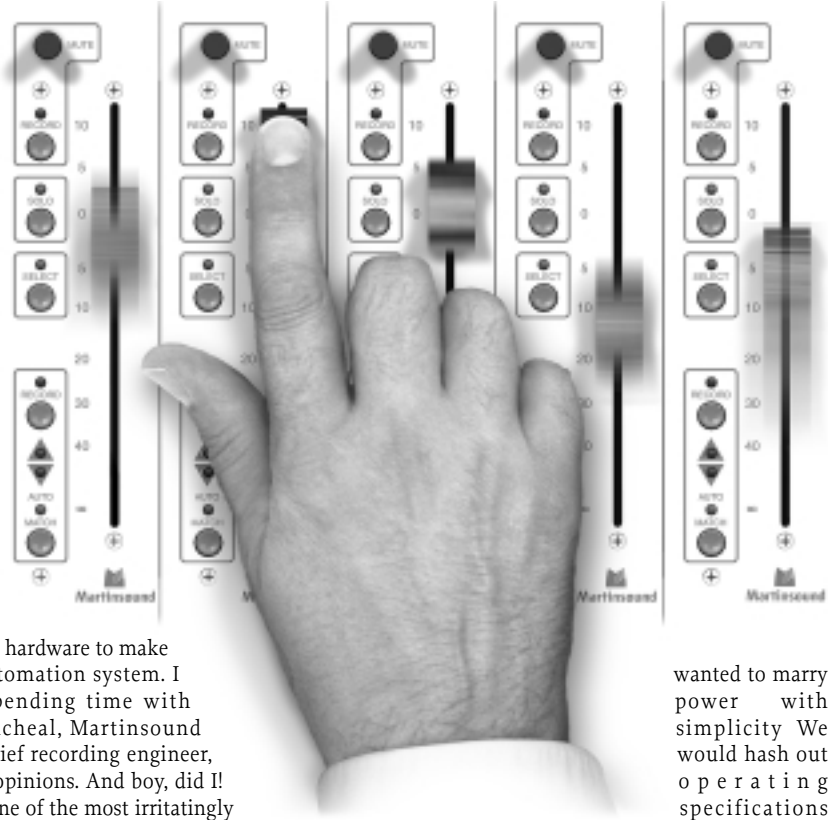
We spent a lot of time on developing hardware that was reliable, easy to repair, and cost less. But it soon became apparent that it would take more

than better hardware to make a great automation system. I started spending time with Shawn Micheal, Martinsound studio's chief recording engineer, to get his opinions. And boy, did I! Shawn is one of the most irritatingly opinionated people I have ever met, but brilliantly so. The reason he is so irritating, it turns out, is that the equipment he is forced to work on is poorly designed, both sonically and from an operator's perspective. So I added him to the design team.

Shawn's fingerprints are all over everything great that Martinsound has designed like Flying Faders, MultiMAX and the MSS-lO mic preamp. Not only does Shawn know how equipment should work, but he can also hear incredibly well. It's a great combination when developing audio equipment. Today Shawn is Vice President of Product Development at Martinsound.

To round out the development team, we brought in Morgan Martin, another very opinionated person. Morgan was the former Western VP of Neve and George Lucas' Droidworks. Not only was he a Necam (Neve's earlier moving fader automation system) expert, but also understood the strengths and weakness of all of the competitor's products.

The three of us became the product specification team. Our first step was to look carefully at the systems offered by the entrenched competitors. We concluded that we could make major improvements in operational features while maintaining a top-level simplicity that would make the system very 'user friendly'. We started out by carefully examining the existing benchmark automation systems, NECAM and GML, to see where we could make improvements. We soon realized that the biggest flaw in the other systems was that they were a hassle to use. We wanted to make a system that you could "Just Mix" like you would without automation. We

wanted to marry power with simplicity We would hash out operating specifications during the day, and then I would work from 2 a.m. until midmorning to implement the functions. Each function was then immediately tested and reviewed to find any weaknesses or opportunities for improvements. Considering the complexity of the task, the development moved along at a brisk pace with this 'two shift' approach.

Once the core functionality of the automation software was developed, we hired two brilliant students from Cal Tech to flesh out the design and make it user friendly. Ron Goodman specialized in the Motorola 68000 code that runs the automation functions while Ed Nanale built a C-based Windows interface on the PC for easy operation. The pair worked closely together to optimize the communication and assignment of tasks between the two parts of the software. I continued to serve as the system architect for the hardware and software.

As we were developing Flying Faders, we invited prospective clients, both OEM's and individual studios, to preview our blossoming product. Morgan introduced me to Barry Roche, President of Neve US. Barry took an exceptional interest, even though Neve had fairly recently introduced Necam 96. I imagine their big concern was automation for their soon-to-be-announced VR console series. Neve had been negotiating with George Massenberg to include GML automation on the VR, but the deal fell through.

