AFTER TOUCH

THE OFFICIAL PUBLICATION OF THE YAMAHA USERS GROUP

Chick Corea

YAMAHA®

News & Information

FIRST OF ALL, We would like to announce a change in Publishers for *AfterTouch*. It's a long story, so let's begin at the beginning:

We've received many letters and calls from readers inquiring about the status of *AfterTouch* magazine. The interruption of this Yamaha publication did not go unnoticed! You've been asking us if the publication still exists, and if it does, when you can expect to receive it. We apologize for the delay in getting *AfterTouch* out to all you readers, since you have always been so patient and involved with the magazine.

Yamaha Corporation of America has long supplied extended literature and educational materials for their instruments, free of charge. Anyone working with a Yamaha Digital Musical Instrument, or even people who've simply wanted to increase their understanding of today's instruments and their many possibilities, have been able to receive *AfterTouch* magazine free of charge, just by asking. Yahama hoped this extended support and information would enable all level of musicians to fully enjoy and utilize the equipment to its ultimate capability.

The appreciation and support of all of the readers of *AfterTouch* magazine has always been gratifying. The people at Yamaha wanted to keep the publication going to maintain this special channel of communications they had developed between themselves and the readership they had discovered with *AfterTouch*.

At the same time, the cost of providing this publication free of charge was no longer economically feasible. Due to increases in paper costs, printing, and mailing charges, Yamaha had to consider an alternative way to keep the publication going. These considerations took much time, and are in large part responsible for the interruption of publication over the last few months.

After much consideration, Yamaha Corporation of America has decided to turn its users-group publication over to Tesladar Communications, which is headed by the editor of their former publication, Tom Darter.

Dr. Tom Darter has been involved with the communications and music industries for over 15 years. Besides receiving his Doctorate in music composition from Cornell University, Tom presided as the Editor of *Keyboard Magazine* for its first 10 years, before his promotion to Director of Publications for GPI (which also published *Guitar Player Magazine, Frets Magazine,* and other educational publications at the time). Tom also taught an Electronic Techniques In Film Music class for four years at USC, and orchestrated two albums worth of material for the Kronos Quartet. In addition, he has been a studio keyboardist on music scoring sessions for such films as *Explorers, Pretty In Pink, Innerspace, The 'burbs,* and *Star Trek V.*

As the Editor of *AfterTouch* (since its first issue) and as a musician who works as a professional on different music projects, Tom is definitely someone who understands the many levels of musicianship that *AfterTouch* has tried to explore throughout its years of existence.

Under the valued and expert technical and musical direction of Dr. Tom Darter, *AfterTouch* will continue to be a monthly publication that strives to provide information that can help people of all levels to utilize their Yamaha instruments to their fullest potential.

Therefore, starting with the July '89 issue, *AfterTouch* will become a "paid-for" publication. It will be published independent of Yamaha Corporation of America by Tesladar Communications, at a cost of $12.00 per year. For this $12.00, you will receive 12 monthly issues of *AfterTouch* . Each issue will be at least 36 pages in length, almost twice the old issue size (and the same size as the special double issue you are now reading). Each issue will definitely include pages of Questions and Answers, pages of Hot Tips, pages of reader patches, MIDI columns, an in-depth artist interview, material on new Yamaha products, coverage of older Yamaha electrical musical instruments, and more.

Please understand, we need to receive your new subscription requests by August 15 in order to keep you on the *AfterTouch* mailing list and insure that you won't miss any issues. We will
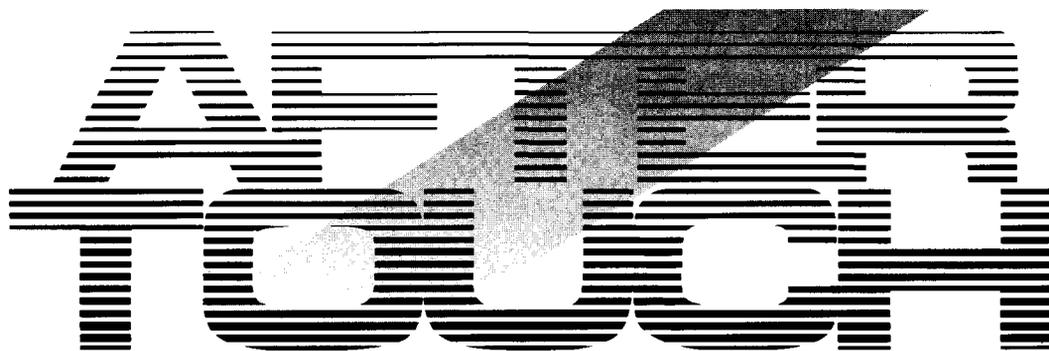
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Questions & Answers

Answers To Questions From Readers. By Steve Demming & Tom Darter.

TX81Z FM digital tone generator.
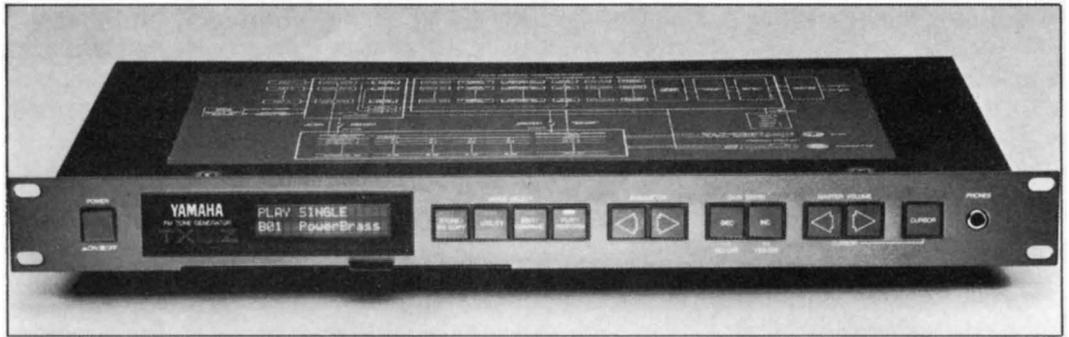
My TX81Z does not respond to control messages (breath controller, modulation wheel, and so on) when in Performance mode unless I set all of the voices to Omni. I've tried setting Control Change to both Normal and Global modes, but nothing seems to work. This prevents me from having individual control over the voices, which is a serious limitation of the machine. Am I at fault, or is my TX81Z defective??—Brian Clevinger, Lawrence, KS.

Setting Control Change to Global should take care of your problem—it allows control change messages from one MIDI channel to affect all of the instruments in a Performance. In order for this to work, the Global MIDI channel has to be the same as the MIDI channel of the instrument that is sending the Control messages.

I have been trying to get a cassette interface cable for my DX27. Where can I find something that will work?—James Bohn, Manitowoc, WI.

What you need is the Yamaha cassette interface cable, part #MI551160. For more information, call the Yamaha Electronic Service Division Parts Department: 1-800-443-3548.

We have both the Yamaha CP35 and the CP25 electronic pianos in stock. Do you know of any-one out there who can MIDIfy them? We have already checked with J.L. Cooper, Forte Music, and Eddy Reynolds. They don't know of anyone who can help. Do you?—Ron's Penguin Music, Toledo, OH

No. Unfortunately, we don't know of anyone who does a MIDI modification for the CP35 or CP25. If any readers kow of someone who provides this service, please let us know, and we will pass the information along to everybody.

I enjoy the versatility of the Yamaha RX17, especially its MIDI implementation. However, for more than a year now, I have been trying to get the RX17 System Exclusive format from the International MIDI Association (IMA), since I am an IMA member. Every time I call, they tell me that Yamaha has not sent them the Sys Ex documents for the RX17. What's the problem?—Paul Kovitz, State College, PA

Anyone who wants RX17 System Exclusive information, or System Exclusive information on any Yamaha MIDI product, can request it directly from the Yamaha Electronic Service Division. Call 1-800-854-3619, and ask for extension 1.

I have a few questions concerning the SPX90 II: 1) Why is it that the Pitch Shift programs are not accurate? Some notes are correct, and some aren't. I've tried adding chorus, and have changed the I/O levels to attain a better sound. Nothing works. 2) On Pitch Shift programs, the unit seems to glitch with Feedback levels above 69%. This also happened with the original SPX90. I know of others who have experienced the same problems. Please help.—Todd Mizenko, Columbus, NJ

Unfortunately, the problems you have uncovered are due to limitations in the unit itself. The SPX90 is not designed to be Pitch Shifter or Pitch Transposer, per se—these presets appear on the unit as effects. On some sounds, you won't notice the glitch in the pitch shift at all, because the complexity of the sound will mask it.

Earlier this year I bought an RX5, and have enjoyed using it. However, recently, I bought a sequencing software package for my IBM compatible called "Cakewalk," produced by Twelve Tone Systems. The RX5 does not want to cooperate with the software. Here is the problem.

The sequencer will store the data transmitted, but it does not store any information regarding detuning of specific instruments. If I have the RX5 set in MIDI Voice Mode, none of the instruments will be detuned, but otherwise will play the song as it should. If the RX5 is in MIDI Pitch Mode, the song will not be played back unless I am in the Song mode and have the song in memory previous to playback, which cancels the whole purpose of having a sequencer! Also, if I am in MIDI Pitch Mode, whatever instrument is set on the MIDI channel I am using will automatically play all of the parts the rest of my instruments play. The only way to rid myself of this problem is to set the volume of that instrument to zero. Can you help me with this problem?—Rob Coddington, Chicago, IL

Well, we can explain the problem, and perhaps offer some helpful advice.

In MIDI Voice Mode, each instrument voice in the RX5 is assigned to *one* MIDI note number. Therefore, even if you have a pattern where you've set up an entire bass line using the Multi Voice function (Job #03) in Key Assign, the RX5 will output all of those different pitches as *the same MIDI Note number* (because that bass voice is assigned to only one MIDI note number).

If you want to access the RX5's ability to assign different pitches to its voices, you need to use the MIDI Pitch Mode. In this mode, up to sixteen of the instrument's voices can be used: each one of the sixteen is assigned its own MIDI channel, and each one responds to different MIDI note numbers sent to it on its own MIDI channel.

In order to take advantage of MIDI Pitch Mode, it is necessary to program the RX5 from an external MIDI keyboard. Pick your sixteen instruments and assign them each to a MIDI channel. Then, program your patterns, playing the voices one at a time; remember, you have to change the MIDI channel on the MIDI keyboard each time you want to access another RX5 voice.

If you program patterns in this way, you can send them from the RX5 to your external sequencer, and the sequencer will record all of the pitch changes you played using the MIDI keyboard. In order to take advantage of this approach, you need to use a sequencing program that will record more than one MIDI channel on a single track; you will also need an interface that

has multiple MIDI OUT jacks, and your sequencing program must be able to assign specific tracks to specific outputs. If you have these capabilities, you can assign the RX5 (in MIDI Pitch Mode) to one track, assign that track to a specific output, and keep the RX5 data separate from the other MIDI data. Otherwise, since the RX5 responds to all 16 MIDI channels in MIDI Pitch Mode, there will be problems.

I am a teacher who owns an Apple IIGS computer because of its compatibility with the school-owned computer in my office. I am desparately trying to find an editor-librarian program that will work with my DX7s, but am having no luck. I would also like editor/librarian programs for the TX81Z and RX5 that will operate on the Apple IIGS. Do such programs exist?—David Harbart, Strongsville, OH.

We do not know of any such programs for the Apple IIGS. However, that doesn't necessarily mean that they don't exist. If any readers know of a company that offers such programs, please let us know, and we will pass the information along to everybody.

I own a QX1, which I can operate with ease. However, when it comes to using the RX5 drum machine, I have many problems. First of all, can you explain how to save an edited voice to a Copy voice location? Next, can you tell me why, when I change tempo on a pattern using the Tempo slider, it changes all of the pattern tempos in the machine? And finally, why, when the RX5 is in Internal Sync mode, do patterns play via MIDI from the QX1?—Paul Whiting, San Francisco, CA

Lots of questions here. Let's get started:

The procedure for Editing a voice and then sav-

Q & A

ing it to a Copy location is a little bit complex, because the Copy Voice function is Job #09 in Key Assign mode, while all voice editing takes place in Voice Edit mode. In order to copy an edited voice to a Copy location, you have to store your edited voice before leaving Voice Edit mode for Key Assign mode. Follow these steps:

1) Go into Voice Edit mode, and pick the voice you want to edit using Voice Edit Job #01 (Select Voice for Edit).
2) Edit the voice to suit your needs, using Voice Edit Jobs #02-#06 (Pitch, Envelope, Pitch Bend, Level, and Loop On/Off) as desired
3) Once you have the desired voice edit, store it using Voice Edit Job #07 (Store Voice).
4) Now, go to Key Assign mode, and use Job #09 (Copy Voice) to store your edited voice to the Copy location of your choice.
5) At this point, you have two versions of the edited voice; one in the original location, and one in the Copy location. Since you want the original, unedited voice back in the original location, you still have work to do. Return to Voice Edit and select the now-edited voice using Voice Edit Job #01 (Select Voice For Edit).
6) Finally, use Voice Edit Job #07 (Initialize Voice) to recall the original, unedited voice from the RX5's permanent ROM memory and install it again in the RX5's Play/Edit memory. At this point, you have the original voice in its original location, and the edited voice in the Copy location you selected.

If you know what voice you want to edit in advance, it is easier to copy the voice to a Copy location first (using Key Assign Job #09), and then perform your voice edits on the voice in the Copy location. Two things to remember here: 1) In order to be available for voice editing, the voice must be assigned to an instrument key; therefore, after you copy the voice to a Copy loca-

tion, you must assign that Copy location to an instrument key (using Key Assign Job #01). 2) After you perform voice edits on the voice in its Copy location, you must store it (using Voice Edit Job #08) before leaving Voice Edit mode.

Concerning the tempo setting and patterns: The RX5 does not store a particular tempo with *any* pattern. Tempos are stored only in Song mode. When you are in Pattern mode, the RX5 plays at the tempo you set with the tempo slider or with the Tempo button and the numeric keypad.

Finally, the RX5 will respond to a MIDI Start message even when in Internal Sync mode. So, if you have it connected to the QX1 and start the QX1, the RX5 will respond to the Start signal it receives, and will play the currently selected pattern or song.

I am writing to inquire if there is any follow-up or backup material on the CHX-1 organ. This is a great instrument, but a new owner could use some suggestions and more explicit instructions than those provided in the manual. Can you help me?—Kenneth Satterlee, Cedar Falls, IA

There are no supplemental materials currently available on the CHX-1. For more information, contact the Yamaha Electronic Service Division's Product Information service: call 1-800-854-3619, and ask for extension 1.

Is it possible to modify the velocity scaling of the TX1P to make it more compatible with a variety of keyboard controllers??—Martin J. Brien, Cambridge, MA

Yes, it is possible, but you need a ROM update. Have your local dealer or technician contact the Yamaha Electronic Service Division Parts Department, which will send them the latest ROM version. It will come complete with an owners manual supplement explaining how to access the new features (including changing the velocity scaling).

TX1P piano tone generator.

DX11 FM digital synthesizer.

I am a proud owner of a DX11 keyboard. I read in AfterTouch of a manual for the "DX11 System," but my dealer told me it doesn't exist. What's the story? Also, I heard of a proposed Yamaha sound cartridge for the DX11. How can I obtain one? —Jean Pierre, Jr., Cambria Heights, NY

Your dealer was wrong. The DX11 System manual does exist; it can be ordered by writing to Yamaha Corporation of America, SGD Division, Literature Department, P.O. Box 6600, Buena Park, CA 90622-6600. On the other hand, your other information is also wrong: at present, Yamaha offers no sound cartridges for the DX11.

I have a Yamaha ME50 organ that I use and enjoy very much. I would like to know if you can control voices on the TX81Z tone generator separately from the ME50's upper manual, lower manual, and pedals? Also, is it possible to transpose the TX81Z from the ME50, or does that have to be done separately? —John G. Luerssen, Baltimore, MD.

The ME50 neither sends nor receives any MIDI control change messages—it just sends and receives MIDI, not messages. The upper manual sends and receives on MIDI channel 1, the lower manual sends and receives on MIDI channel 2, and the pedals send and receive on MIDI channel 3. Therefore, to control voices separately on the TX81Z from the different keyboards, you have to set up Performances on the TX81Z that assign the desired voices to the three MIDI channels that the ME50 uses.

Since the MIDI implementation on the ME50 involves only MIDI note messages, it is impossible to transpose the TX81Z from the ME50. However, it is possible to set up different Performances

on the TX81Z that have different transpositions relative to the keyboards of the ME50, and these Performances can be called up quickly from the TX81Z's front panel. Use the Note Shift parameters in the TX81Z's Performance mode to create the desired transpositions.

I recently purchased an RX17 drum machine, and am very pleased with it. Does Yamaha offer data cassettes with additional patterns. If not, do you know of any third-party software developers who offer any such patterns for the RX17? —Peter Tsakle, Methuen, MA

Yamaha does not offer any additional patterns for the RX17, and we are not aware of any companies that do. However, there are a lot of companies out there offering this kind of support, so continue to check advertisements and announcements. If we hear of any companies offering cassettes with new patterns for the RX17, we will pass the information along to our readers.

RX17 digital rhythm programmer.

TX81Z

"Classic Syn" & "Happy Chord." Two New TX81Z Voices By Eric E. Ogier.

Notes:

To lower distortion, decrease output of OP. #2 to around 80, and decrease the output of Op. #4 to about 70. Lowering the output of Op #2 to 70 and raising the output of Op. #4 to 93-95 gives a bell sound with a distorted sweep.

A note on the diagrams:

In these diagrams, the numbers listed for both Frequency Coarse and Frequency Fine do not represent the actual settings–instead, they represent a value level within the range of values available for both parameters. To set each operator's frequency value properly, start with the Frequency Coarse and Frequency Fine both at their lowest possible values; then, go to Frequency Coarse and Increment the value the number of times indicated by the number in the chart; finally, go to Frequency Fine and increment the value the number of times indicated by the number in the chart. The actual frequency values for each operator as shown within dotted boxes at the bottom of the Operator portion of the chart.

Notes:

Switching Op. #3 to frequencies of 5.65, 11.30, or 14.10 will change the sound a bit.

ClassicSyn

OPERATOR	op1	op2	op3	op4
on/off	ON	ON	ON	ON
out level	99	90	75	81
freq. type	RTO	RTO	RTO	RTO
fix range	255	255	255	255
freq. coarse	4	0	13	13
freq. fine	0	0	0	0
detune	+3	+3	-3	-1

-1-	-2-	-3-	-4-
1.00	0.50	4.00	4.00

ENVELOPE				
attack rate	25	23	25	22
decay 1 rate	7	0	8	6
decay 1 level	12	15	12	9
decay 2 rate	3	7	2	6
release rate	6	6	6	6
eg shift	OFF	OFF	OFF	OFF

SCALING/SENS				
rate	2	1	3	3
level	0	2	30	40
ams on/off	OFF	OFF	OFF	OFF
sens eg bias	0	0	0	0
key vel	5	1	7	7

voice name: ClassicSyn

algorithm no. 3
feedback 0

LFO			
waveform		sync	OFF
speed	28	delay	3
amp mod depth	0	sens	3
pitch mod depth	13	sens	4

FUNCTION			
mode POLY		mid C =	C 3
portamento FULL		rev rate	2
porta time	0	pb range	2
vol	99	pitch	50
pitch	0	amp	41
amp	0	eg bias	0
pitch	50	p bias	+0
amp	13		

HappyChord

OPERATOR	op1	op2	op3	op4
on/off	ON	ON	ON	ON
out level	99	99	99	90
freq. type	RTO	RTO	RTO	RTO
fix range	255	255	255	255
freq. coarse	35	26	26	9
freq. fine	0	0	0	0
detune	+3	-3	+0	+3

-1-	-2-	-3-	-4-
11.30	8.48	8.48	2.82

ENVELOPE				
attack rate	23	29	29	29
decay 1 rate	31	31	31	31
decay 1 level	15	15	15	15
decay 2 rate	8	6	6	5
release rate	15	10	10	9
eg shift	OFF	OFF	OFF	OFF

SCALING/SENS				
rate	1	1	1	1
level	0	25	46	21
ams on/off	OFF	OFF	OFF	OFF
sens eg bias	0	0	0	0
key vel	5	5	5	1

voice name: HappyChord

algorithm no. 6
feedback 6

LFO			
waveform		sync	OFF
speed	28	delay	14
amp mod depth	0	sens	3
pitch mod depth	78	sens	2

FUNCTION			
mode POLY		mid C =	F#1
portamento FULL		rev rate	7
porta time	0	pb range	2
vol	99	pitch	99
pitch	0	amp	0
amp	0	eg bias	0
pitch	99	p bias	+0
amp	0		

"Grand Piano." A New TX81Z Voice By Stan Varnas.

OPERATOR	op1	op2	op3	op4
on/off	ON	ON	ON	ON
out level	97	85	68	72
freq. type	RTO	RTO	RTO	RTO
fix range	255	255	255	255
freq. coarse	4	13	22	4
freq. fine	0	0	0	0
detune	+0	+0	-2	+2

-1-	-2-	-3-	-4-
1.00	4.00	7.00	1.00

ENVELOPE				
attack rate	26	22	24	29
decay 1 rate	7	1	4	1
decay 1 level	13	12	0	0
decay 2 rate	3	3	3	4
release rate	2	1	1	1
eg shift	OFF	OFF	OFF	OFF

SCALING/SENS				
rate	2	2	3	1
level	0	99	86	5
ams on/off	OFF	OFF	OFF	OFF
sens eg bias	0	0	0	0
key vel	1	4	1	1

voice name: GrandPiano

algorithm no. 3
feedback 7

LFO
waveform		sync	OFF
speed	35	delay	0
amp mod depth	0	sens	0
pitch mod depth	0	sens	0

FUNCTION
mode	POLY	mid C =	C 3
portamento	FULL	rev rate	0
porta time	0	pb range	0
vol	99	pitch	0
pitch	0	amp	0
amp	0	eg bias	0
pitch	0	p bias	+0
amp	0		

Notes:

This one is a nice piano sound. If you've tried others and they didn't sound exactly right, this is the one to try.

"Steel Drums." A New TX81Z Voice By Dave Joyce.