Barry believed enough in our development team to give us a chance. Once he was convinced that Flying Faders would live up to our promises, he signed up to distribute the systems worldwide with an option to manufacture systems.

☑ **Martinsound**
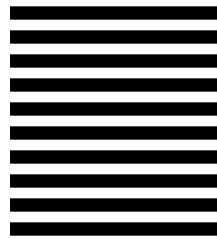**Helping You Stand Out**

Flying Faders: The Untold Story

Neve demanded that we change and add features to meet some of their advanced requirements such as tape machine control and channel button events control. We created versions of hardware and software specifically for Neve V-Series consoles. Their extensive experience with automation and their rigorous testing of our software and hardware made Flying Faders a much stronger product at introduction. Roger Camron and Dave Close came over from Neve UK and spent 6 months assisting us in debugging the system. After this intensive test/improve/test/improve cycle, we had a system that met the requirements of both sides and one that we were, and still are, extremely proud of.

The first delivery of Flying Faders on a Neve console was to Rumbo Recorders in March of 1989. And then it was 'off to the races'. The launch of the product was so meteoric that we had a hard time building systems fast enough. By the end of 1989, only 9 months after starting deliveries to Neve, we were shipping one system a day! By the end of 1989 we had already built 85 systems!

Then everything changed. Neve purchased the rights to manufacture Flying Faders themselves along with the exclusive marketing rights for 10 years. When Neve's Kelso, Scotland plant took over the majority of the manufacturing of Flying Faders systems for V-Series consoles, Martinsound switched from high volume manufacturing to designing and building customized systems to fit a variety of other consoles including vintage Neve, API, QuadEight and film dubbing consoles. Neve, then AMS Neve, maintained the exclusive control of the worldwide marketing, sales, distribution and service of Flying Faders for a decade.

Martinsound's dedication to the advancement of Flying Faders remained strong during this period. We continued to write software enhancements for Neve. The initial V1.2 software

was followed by V2.0, V3.0 and finally V3.1, the current version. Features included requirements for the film industry and other enhancements. We were careful not to destroy the simplicity of the system with the addition of new features.

We created new fully compatible hardware including a 'double density' dual fader module, servo rack expansion to 128-fader capability, two versions of automated 'sidecars', and control of external relays. We also developed a custom product to expand consoles equipped with Flying Faders. Our ACX Automated Console Expander is a compact 'sidecar' of up to 32 full-function input channels with Flying Faders.

For the past ten years our Flying Faders activities have been limited by contractual agreements. But we have always assisted customers by offering numerous technical training seminars covering preventive maintenance, troubleshooting and repair of Flying Faders systems. Dale Manquen, in an effort to improve the dissemination of information, started the Flying Faders Users' Group, which distributes news of interest to Flying Faders owners, tech and recording engineers. Martinsound continues to support the users group with Shawn Micheal acting as Martinsound's sponsor and host of the FFUG website.

With the expiration of the Neve Contract, things have changed again. Now we can sell, manufacture and improve the system without Neve's involvement or approval. So what does that mean for the future? Set free to enhance the product as we see fit, we will continue to develop improvements that will keep Flying Faders on the cutting edge of automation for years to come.

In 1996, Shawn and I invited Morgan Martin back as a consultant to plan the future of Flying Faders in the post Neve era. We asked the question, what should automation look like in

the next century? The results of the last 4 years of work will be incorporated in future software products, including newly developed patentable technology that will be as revolutionary as Flying Faders. Although these improvements won't make it through the lab and testing phase anytime soon, you can rest assured that your investment in faders and the control rack will be preserved and enhanced.

We have also been listening to customers. User requested features will include automatic backup of the RAM-based mix data to the hard drive and the ability to store the entire mix/pass tree. We will also be adding modes to trim faders without timecode running, some new muting modes that will make vocal comps easier, and we will be 'Y2K' compliant. Actually, the existing code will run fine next year. Only an unnecessary clock window will fail to display the proper time and date after the New Year. If you have suggestions for the next release of Flying Faders, please send them to SMicheal@Martinsound.com.

The Flying Faders *Just Mix* technology has earned a warm spot in the hearts of both recording engineers and maintenance technicians. The popularity and durability of the system has convinced studio owners that Flying Faders is an excellent long-term investment with a very low total cost of ownership. There are a large number of studios that own multiple Flying Faders systems and continue to buy new systems to replace other brands of automation because Flying Faders draws customers.

Even though 10 1/2 years have passed since our first deliveries, Flying Faders is still the yardstick by which fader automation systems are measured. In fact *Flying Faders*, our trademarked brand, has become a generic term used to describe any motorized automation system. Move over Kleenex and Band-Aid, Flying Faders is here. ☑

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