OPERATOR	op1	op2	op3	op4
on/off	ON	ON	ON	ON
out level	99	70	79	75
freq. type	RTO	RTO	RTO	FIX
fix range	255	255	255	255
freq. coarse	4	1	8	58
freq. fine	0	4	7	9
detune	+3	-3	-3	+3

-1-	-2-	-3-	-4-
1.00	1.05	2.43	233H

ENVELOPE				
attack rate	20	18	16	21
decay 1 rate	11	9	10	31
decay 1 level	12	13	12	12
decay 2 rate	12	11	12	22
release rate	6	3	6	8
eg shift	OFF	OFF	OFF	OFF

SCALING/SENS				
rate	1	0	1	0
level	0	0	0	0
ams on/off	OFF	OFF	OFF	OFF
sens eg bias	0	0	0	0
key vel	0	0	0	0

voice name: SteelDrums

algorithm no. 3
feedback 5

LFO
waveform		sync	OFF
speed	35	delay	0
amp mod depth	0	sens	0
pitch mod depth	0	sens	0

FUNCTION
mode	POLY	mid C =	C 3
portamento	FULL	rev rate	4
porta time	0	pb range	0
vol	40	pitch	0
pitch	0	amp	0
amp	0	eg bias	0
pitch	0	p bias	+0
amp	0		

Notes:

While in college I had the opportunity to play some real steel drums. This is the closest I have been able to come to replicating that sound.

This voice is particularly useful with an arpeggiator, playing one note at a time. The arpeggiator, when set at the appropriate speed, mimics the rolling of the mallets one hears with steel drums.

DX7 II

"Stereo Airport." A New DX7 II Performance By Dan Linehan.

Notes:

This voice sounds best when played monophonically near C3.

Stereo Airport

voice mode SINGLE
eg forced damp OFF
total volume 99

PAN
mode A/B
range 0
select LFO

A and B

rate		
1	99	
2	7	
3	80	
4	21	

level	
1	0
2	25
3	87
4	5

(A) (B)

	voice	101	101	A: JetRoar II
	note shift	+ 0	+ 0	B: JetRoar II

sustain fs (64)	☒	☒
foot switch (65)	☒	☒ PORTAMENTO
CS 1 [ctrl# 14]		NO EFFECT
CS 2 [ctrl# 15]		NO EFFECT

tuning select ☒   ☐ P01 EQUAL TEMPER   –

JetRoar II   alg 7

transpose C 2
feedback 7
sync ON

key mode U POLY
unison detune 4

random pitch 1

pitch range 0
       step 0
mode NORM

portamento
♩⟋♩
mode RETAIN
step 0
time 0

LFO
wave ⌐⌐⌐   sync ON   pms 5
speed 99   pmd 6   .... ams ....
delay 99   amd 0   ①②③④⑤⑥
    mode SINGLE   0 0 0 0 0 0

FREQUENCY/OUTPUT

	on off	out lev	crs	fin	freq mode	det	vel sens
①	ON	99	16.00		×	+ 0	0
②	ON	75	0.50		×	– 7	0
③	ON	99	0.50		×	– 7	0
④	ON	60	0.50		×	+ 0	0
⑤	ON	72	9.772		Hz	– 7	0
⑥	ON	99	100.0		Hz	+ 7	0

SCALING

	mode	left dep	crv	break point	right crv	dep
①	NORM	0	⟋	A-1	⟍	0
②	NORM	0	⟋	A-1	⟍	0
③	NORM	0	⟋	A-1	⟍	0
④	NORM	0	⟋	A-1	⟍	0
⑤	NORM	0	⟋	A-1	⟍	0
⑥	NORM	0	⟋	A-1	⟍	0

ENVELOPE

	R1	L1	R2	L2	R3	L3	R4	L4	RS
①	14	80	17	99	37	0	37	0	0
②	99	99	99	99	99	99	99	0	0
③	14	80	15	95	30	10	99	0	0
④	14	99	30	99	25	99	39	0	0
⑤	15	50	23	85	15	95	16	0	0
⑥	16	94	50	97	99	99	37	99	0
℗	99	99	99	83	0	58	0	58	0

p range 8oct   p vel sens OFF

DX7 II

"Basilica" & "PrcEnsmble." Two New DX7 II Voices By John P. Mikowychok.

Basilica — alg 29

transpose C 3
feedback 0
sync OFF

key mode POLY
random pitch 0

pitch range 2
step 0
mode NORM

portamento
mode RETAIN
step 0
time 0

LFO
wave (triangle) sync OFF pms 2
speed 1 pmd 4 .... ams ....
delay 0 amd 0 **[1]** 2 3 4 5 6
mode MULTI 0 0 0 0 0 0

FREQUENCY/OUTPUT

	on off	out lev	crs	fin	mode	det	vel sens
1	ON	99	0.50		x	− 4	0
2	ON	99	3.03		x	− 4	0
3	ON	99	1.00		x	+ 3	0
4	ON	75	1.00		x	+ 7	0
5	ON	58	16.00		x	− 1	0
6	ON	71	25.00		x	+ 1	0

SCALING

	mode	left dep	crv	break point	crv	right dep
1	NORM	14	\	D 3	\	21
2	NORM	45	/	C 3	\	0
3	NORM	99	\	A#2	/	99
4	NORM	32	\	B 4	/	32
5	NORM	72	/	F 3	\	99
6	NORM	49	\	D#2	\	63

ENVELOPE

	R1	L1	R2	L2	R3	L3	R4	L4	RS
1	65	99	99	99	99	99	45	0	0
2	75	99	99	99	99	99	51	0	0
3	71	99	99	99	99	99	46	0	0
4	71	99	99	99	99	99	0	0	0
5	73	99	99	99	99	99	45	0	0
6	80	99	99	99	99	99	53	0	0
P	99	50	99	50	99	50	99	50	0

p range 8oct   p vel sens OFF

Notes:

This voice is scaled so reed qualities are emphasized in the low and high octaves, while bright pipe qualities are emphasized in the mid-range. It includes built-in reverb.

Here is an optional Pan setting for use in a Performance memory: Range = 45, Select = LFO; Pan EG: R1 = 59, L1 = 63, R2 = 30, L2 = 41, R3 = 42, L3 = 47, R4 = 57, L4 = 55.

PrcEnsmble — alg 2

transpose C 3
feedback 4
sync ON

key mode POLY
random pitch 1

pitch mod 44 64
amp mod 0 0
eg bias 0 0

portamento
mode RETAIN
step 0
time 2

LFO
wave (triangle) sync OFF pms 3
speed 33 pmd 0 .... ams ....
delay 33 amd 0 **[1]** 2 3 4 5 6
mode SINGLE 0 0 0 0 0 0

FREQUENCY/OUTPUT

	on off	out lev	crs	fin	mode	det	vel sens
1	ON	99	2.570		Hz	− 6	0
2	ON	44	20.80		x	+ 0	0
3	ON	99	1.862		Hz	− 1	0
4	ON	70	1.00		x	− 3	0
5	ON	70	1.00		x	+ 7	0
6	ON	99	1.02		x	+ 1	0

SCALING

	mode	left dep	crv	break point	crv	right dep
1	NORM	0	/	F#2	/	51
2	NORM	0	/	D 2	/	61
3	NORM	0	/	C 3	\	0
4	NORM	0	/	G 2	\	15
5	NORM	0	/	C 3	\	0
6	NORM	99	\	G#1	\	11

ENVELOPE

	R1	L1	R2	L2	R3	L3	R4	L4	RS
1	99	99	82	99	65	76	57	0	0
2	99	99	67	88	55	21	99	0	0
3	71	99	41	95	54	92	53	0	0
4	56	99	13	96	5	94	27	0	0
5	79	99	99	82	92	90	26	0	0
6	80	99	60	82	43	28	24	0	0
P	94	67	85	42	95	50	60	48	1

p range 2oct   p vel sens OFF

Notes:

This is a bright attack, "wet" sound with a built-in delay. It is reminiscent of a patch on the Police's "Wrapped Around Your Finger," bred with a PF10. It is good for chord accompaniment. Have a good speaker for the low overtones.

WX7 & TX81Z

Creating Custom WX7 Sounds From Preset (ROM) TX81Z Voice.
By Gregory W. Yasinitsky.

NUMEROUS WOODWIND ARTISTS have enthusiastically adopted Yamaha's WX7 MIDI wind controller because of the instrument's capacity to respond to subtle changes in breath pressure. With a WX7, it is possible to play phrases with a wide variety of breath controlled dynamics, and to play sounds whose tone colors (timbres) are controlled by the intensity of a performer's air stream.

The WX7 works well when MIDIed with Yamaha's economical TX81Z tone generator. The TX81Z boasts a great deal of power and flexibility, and these qualities make this tone generator an ideal partner for the WX7. Special breath sensitive voices, created with the WX7 in mind—such as those in Sal Gallina's Expressive FM Applications and the Yamaha Demosoft for the WX7—provide performers with sounds that will react to subtle changes in air pressure. Unfortunately, though, most preset (ROM) TX81Z voices are not programmed to respond to this sort of breath control. If WX7 players want to get the most out of their TX81Zs, then they will need to modify the breath control parameters of those preset (ROM) voices.

The Setup

Before customizing stock voices, it is important that your WX7 and TX81Z are set up properly. Here is the suggested Dipswitch setup for the WX7:

#1 (AT): on
#2 (Vol): off
#3 (Eb): whatever you prefer
#4 (Bb): whatever you prefer
#5 (Key): off
#6 (Hold): on
#7 (Curve): off
#8 (Loose): on

Also, the four rotary pots for Wind Zero, Wind Gain, Lip Zero, and Lip Gain should be adjusted to your playing style. A suggested procedure for setting dipswitches and pots can be found in "Getting Acquainted With Your WX7" [AfterTouch, March 1989, page 14] by this author.

The suggested setup for the TX81Z involves setting the Master Tune to 0 and making the following MIDI control settings:

Basic Rec Ch: 1
Transmit Ch: 1
P. Change: com
Cont. Change: norm
Exclusive: on
Note on/off: all
Pitch Bend: norm
A. Touch–BC: on

Save Your I Bank

If you like any of the customized sounds presented in this article, the only way you will be able to save them is by transferring them to your I (Internal) bank; see your TX81Z owners manual for details. This transferring process, however, will erase voices that you currently have stored in your I bank. So, an important step before you begin any programming is to save your current I bank to cassette. Follow the directions outlined in your TX81Z owners manual for saving data. Store your I bank to cassette and then, to be safe, make an additional copy.

About The Customized Voices

My goal in reprogramming preset (ROM) TX81Z voices was to make them more responsive to the WX7, without changing their basic voice characteristics. In working towards this goal, I discovered that different "families" of voices required somewhat different reprogramming techniques. These techniques, described below, are the result of numerous hours of experimentation, but they should not be viewed as gospel. As with all musical matters, the success of these customized voices must be determined by one's own ear. My hope is that WX7/TX81Z performers will use the following programming suggestions as starting points in their individual searches for more perfect voices.
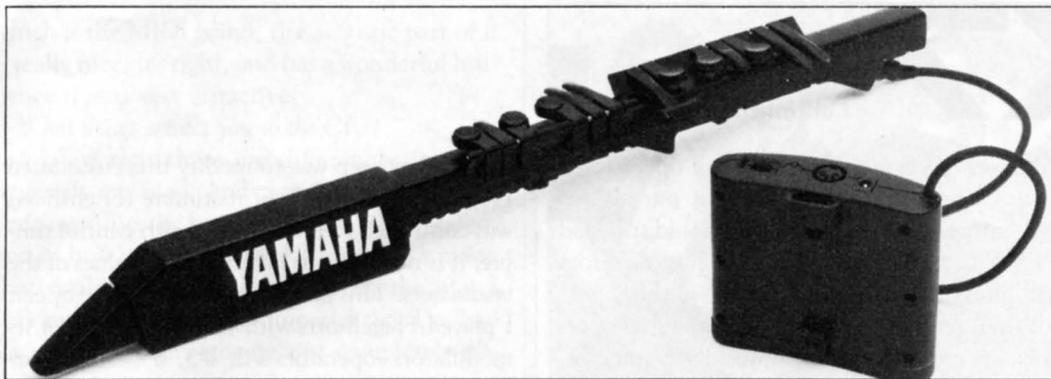
WX7 MIDI wind controller.

Keyboard Sounds

To begin with, let's try voice A17, PercOrgan. It is a nice jazz organ sound, but one that is difficult to play with a WX7. PercOrgan does not respond to breath control, and if you play fast passages, the sound seems to be lagging behind your fingers. This lagging occurs because PercOrgan is a Poly Mode voice. A Poly Mode voice is one that retriggers every time you change notes, whether you rearticulate or not. Play a scale and tongue each note, then play a scale and slur. You will hear very little difference because it is impossible to slur with a Poly voice.

To change this situation, follow these steps: Press edit, and then use the right parameter to key to scroll until you see "Function?" on the screen. Press the right data entry key; the screen should now read "Poly Mode." Press the right data entry key again; the screen will read "Mono Mode." Now play–some passages tongued, and some passages slurred. Voila! The lagging problem is gone. In Mono Mode, a voice will only be retriggered when you rearticulate. Tonguing, slurs, and note groupings will be based entirely on your playing style. Thus, by changing one parameter (Poly Mode to Mono Mode), we have transformed A17 PercOrgan from an unstable sound into an expressive jazz organ voice that articulates like a wind instrument.

Now let us modify PercOrgan so that it will respond to your breath controlled dynamics. Press the right parameter key and scroll until you see "C EG Bias = 0" (breath control envelope generator bias equals 0) on the screen. Press the right data entry key and hold it until 0 changes to 99. This will enable the force of your airstream to control the output of the operators. Press the left parameter key and scroll until you see "sensitivity." Press the right parameter key and scroll until you see "EBS 0 0 0 0" (EBS stands for "envelope bias sensitivity"). The zeros represent the amount of breath control that each operator has been set to receive (0 is low, 7 is high). To change the volume of a voice with breath control, the EBS value of the *carriers* must be raised.

The algorithm of PercOrgan is Alg 8–all four operators are carriers. Thus, to breath control the dynamics (volume) of PercOrgan, the EBS values of all four operators must be raised. With the cursor keys, select operator #1, and, with the right data entry key, change the EBS number from 0 to 5. Use the same procedure to select operators #2, #3, and #4, and, with the right data entry key, raise the EBS numbers of all operators from 0 to 5, until the screen reads "EBS 5 5 5 5."

Now you have something special: a jazz organ that articulates like a wind instrument, with breath controllable dynamics. You could raise the EBS values of the carriers further, from 5 to 7, but if you did that, you would discover that this voice would lose much of its keyboard quality, and it would cease to sound like an organ. My experience with keyboard voices is that the EBS of the carriers should not be raised above 5. (Remember to save this edited voice to an I (Internal) bank location before proceeding.)

Next, let's customize an electric piano voice, A13 Dynomite EP (Alg 5). Change the mode from Poly to Mono, raise the BC EG Bias from 0 to 99, and raise the EBS values of the *carriers* (operators #1, and #3) from 0 to 5. You now have a breath controllable electric piano voice.

The playing response of this altered voice can be further improved by modifying the KVS (key velocity sensitivity) values of the operators. This step was not necessary in our modification of PercOrgan because the original preset PercOrgan was not programmed for KVS. Most other keyboard sounds, however, *are* programmed to be touch sensitive, and my experience is that these touch sensitive keyboard sounds are much more responsive to the WX7 after their KVS levels have been lowered. A formula I use to modify keyboard voice KVS levels is to lower the KVS value of each operator by

WX7

the lowest KVS number of the four operators.

Let's adjust the KVS values of our altered Dynomite EP voice. The screen should still read "EBS 5 0 5 0" from our last operation. From EBS, press the right parameter key; the screen will then read "KVS 2 3 3 3." Of the four operators, operator #1 has the lowest KVS value–2; so, all of the operators should be lowered by a factor of 2. Change the KVS values to 0 1 1 1. Now play; you will find that you have a unique, expressive electric piano voice. To get the most from this voice, (or from any other Mono voice with a short envelope), you will need to use fairly constant articulation. Remember, a Mono voice will not retrigger unless you rearticulate.

Guitar, Percussion, And Harp-Style Voices

The procedure described above for customizing keyboard voices also works well for other voices with sharp attacks and short envelopes, such as guitar, percussion, and harp-style voices. To customize one of these voices, change the mode from Poly to Mono, raise the BC EG Bias from 0 to 99, raise the EBS of the carriers from 0 to 5, and lower the KVS values of all operators by a factor equal to the lowest KVS number of the four operators.

Brass Voices

One of my favorite preset voices is B03 Flugelhorn (Alg 3). Although Flugelhorn does not sound much like a real brass instrument, it is an excellent "electronic brass" voice, similar to those heard in much of today's pop music.

My first step in customizing Flugelhorn was to reprogram the voice so that its volume would be breath controllable. First, I raised the BC EG Bias from 0 to 99. Then, after some experimentation, I determined that brass voices are most responsive dynamically when EBS values of their carriers are raised to their maximum levels. Since the algorithm of Flugelhorn is Alg 3–only operator #1 is a carrier–I raised the EBS value for operator #1 from 0 to 7, to its maximum level. After more experimentation, I found that brass voices responded best when they were programmed for little or no KVS; so I lowered KVS values for Flugelhorn from KVS 2 2 2 2 to KVS 0 0 0 0. After these modifications, Flugelhorn was easy to play, and responded well to breath controlled dynamics. The sound, however, was much too bright.

The next step was to modify this customized Flugelhorn voice so that its timbre (brightness) was controlled by breath. To breath control timbre, it is necessary to raise the EBS values of the *modulators*. This procedure must be done by ear. I played Flugelhorn with the EBS values of its modulators–operators #2, #3, #4–set to various levels before I arrived at the settings that worked best for me: EBS 7 6 7 6.

I also experimented by playing my new Flugelhorn voice in Mono Mode and Poly Mode. Although Mono Mode responded to my articulation better, I found that Poly Mode was more suited for Flugelhorn. To my ears, Poly Mode's retriggering of each note added an essential quality to this electronic brass voice.

For brass voices in general, I recommend raising BC EG Bias to 99, and EBS of carriers to 7. Lower the KVS values as much as possible and experiment with EBS values of modulators until you find settings that suit you. Then, play your modified voice in both Mono and Poly Mode to determine which mode sounds best to you.

Wind And String Voices

The general principles outlined above for customizing brass voices will also work well for reprogramming wind and string voices. As with brass voices, EBS values of modulators must be set by ear for wind and string voices. Modulators of brass voices often require high EBS values (5, 6 or 7), modulators of wind voices generally need to be set in the middle (3, 4 or 5), and modulators if strings voices often sound best when values are set low (0, 1 or 2).

Voices With Echoes

Some of the most beautiful TX81Z voices are those with echoes, such as D03 Krstl Choir (Alg 7). Generally, when a voice has an echo, it is best to leave it in Poly Mode. BC EG Bias should be raised to 99, EBS values of carriers should be raised to 4 (higher than 4 and the echo characteristics of the voice are lost), and EBS values of modulators should be left at 0. KVS of all operators should be reduced as much as possible.

The algorithm for Krstl Choir is Alg 7–operators #1, #2, and #3 are carriers. Thus, for Krstl Choir, EBS values are changed from EBS 0 0 0 0 to EBS 4 4 4 0. Since preset KVS values are all at zero, they can be left alone.

V50 Applications

THIS IS THE FIRST in a series of articles designed to help you make the best use of the sequencer section of the Yamaha V50 synthesizer. To get the most out of these articles, it would be best for you to read the V50 owners manual first, and have a basic understanding of the instrument. However, it will be possible to use these articles as a quick and painless guide to the use of the V50's sequencer.

Understanding The V50 Sequencer

The sequencer on the V50 is capable of playing eight individual instrument parts simultaneously. Each instrument part goes on a track. The V50 sequencer has 8 tracks, which can all play together as a sequence or a song. The 8 tracks, are accessed and monitored from buttons TR1-TR8 in the Edit area. The rhythm part is located on a 9th track that is completely independent of the 8 sequencer tracks. When in the Sequencer mode, the rhythm part is accessed and monitored from the RHY button in the Edit area.

The 8 tracks of the V50 sequencer are like an 8-track tape recorder. You record one instrument or group of instruments on each track. For instance, the bass line would be on Track 1, piano on Track 2, the horn section on Track 3, and so on. Each of the 8 tracks in the sequencer are related to the 8 instrument voices in a Performance. A Performance has 8 voice slots, each one of which contains an instrument

voice. The instrument in each slot of the Performance is played from the same-numbered track in the sequencer. Therefore, each song on the V50 can have up to 8 instrument parts, plus the independent rhythm part that plays concurrently.

Since instrument parts are usually not as repetitive in nature as rhythm parts, instrument tracks do not have patterns that are linked together to make a song. Instrument tracks are linear. This means that they are constructed from beginning to end: there are no patterns to be looped or repeated. If, however, an instrument part such as a bass line is very repetitive, it is possible to record the part once and then Copy it any number of times. For instance, if the verse of your song is 126 bars long and the bass line is a 2-bar phrase or riff which repeats 8 times, you may record the part once in measures 1 and 2, and then Copy measures 1 and 2 to measures 3 and 4, 5 and 6, 7 and 8, and so on up to measure 16. If the piano part on the next track is very expressive and melodic, it probably will be played over the entire 16 bars without copying. In this way, it is possible for each instrument part to be created independently with different recording techniques, depending on the type of instrument phrasing and the style of music being created.

In the accompanying diagram, you will see a graphic example of a song on the V50 sequencer, showing how the instrument voices and tracks are utilized. In the example, you can

Understanding The V50 Sequencer, Part 1. By Chris Cotton.

Here is a graphic example of a song in the V50, showing how the instrument voices and tracks are utilized.

	Instrument	Intro (8 bars)	Verse 1 (16 bars)	Chorus 1 (8 bars)	Verse 2 (8 bars)	Chorus 2 (16 bars)	Bridge (8 bars)	Verse 3 (8 bars)	Chorus 3 (16 bars)	Tag Ending (16 bars)
TRACK 1	Bass									
TRACK 2	Piano									
TRACK 3	Horns									
TRACK 4	Strings									
TRACK 5	Guitar									
TRACK 6	Synth 1									
TRACK 7	Synth 2									
TRACK 8	Percussion									
RHYTHM	Drums									

KEY: ▦ Repetitive Part   ▒ Linear Part   ☐ Not Playing

V50
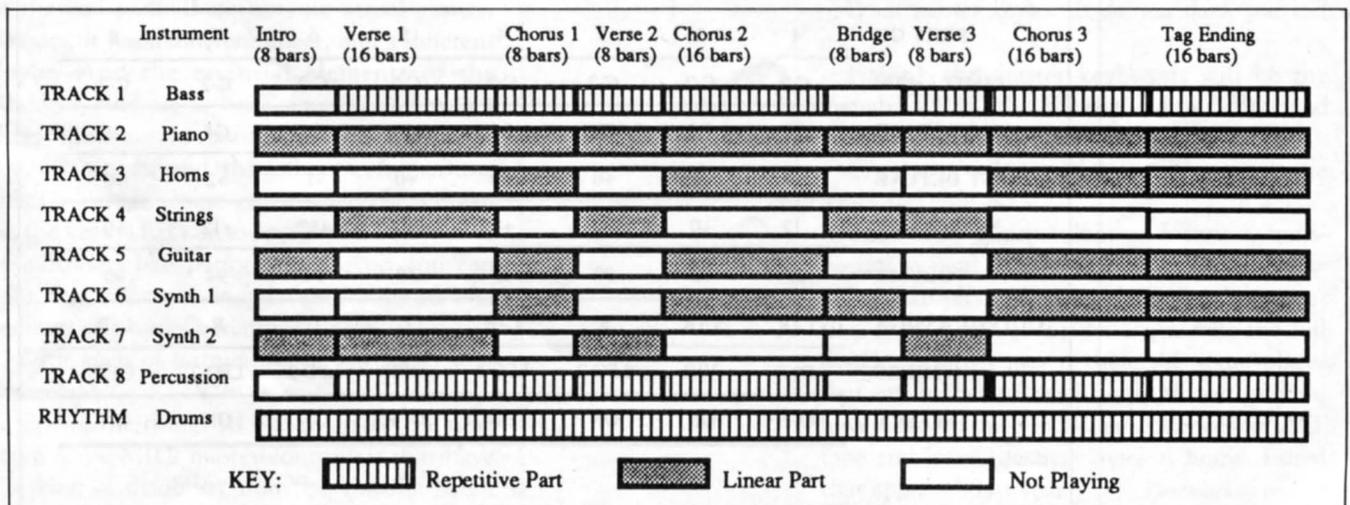
see that different instruments (tracks) are utilized at different times in the song. Also, each instrument uses different types of playing styles in each section of the song.

It is important to realize this concept in your own music in order to use the V50 sequencer most efficiently. The methods you use to create parts on the V50 sequencer will be determined to a degree by your level of keyboard playing ability. For example, if you are an advanced keyboard player, you will be more likely to create tracks in longer segments in real time. This makes it less necessary to Copy and Paste short parts. However, if you are a less advanced keyboard player, it is often easier to record shorter parts, and Copy them whenever they are repeated. This way, when you get it right once, you can use it as many times as you need. The recording technique that is best for your application will also be dictated to a large degree by the type of music you are creating, and whether it is repetitive or non-repetitive in nature.

Using A Performance

In order to create a song with the V50 sequencer, it is necessary for this song to have a Performance that accompanies it. This Performance will contain the instrumentation settings for the Sequence. If you are familiar with the song you will be sequencing, you may be able to set up the complete Performance at the start; otherwise it may be better to set up the Performance as you go. For instance, if you know exactly what you are going to create, you can probably determine the different instruments you will need and their settings before you begin the sequencing process. This way, the actual recording of the sequence will be easier because the Performance instrumentation will be pre-determined. On the other hand, if you are using the V50 sequencer as a compositional tool or writing and arranging as you go, it is better to create your instrument Performance as you record your sequence.

The V50 has a very powerful feature, which is its ability to change the instrument Performance settings in a real time as the sequence plays. This makes it possible to select and mix your instrument voices in context, as they play their respective parts. This application will be discussed in more detail in a later installment in this series. For now, just understand that it is not necessary to be overly concerned with the Performance setting as you begin sequencing. Most of the values will probably change before

Here is an example of a typical configuration of instrument settings that would be stored in a Sequencing Performance.

	INST 1	INST 2	INST 3	INST 4	INST 5	INST 6	INST 7	INST 8
ASSIGN MODE				DVA				
NOTES	0	0	0	0	0	0	0	0
VOICE NUMBER	P01	I22	I40	I 86	P11	I 61	I61	P37
RECV CH	1	2	3	4	5	6	7	8
LIMIT / LOW	C-2	C-2	C-2	C-2	C-2	C-2	C-2	C-2
LIMIT / HIGH	G8	G8	G8	G8	G8	G8	G8	G8
INST DETUNE	+0	+1	+0	+0	+0	-1	+2	+0
NOTE SHIFT	-12	+0	+0	+0	+0	+12	+12	+0
VOLUME	89	92	99	85	79	94	94	90
OUTPUT ASSIGN	L+R	L+R	R	L+R	L	L	R	L+R
OTHERS	OFF	VIB	LFO 2	LFO 1	OFF	LFO 2	LFO 2	OFF
EFFECT	OFF	ON	ON	ON	OFF	ON	ON	ON

V50 digital synthesizer.

you finish the song. It is important, however, to allocate a Performance number to the sequence you will be creating. This Performance location will contain basic settings for the sequencing process, and serve as a dedicated Performance area to accompany your sequence or song.

The V50 is capable of initializing a Performance location for sequencing. When this feature is used, the currently selected Performance can be configured for one or two basic sequencing setups, "SEQ4" or "SEQ8." Which of these two setups you will use will depend on the kind of song you will be sequencing. If you need only 4 tracks or fewer to create your song, "SEQ4" will set up tracks 1–4 for instruments. If you need more than 4 tracks, "SEQ8" will set up all 8 tracks for up to 8 instruments. Generally, using SEQ8 is a good idea to start, because it initializes all 8 tracks for instrument parts just in case you need more than 4. Initializing a Performance using the SEQ4 or SEQ8 setup will delete any existing data in the Performance location currently selected (00–99).

When the Init function is performed, the selected Performance location will become a basic instrument template or "palette" to start from, with individual MIDI channel, instrument on, volume, note limit, and so on already set at basic values. This is very useful to begin sequencing, because you will only need to make adjustments as they are necessary. When a Performance is initialized for sequencing, the Performance Name becomes the same as the Init template you have chosen. For example, when SEQ8 is selected for a Performance, the name of that Performance becomes "SEQUENCER8."

To initialize a Performance location in your V50, follow these steps. First, choose a Performance location (00–99) that is blank or expendable. Next, press the Others button in the Utility area on the V50, select the INIT function in the LCD, and finally select the SEQ8 option in the LCD. For more information on this feature, see page 177 of the V50 owners manual, "Performance Initialize." Also, there is a chart of all of the basic instrument settings for the different INIT templates, including SEQ4 and SEQ8, on page 125 of the V50 owners manual.

If you use the SEQ8 Performance as a template to begin sequencing, tracks 1–8 are already set up for up to 8 individual instruments on MIDI channels 1–8. Therefore, to start, all you need to do is plug in the Voice number of each instrument as you create each part. You may also want to adjust other settings for each instrument as you go, such as Note Shift, Volume, Output Assign, and so on. However, since you can adjust these settings while the sequence plays, it is often better to create your parts with the basic default settings (except for Voice number) and fine tune the settings later, so you can hear the effect of each change in context as the sequence plays.

. . . .

Next month, we will continue our series on the use of the V50 sequencer, by looking at tracks in more detail. We will also talk about using the V50's rhythm section in conjunction with the sequencer.

Chick Corea

CHICK COREA needs no introduction to AfterTouch readers. In his varied projects over the years, including his legendary work with Return To Forever, he has captured the musical hearts of millions. He continues to do so now with his two current bands, the Elektric Band and the Akoustic Band, both of which record on GRP.

For this interview, we caught up with Chick at his home studio, where he had just finished work on his first film score. The movie, called Cat Chaser, stars Kelly McGillis and Peter Weller, and is scheduled for a fall release.

. . . .

How did you get involved with the movie Cat Chaser?

It has been a desire of mine for years to get involved with films. I flirted with a bunch of offers through the years, but they always fell secondary to my touring schedule, my concert schedule, and my recording schedule. So, for a long time, nothing ever materialized. But one came along this year that fit into the overall plan. It was timed right, and there were a couple of months to do it, so I thought it would be a good opportunity to get started.

Did you record the entire score in your home studio?

Yeah. It was a solo deal. It was a score that needed to be done very quickly. As a matter of fact, I received the final cut about two weeks before they needed the final score. I had done a bit of work on themes and so forth before that, but nothing really falls into place for me until I can put it to the film. It's one thing to read the story, look at a rough cut, and write some things; but it really starts to come together when I see the music locked up with the film and see how well it works—that's what I found. It's mostly an all-synth score. Mark Isham came and played flugelhorn on a couple of things; he added nice, lyrical melodies.

Did you have many people working with you at the studio?

It was basically a two-man show: me and my equipment man Mick Thompson.

Was Mick running the recording?

Here's the way we worked it: Mick would help

A Musical Giant Talks About His New Film Score, His Elektric Band, His Akoustic Band, His Work With The Yamaha MIDI Grand, And More. By Tom Darter.

me set up the synthesizers a particular way for whatever I was going to work on. Then he'd go home and sleep and I'd come in and do the composing on the sequencer (like we usually do when I compose). Then I'd leave him a note before I went to bed about new things that I needed put up, or any maintenance that needed to be done, or any documentation of any stuff that I'd already done. When we finally got around to recording, we rented a 24-track Otari for the studio, and Mick did the recording: he actually took the sounds I had set up via the sequencer and transferred them track-by-track to the tape recorder.

Was all of the sequencing done on your Synclavier?

Yes, it was the master. And then I used a menagerie of sounds. And this time, I added some analog sounds into the feeling of the texture, as well as the digital sounds I've been working with over the years.

What are your main digital sounds instruments?

The Synclavier, for one: I did a lot of work with the polyphonic sampling, and also with its FM. My two Yamaha TX816s still took a bulk of the load—they're an easy access for me to a lot of different kinds of stuff. I guess those were the main digital sounds. I used some Kurzweil modules for some sweetening here and there—some tympani sounds, some drum sounds, and other various things. And then I added in other sounds.

About how much music is there in the movie?

I don't know how much total time. We filled up an album, and that was with about 75 percent of the cues. So, there's at least 50 or 60 minutes of music in this. There were about 25 to 28 different cues.

Do you have another film lined up, or are you just considering other possibilities now?

There are a couple of possibilities. I don't know if there is any point to mentioning them now, because if they didn't happen. . . . But there are possibilities that would be nice. One in particular would give me an opportunity to combine synths with orchestra, which I would really like to do.

Next time, are you going to set it up so that you have more than two weeks to compose the music?

Oh yeah. Well, I'm told by my friends who

are experienced and have done lots of movies that it's not uncommon to be squeezed down to a couple of weeks. Of course, I can't envision doing something as extensive as a full orchestral score for a whole movie in two weeks, and then fitting it to the film—that would be a little bit too much. But, for me, it did prove that a very quick solo score can be done. It's a lot of work, but it can be done.

How long have you had the Yamaha MIDI grand?

I think I first came across it a year and a half ago, and really didn't get close to it and use it on one of my projects until last year, for the *Eye Of The Beholder* touring season. I used the 7'4" model like this one. And it was great to marry the two worlds. It's one of the nicest master keyboard controllers for synthesizers that I have played. So, that combined with a really nice-sounding acoustic piano was very comfortable, to say the least. On the *Eye Of The Beholder* tour we used it everywhere. I mean, we got a different one in different areas, but I finally integrated it into the keyboard system, and it just fit in great because of the MIDI implementation and the fact that it addresses all of the synthesizers.

The next tour you're doing is with the Akoustic Band?

Yeah. This year, after making the Akoustic Band record, which was kind of a last minute decision. Even the album wasn't a heavily planned thing to do at first. It all started when I wanted to take advantage of the fact that we were going to play a week at the Blue Note for New Year's week. The trio had played several short tours before and after the Elektric Band's recording and touring last year. So, the trio was kind of happening, and I knew that it would be a blowing affair at the Blue Note. So, we arranged to have it taped. But that turned into a desire from Larry Rosen at GRP to make a record. We ended up actually doing it in the studio, after the Blue Note gig.

So, this is going to be a year of Akoustic Band gigs, this summer and fall. I'm giving the Elektric Band a little bit of a breather, to help me develop new ideas and new compositions for it, so that when we record the new record in November, I will have had some time to develop some new stuff. Because I've been on sort of a no composing-time schedule for three years. Well, I've composed, but there's not a lot of practice time in between. We've gotten home and had just enough time to write the music and make the next record, and then go out on the road again. It's been fun, but I felt I needed to take a little bit more time to prepare the next record.

Corea playing his Yamaha MIDI grand; Yamaha KX88 and Synclavier in background.

So, after the Akoustic Band tour you'll have time to work on things for the Elektric Band?

Yeah. In October will be my preparation time for the next Elektric Band record. I'm just kind of scratching the surface of that kind of live performance thing. I didn't spend that much time last year in putting my live keyboard performance setup together, so I stayed pretty well confined to a certain number of sounds. Next year, with the Elektric Band, I'm going to have more preparation time, to put together some synthesizer sounds that I'm going to be able to play live.

Does some of that include trying to figure out exactly what instruments you're going to have in your setup, or have you figured that out already?

I'm not sure how I'm going to approach it this time. I mean, generally, if I had more time, I could think about how to plan a keyboard setup that would work for the recording and then translate itself directly into a live performance. But usually the way it works is that when I arrange the recording, I don't think at all about how I'm then going to turn it into a live performance—I just go completely for the record. And then, after that I prepare the live show. I choose what the music will be on the new tour, and then set up the keyboards to accommodate that.

At one Elektric Band concert, I had the feeling that you were focusing more on the composing side of things—the showcase was more on the composi-

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tions and some of the other band members. *You played solos, but it seemed like the spotlight was on you a little bit less as a performer. Was that a conscious choice, or just a false impression I picked up?*

No, no: I think that is the case. I think that's the case generally with the Elektric Band, and has been with most of the Elektric Band. It was the case with Return To Forever too. I think my strongest performance is more in the area of acousic piano when I'm a solo performer, so I do put more emphasis in the band on arranging and composing and having keyboard parts held strongly. Plus, the synthesizers, in the style of music that I'm writing so far for the Elektric Band, don't always lend themselves to becoming melody lead instruments. It's just a matter of me developing an electric keyboard performance setup, which I've never really done, thoroughly.

Is that something you want to do?

Yeah, I do. It's something that I'm going to develop into the Elektric Band. I've got a lot of elements going now, in the Band, and this is one that I'm going to go for. It's a matter of preparation time. It's a matter of sitting down and getting the sounds on the keyboard, and getting the combinations together, and then putting them into practice. I mean, it's one thing to do it in your practice room, but it's another thing to turn it into a real powerful voice by taking it out and performing with it. I want to develop a more fluid keyboard performance.

I think part of the problem for trained pianists is that, while piano is always going to be there, electronic instruments present a whole new vista every six months. There is always something new that you have to check out in order to keep up with what's happening. Does that seem like a pressure, or is it just something exciting to explore?

It doesn't feel like a pressure, but sometimes it feels like a confusion to me. That's why, when I first put the Elektric Band together, I just took a certain amount of time playing around with new electronic instruments and new synthesizers. But then I made a cut-off point to that, and I stayed with several main instruments: the TX816s, two sets of 816s, which are still in my setup, became a staple; the Synclavier became a staple; and, at the time, the Kurzweil 250 became a staple. Now it's the Kurzweil K1000 modules that I'm using. And these instruments haven't changed for me, for years. So, in that sense, there's been a bit of stability. But, even within that limited set of instruments, there is

what seems to be an infinity of possibilities. So yes, the new instruments can be a confusion, but I don't want them to stop. I don't want the development to stop. It's too creative, and it's too fun. The other problem seems to be that you look for the instruments that give you most choice and most possibility, but sometimes companies have to put instruments together that appeal to a more nonprofessional marketplace. Not all of the developments are in the forward direction; they're more in the marketing impact direction.

That's true. Do you think there are people who have developed a pretty fluid keyboard performance?

Vangelis has. I only know Vangelis' music from a distance. I know a few of his film scores—*Blade Runner*, which is one of my favorite scores, and the one he became best known for, *Chariots Of Fire*. I also know the music that he made with Jon Anderson. Vangelis is an example, it seems to me, of a musician who has really developed as a multikeyboardist, through the years. It's his sound, and his choice of orchestrations and instruments that are recognizable; they don't vary much from project to project: He has created a sound for himself in that way. And Patrick Moraz has, as well. But there are not an overwhelming number of musicians who develop a multikeyboard sound like that.

That's true. I think most people would say that you have a recognizable style electrically and electronically, but you're talking about trying to develop it so that it is able to cover all of the musical bases you want to cover.

Yes, I'm just going to take it and see where it goes. Because I spent so many years of development as a pianist, my best performance and strongest statements as a soloist usually come out on a mechanical keyboard, like a piano or a Rhodes or something like that, and then also on monophonic solo-voice synthesizers like the early Minimoog that I used, and now the KX5 that I use for a similar kind of sound and approach. So, for me, even though I've used synthesizers for years, it's still new terrain to develop performance using other sounds: sustain sounds, string sounds, more orchestral sounds. And, if you're working in a band like I am, these things take it immediately out of the realm of being a soloist and put it in the realm of orchestration. This is the way I hear it as a composer, unless I take ten minutes in a concert and

develop some kind of electronic solo piece. But I'm going to go for it, and take it where I can with my music. I did have a nice opportunity to make multikeyboard music doing *Cat Chaser.*

Did you feel that you were essentially doing electronic orchestration for that?

It depended on the cue, but sometimes the most effective thing I found was to set up a multikeyboard setup and play it live, rather than layering things sound by sound. So it got into a bit of performance, as well, on the movie, in addition to composing a piece by layering each track with one sound at a time.

Was it the kind of film where there was a lot of requirement for very precise timing with events on the screen, or did it call for more of a through-composed sound that doesn't mimick the action?

There's a bit of both used in *Cat Chaser.* There was some music that just depicted the emotion and kept rolling and let the action alone; and then there was some music, a couple of things that actually "spiked" the action, that I thought helped the scene. In a couple of scenes, it was specifically asked for by the producer.

You mentioned things like the Rhodes. Are you still using the MIDI Rhodes in your setup at all, or are you planning to?

I don't know what the next setup actually will be. I didn't use the Rhodes sound on this particular movie. It's interesting how a sound like that, so unique as it is, gets dated very easily in people's minds. It sounds like the 70s, and so forth, although it has a certain punch. So, I'll have to find a way to reintroduce the Rhodes, so that it has a good effect.

Have you ever used any of the zillions of digital Rhodes imitation sounds that the DX7 and most of the other instruments have?

Yeah, but it's interesting: As soon as you try to copy the Rhodes sound—not copy it, but get something similar to it—then it takes it right out of the ball park. If it's not the actual punchy Rhodes, it has a different effect, and a different flavor. And the essential elements of the Rhodes sound are so basic, anyway: You've got this mellow sustain sound, you've got that high-pitched attack, and then there is something that's a little bit more gritty, as you bear down on the keys. That's an essential part of any kind of a Rhodes-like performance. And you can take that concept, and develop millions and millions of Rhodes variations on it.

What kinds of instruments do you see in your new setup?

One of the things I'd like to do for the next setup is use MIDI master controllers that have the kind of flexibility that the Yamaha MIDI

The Chick Corea Akoustic Band (L to R): bassist John Patitucci, Corea, drummer Dave Weckl.

grand piano has, the KX88 has, and the MIDI Kurzweil Midi Board has. They're powerful, you know: They can send program changes, and they can give you different kind of setups with various kinds of split keyboards. And then, because of the way the KX88 or Kurzweil Midi Board is configured, it's easy to change from setup to setup, so you can have one setup for one tune and application, and another setup for a different one.

So, would you set it up with those master keyboards on stage, and put the rack-mount stuff off-stage, so you wouldn't have to look at it all?

It would be nice. Now you're ahead of where I am in my planning—I'm not sure what we're going to produce for this next stage, the 1990s stage. I would like that. We went in that direction last year, where we removed the bulk from my keyboard area, and put things I didn't need to put my hands on back in Mick Thompson's area. He eventually ended with three or four times the equipment that I gathered around me on stage.

What master keyboards do you think you will use?

I think the master keyboards will be the Yamaha KX88, the Kurzweil Midi Board, and probably the Yamaha MIDI grand.

Do you think you'll be touring with the Synclavier also?

That "also" is dependent on location, transportation, and all of that kind of thing. I now have a two-pronged approach: If the transportation is easy enough to do, I can take the full Synclavier with me; if there are some places that are harder to reach with all the gear we have, I record the Synclavier sequences on DAT tape and leave the Synclavier at home. I used that approach last year.

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Did it work out well?

It worked out okay. We had a handful of sequencer pieces that we used, and actually it was very reliable. The only thing about it, of course, is that once it gets mixed, that's it—there's no way to change the mix on tour, which is one of the down sides. But the up side is that it's very reliable. It works every time, you don't have to worry about MIDI connections or any of that sort of thing.

All the stuff that keeps everyone busy for two hours before the concert.

I'm looking forward to a wireless setup. I'm looking forward to all of these connections going either through the air or through another technology that's being used now, fiber optics. One of the most troublesome areas of a band setup is wires. They get stepped on, and plugs get pulled. If you want to look anyplace to troubleshoot something that's not working, one of the first things you do is test wires.

Well, we've got three different kinds of wires now: AC wires, audio wires, and MIDI wires.

That's right, and many different kind of connectors: Cannon connectors, phone jacks, RCA jacks, MIDI jacks, and so on. It's pretty complex. I've heard about some very wild things being done with fiber optics. Between that and using computers, I know that we have the capability now to really streamline an electronic setup.

It would be nice. You have a Macintosh computer in your studio. Do you use it to do a lot of synthesizer voicing?

Yes I do. I have most of the OpCode programs that relate to the instruments I have. So, any time I have editing to do, I normally call up the editor on the screen. I mean, since it became a necessity to have instruments with small LCD readouts and put menus on top of menus, it is really a necessity to have the whole thing put on a screen, so that you can see what you're doing.

That's one of the things I miss about the good old analog days: there was a always a knob for everything?

Absolutely! One of the things I like very much about the Synclavier keyboard, the way it's arranged, is that it's got all of the essential buttons in front of your hands, and you can work very quickly.

I know that you have been very interested in getting the Yamaha V50 synthesizer. My impression is that the reason for this was that you wanted a unit you could compose with while on tour.

Yes. It's very portable, and it's a "work station" kind of instrument. The idea of a work station is really great. I mean, they should have made one of these things ten years ago. It's finally come around to have all the things in it that you need to make a piece of music, including *reverb*. As any musician knows, reverb is a must when you're working with electronic sounds. There are a lot of manufacturers, and it took them years to find that out!

But the V50 is great—especially for these long road trips. You can feel very, very unproductive on the road. Even through we're playing to thousands of people every night, and are having great fun making music, all of that occurs in a three-hour period during the evening. And then there's the rest of the day, the sluggish day that goes on. There is "Airport Hell," and getting from one place to another.

So, when we're on the road, we find means of trying to keep productive, reading books and listening to music. But the main thing that drops out for me when I'm on the road is composing. I can't compose when I'm on the road. I mean, I can sit down and work with things in my mind and set them down on score paper, but I can never develop an idea far enough for it to be useful. Work stations like the V50 will allow me to do that, with the 8-track sequencer, the rhythm section, the sounds, and the memory. It allows you to pick up where you left off.

What are your current feelings about acoustic pianos?

I've recently gone more and more towards using Yamaha pianos in concert. I've had experiences playing solo piano that showed me that the best brand name on a piano can be meaningless if it shows up in bad shape, or if the technician is not good. But especially if the piano is old, it doesn't matter whether it's a a Steinway or a Bosendorfer; it can be a real drag to play. What I found was that, however it was organized, when the Yamaha CF3 would arrive, it was always in great shape for me, and it was there more reliably for me to use.

Beyond that, the CF3 has qualities that I like from the Steinway, and it has qualities that I like from the Bosendorfer. It is a real tight, bright piano, with a very friendly action—a lighter action that I really like. So, I got into using the 9' CF3 grand last year on the few solo dates that I did, and I had a great time. I also used it on the Akoustic Band record. Even on the 7'4" Yamaha grand that I have in my studio,

which is the MIDI grand, the acoustic part of it is really nice. It's tight, and has a wonderful brilliance that is very attractive.

What things attract you to the CF3?

I know that there are differences in what materials are used, and there's a difference in craftsmanship, in how the action is regulated, and in how it's put together. I think it's a piano that rivals the very best pianos. By the way, I still love the Bosendorfer Imperial that I've had for years and years—they're just completely different instruments.

Is the action similar?

No, the actons are not at all similar. The Bosendorfer action is not as friendly as the Yamaha is. It takes a little bit more effort to get those keys to move down.

Stiffer, do you think?

I wouldn't call it stiff; it's just that they're heavier. Not stiff, at all—they're very fluid, and once you get rolling on it, it becomes one of the factors of the piano. But for overall performance, I like a lighter action.

Do you sometimes enjoy having the challenge of meeting up with pianos that have totally different feels? Does it bring out a different kind of music?

It does. And that's why the differences between the Bosendorfer and the Yamaha, for instance, are an aesthetic thing. I mean, I like any piano that sounds good, any piano that's in good shape and good tune and has an even action. Every piano will feel different to play; and yeah, it does bring out different things. For instance, because the Bosendorfer has so much sonic power, its strings really resonate and there's no cutoff point for its upper frequencies. So, there's a different approach when I play the Bosendorfer. It's a very different instrument, and I have to restrain myself from striking the piano in certain ways, because it can produce nasty sounds where I don't want nasty sounds, just because of the response.

When you use the TX816, do you usually use it in the mode where you're playing all 8 modules at once and getting the big, massive sound, or do you use the eight modules separately for different things?

I do both. When putting a sequence together, you can use each module as a different synthesizer, with a different MIDI channel. I do that sometimes: I'll use one module for flute and another module for bass, and so forth. I find, because of the way I've got my Cooper MIDI Boxes set up, that I can be very flexible with it—it doesn't take a lot of patching, and I can do it quickly. But I also use it to get 8-module sounds, and make them thicker and detune them, and make one slightly different from the other, and get a chorusy kind of things going.

The Chick Corea Elektric Band (L to R): drummer Dave Weckl, guitarist Frank Gambale, Corea, saxophonist Eric Marienthal, and bassist John Patitucci.

Do you work with available sounds or work out your own?

Well, there are a lot of sounds available. I'll tell you, though: in the last couple of months, as I worked on this movie project, I found a very mysterious thing about synthesizer patches. Actually, my thinking got spurred on this by reading an interview Vangelis did years ago in Downbeat. He said something, and I agreed with it, and I thought, "Yeah, I've never heard anyone else say that." The point is this: When you finally sit down with a patch and play it, whatever it is—it is how you think about it at that moment, your consideration of how powerful it is, or how beautiful it is or isn't, that does it. I mean, you know how you can sit down with a patch, and it immediately inspires you; you get into making that new musical phrase, and it's just the right sound for the phrase? Well, that patch could be on a consumer-model synthesizer. It could be a one-voice sound. It could be a sine wave. It could be anything. Do you know what I mean? It doesn't have to be some elaborate overlaid thing. But when you have found a use—musical use—for that particular sound, then you've got a winner. That's it.

So, I found that I can go through bank after bank of sounds that a friend has laid on me, or that I've found somewhere else, that are obviously the result of hours and hours of programming work—but, because it doesn't apply to what I'm trying to do at that moment, or it's not along the creative line that I'm trying to go, it will sound wrong to me. Too high, or too low, or sound too synthy, or too not synthy. So I found this funny little principle—that when I take the extra little bit of time to take a sound that's

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close to what I want, or to start from scratch and program something myself, I always come out with the usable sound. Or, when I occasionally find that patch that's from the factory, or from wherever, that totally fills the bill, it inspires me to make the phrase. Then I'm home. But I've long since given up on the idea that the ultimate patch is out there, in the world, because it's not. It's a matter of your application and what you want. There are millions of sounds out there but I like to tweak them a bit. As soon as I start to work with them, even a little bit, I find that they come out more into what I want. I mean, I can just take one or two parameters and change them very slightly, and all of a sudden, I'm feeling more comfortable.

Do you fell equally comfortable tweaking sounds on all the instruments you have, or are there some that you feel more at home with than others?

Well, you know, I'm a user-friendly advocate. I like it when it's easy and accessible. So the instruments that are easier and more accessible have tended to become more my friends, obviously. Instruments like the Roland D-50 or the Korg M-1 are popular, but their technologies are not immediately accessible to me; so it will take me longer. The Synclavier is a very user-friendly programming instrument. And I've been working long enough with the Yamaha DX, with the FM system, to know how to get around on it and do things with it.

What is your feeling about the DX7 II, the new version?

Well, as soon as I heard the DX7 II, my immediate response was, "Wow, this is step up from the DX7; it sounds better." So, my reaction was, "Convert my DX7, babe." And, "Get my 816s and do it to them." But that wasn't in the offing. So, I use the DX7 II. I like it, and it's got very good sound potential. But I only wish that I could get the sonic improvement into the 816s. Then I'd be happy as a lark.

I've learned that you can't deny your strengths. If you do, you weaken youself. If you develop a strength, why deny it? I've made that mistake, I think, in my life. I would try to get away from my strengths, to look for new ground, just because it was more fun and more of an adventure, and there seemed to be more of a win at the other end—to win with something that was unfamiliar rather than something that was familiar. But, in actual fact, after you spend time to build a strength and an ability, it becomes another strength and ability to know how to use the power that you've already developed, you see. I think Yamaha developed a strength and an ability with their FM synthesis, and the children of FM synthesis were the DX7 and the TX816s. And that was their strength in the keyboard department. It still is.

Just before the Elektric Band started, you were writing a fair amount of chamber music.

Right. The Sextet, the Septet, and finally the Piano Concerto. The Concerto never did make it to a recording; it might someday.

Was the problem logistics, or was it too expensive to record?

Not really. It was more a matter of wrong timing. I went down the road of chamber music and small group playing for a few years, and it ended off with my involvement in some of Mozart's music in several projects. The last project I did was my Piano Concerto together with the Mozard D Minor Concerto on several concerts in New York and Japan. But I found myself uncomfortably away from home base. The experience was good for me; it was like practice, and a refreshing look into another area, via classical music and chamber music. But I really missed having a band on the road, so I came back to what I felt was more "home ground" for me, which was the Elektric Band.

So, you don't have plans to do any more chamber music composing in the near future?

Well, I hope movies will afford me the chance to do the unusual orchestrations, which is one of the reasons that I want to get into them. Depending on what's needed for the film, it may be possible for me to use my abilities with orchestra and chamber music as well as my abilities with synthesizer, and combine them in some way.

Earlier, before we started the "official" interview, you were talking about a couple of books you've read recently that have to do with marketing. You said they talk bout things that, as a musician, your first thought is, "No, I don't want any part of this!" But you also said that it was useful information, because it was true. I was wondering if there's anything you've gotten out of those books that will help you in dealing with that side of music, with the business/marketing side of a music career?

Well, the books were actually recommended by L. Ron Hubbard in his management writings, which I've done a study of through the years, as an interested amateur. One of the books is called *Positioning*, and the other is

SPX Pro Series

YAMAHA HAS INTRODUCED TWO new digital multi-effects processors in its highly-successful SPX line, the SPX900 and the SPX1000. Both units were specifically designed for the demanding needs of professional audio, broadcasting, recording, post production, and live performance users. Both units utilize a second generation Yamaha proprietary LSI processing integrated circuit, the DSPII, which yields many new benefits, including enhanced processor performance and "simultaneous processing"–with up to 5 effects at one time in both "series" and "parallel" combinations.

Both the SPX900 and the SPX1000 are one rack-unit high. They feature 16-bit linear quantization, a sampling frequency of 44.1 kHz, a 90 dB dynamic range, and full frequency response on all effects from 20 Hz to 20 kHz.

Both units come with a number of preset effect programs, which will be listed later. Any of these presets can be edited, re-titled, and stored in one of the RAM (user memory) locations.

Each program has a total of four parameter groups, for great programming versatility. Each preset program has a range of "main" parameters that tailor the effect to any application, individual two-band parametric EQ and dynamic filter parameters are also provided for each effect program. In addition to these, the units offer a group of "internal parameters," which provide fine-tune control over each effect. Finally, a group of level parameters allow precise balancing between the direct and effect sound.

In both units, MIDI control reaches a new level of sophistication. Of course, all programs can be selected via MIDI, but now they can also be *controlled* via MIDI: For each program, any two parameters can be selected for real-time control over MIDI, or they can be controlled using either an external rocker pedal or footswitch. In addition to a MIDI IN jack, both units have a switchable MIDI OUT/THRU jack; when switched to OUT, edited programs stored in internal RAM can be dumped to a second unit or to a MIDI data recorder.

SPX900

The SPX900 comes with 50 preset effects programs, as follows:

1) REV 1 HALL
2) REV 2 HALL & GATE
3) REV 3 ROOM 1
4) REV 4 ROOM 2
5) REV 5 ROOM 3
6) REV 6 WHITE ROOM
7) REV 7 VOCAL 1
8) REV 8 VOCAL 2
9) REV 9 PLATE
10) REV 10 PLATE & GATE
11) REV 11 TUNNEL
12) REV 12 CANYON

SPX900 professional multi-effects processor.

SPX

13) REV 13 BASEMENT
14) PERCUSSION ER
15) GATE REVERB
16) REVERSE GATE
17) PROGRAMMABLE ER
18) DELAY L, R
19) DELAY L, C, R
20) STEREO ECHO
21) STEREO FLANGE
22) CHORUS 1
23) CHORUS 2
24) STEREO PHASING
25) TREMOLO
26) SYMPHONIC
27) ADR-NOISE GATE
28) PITCH CHANGE 1
29) PITCH CHANGE 2
30) PITCH CHANGE 3
31) MONO PITCH
32) FREEZE
33) PAN
34) TRIGGERED PAN
35) COMPRESSOR
36) DISTORTION
37) EXCITER
38) MULTI (ECH & REV) 1
39) MULTI (ECH & REV) 2
40) MULTI (CHO & REV) 1
41) MULTI (CHO & REV) 2
42) MULTI (CHO & REV) 3
43) MULTI (SYM + REV) 1
44) MULTI (SYM + REV) 2
45) MULTI (SYM + REV) 3
46) MULTI (EXC & REV) 1
47) MULTI (EXC & REV) 2
48) PLATE + HALL
49) ER + REV
50) ECHO + REV

In addition, the SPX900 has 49 RAM (user memory) locations, where edited and re-titled programs can be stored for later use.

An optional Remote Control Unit, the RCX1, has been designed specifically for use with the SPX900. The RCX1 allows direct control of all SPX900 functions, and features its own backlit LCD, so control and programming information is right where you need it. The RCX1 actually enhances the SPX900's own control capabilities by providing a fast, efficient data entry dial. This new feature lets you spin through memory locations and parameters fast

and with greater control. The RCX1 is ideal for convenient console-position control of the SPX900.

The stereo inputs and outputs on the SPX900 can be switched to match − 20dBm or + 4dBm, providing compatibility with a broad range of sound equipment.

The SPX900 professional multi-effects processor is now available from authorized Yamaha Professional Audio dealers, at a suggested retail price of $995.00. The suggested retail price of the RCX1 remote control unit is $295.00. For more information, contact Yamaha Corporation of America, Professional Audio Division, P.O. Box 6600, Buena Park, CA 90622-6600.

SPX1000

The SPX1000 comes with 40 preset effects programs, as follows:

1) REV 1 HALL
2) REV 2 ROOM
3) REV 3 VOCAL
4) REV 4 PLATE
5) REV 5 ECHO ROOM
6) EARLY REF. 1
7) EARLY REF. 2
8) EARLY REF. 3
9) GATE REVERB
10) REVERSE GATE
11) DELAY L, C, R
12) STEREO ECHO
13) STEREO FLANGE A
14) STEREO FLANGE B
15) CHORUS
16) STEREO PHASING
17) TREMOLO
18) SYMPHONIC
19) ADR-NOISE GATE
20) PITCH CHANGE 1
21) PITCH CHANGE 2
22) PITCH CHANGE 3
23) FREEZE 1
24) FREEZE 2
25) PAN
26) TRIGGERED PAN
27) DISTORTION
28) MULTI (CHO & REV)
29) MULTI (SYM + REV)
30) MULTI (EXC & REV)
31) PLATE + HALL

32) ER + REV
33) ECHO + REV
34) CHORUS + REV
35) PAN + PAN
36) COMPRESSOR
37) LOW LVL EXPANDER
38) EXCITER
39) STEREO PITCH
40) STEREO FREEZE

In addition, the SPX1000 has 59 RAM (user memory) locations, where edited and re-titled programs can be stored for later use.

The SPX1000 offers unprecedented interfacing versatility, with both analog and Yamaha-format digital inputs and outputs, plus a movable digital insert point. The stereo analog inputs and outputs can be switched to match −20dBm or +4 dBm, providing compatibility with a broad range of sound equipment. The digital inputs and outputs permit direct interfacing with Yamaha digital equipment such as the DMP7 digital mixing processor, and DEQ7 digital equalizer, and with other digital equipment via an appropriate format converter (such as the Yamaha FMC1 format converter). Of course, two SPX1000s can also be digitally cascaded for extra signal processing power. Direct digital interfacing provides improved overall sound quality, because intermediate A/D and D/A conversion stages are eliminated.

The SPX1000 also allows selection of a number of Digital I/O modes, which determine the operation and position of its analog and digital inputs and outputs, as follows:

- In ANALOG mode, the digital In connector is inactive, and the SPX1000 receives input via the analog L and R input jacks. Both the analog L and R and the digital Out connectors are active, so that the SPX1000's output can be fed simultaneously to analog and digital equipment.
- In PRE mode, input is received via the analog input L and R jacks. The digital In and Out jacks function as a pre-effect insertion point. A second SPX1000 or other Yamaha-format digital device can be inserted into the signal path prior to both the input selector and effect processor. Output is delivered via the analog output L and R jacks.
- In POST mode, the SPX1000 receives input via the analog input L and R jacks. The
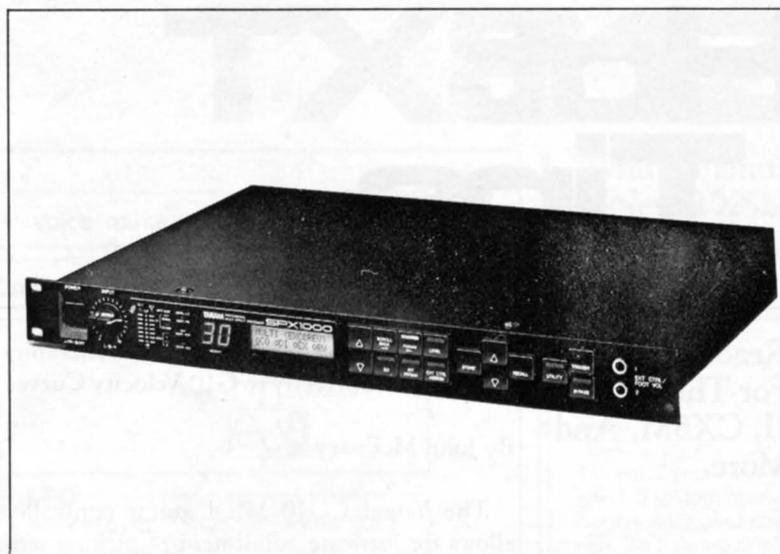
digital In and Out jacks function as a post-effect insertion point. A second SPX1000 or other Yamaha-format digital device can be inserted into the signal path after the effect processor. Output is delivered via the analog output L and R jacks.
- In DIGITAL mode, the analog input L and R jacks are inactive, and the SPX1000 receives input via the digital in connector. Both the analog output L and R and digital Out connectors are active, so that the SPX1000's output can be fed simultaneously to analog and digital equipment.

In addition to the digital I/O configurations, the SPX1000 offers a choice of input modes that provide increased system flexibility. Stereo Normal is the standard mode of operation, in which the left-channel and right-channel signals are passed on to the SPX1000 processing section on the same channels on which they were received. In Stereo Reverse, the left-channel input is fed to the right-channel processor, and the right-channel input is fed to the left-channel processor. In Mono R mode, the input signal received at the input R jack is fed to both processors, while in Mono L mode, the input signal received at the input L jack is fed to both processors.

The SPX1000 professional multi-effects processor is now available from authorized Yamaha Professional Audio dealers, at a suggested retail price of $1,795.00. For more information, contact Yamaha Corporation of America, Professional Audio Division, P.O. Box 6600, Buena Park, CA 90622-6600.

SPX1000 professional multi-effects processor.

Hot Tips

Readers Tips For The SPX90 II, CX5M, And More.

Setting Up Synthesizers And Tone Generators To Respond Correctly to G10 Velocity Curves

By John McEnary

The Yamaha G10 MIDI guitar controller allows for intricate adjustment of picking sensitivity, velocity curves, and many other parameters that control the resulting MIDI output. This is a wonderful thing, but it requires some careful planning to get the best response from the instrument. After carefully analyzing the G10's MIDI data output with a MIDI monitor program, I have discovered what I feel to be the best way to set up the G10's velocity curves, as well as something equally important—the best way to set up the connected MIDI synthesizer's response to velocity.

When I first used the G10, it didn't seem to be tracking everything I was playing. Some of the softer notes I played—especially soft trills—were not sounding. When I looked at the G10's MIDI output, I noticed that it was sending some notes with a MIDI velocity of 1. Very few key-boards send MIDI velocities as low as 1. Therefore, most synthesizers and tone generators don't respond to velocities that low, or, if they do, the sound they produce is barely audible. That explained why some notes were not "tracking" properly. The G10 was sending everything I played, but some notes were being sent at a velocity too low to hear.

I assumed that I could just adjust the G10's velocity curves and everything would be fine. So I did some experimenting with the velocity curves. The G10 has eight velocity curve levels. They are displayed in Parameter #11 (System Setup of the Utility Mode). As a test, I set all eight levels to the same value, to see if the G10 would send the same MIDI velocity value for each note played—like a MIDI keyboard that is not velocity sensitive. When I viewed the G10's MIDI output, I discovered that, while most of the notes were at the same velocity, some were much lower. The G10 was again sending some notes with a MIDI velocity of 1. Either some notes were being muted (even though I had the Mute parameter set to a minimum value of 1) or

G10 Midi guitar system.
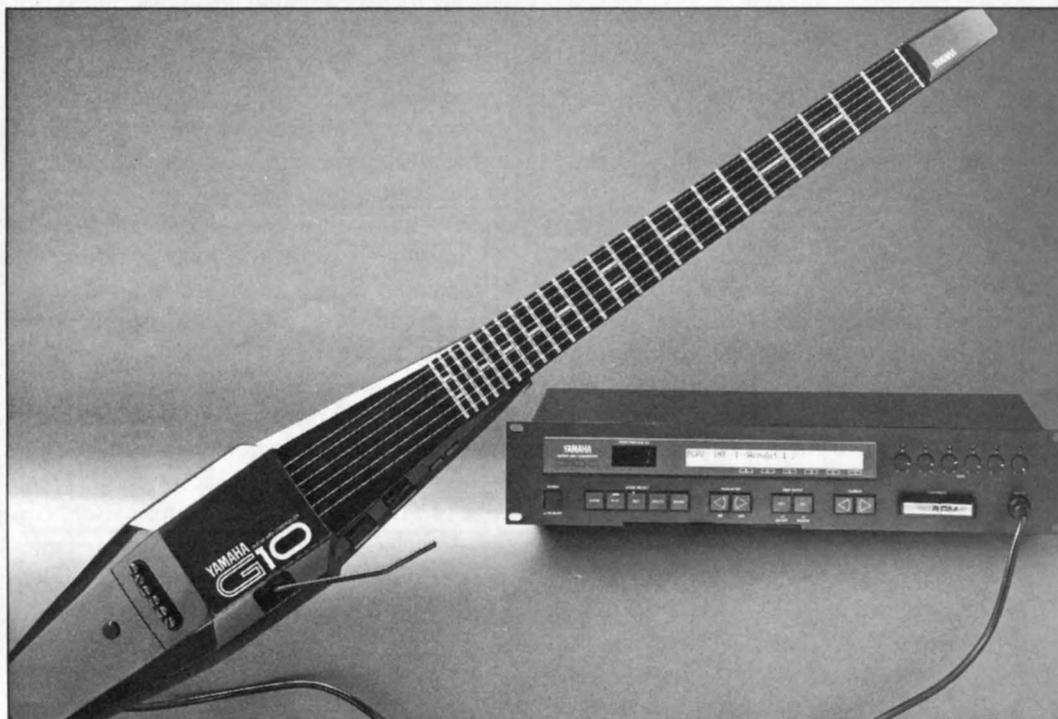
the G10 has a ninth velocity curve level that is not programmable and always sends a velocity of 1.

My solution was simple: limit the velocity sensitivity of the receiving synthesizer or tone generator. I set the G10's velocity curve to a smooth linear curve starting at an imaginary value of 1 and going up to 99. With FM synthesizers or tone generators (such as the DX7 II FD or the TX802), I lowered the key velocity sensitivity on all of the carriers and optionally lowered the key velocity sensitivity on the modulators. (The carriers are the bottom row of operators on the algorithm chart—they affect output volume; the modulators are the upper row(s) of operators—they affect timbre.)

With LA synthesizers (such as the Roland D-50), I lowered the velocity in the TVA (amplifier) for each partial in a patch. On the Kurzweil K1000, I lowered the dynamics on each layer of a program to about 24db. Every synthesizer manufacturer uses different terms, but the effect is the same.

This approach takes a great deal of time, since every synthesizer patch must be edited and saved, but it is definitely worth it. I can now hear every note that I play—including all of the wrong ones! Because the G10 is sending data over the entire MIDI velocity range, lowering the velocity sensitivity of the receiving synthesizer or tone generator does not limit my ability to play with a wide range of dynamics. In fact, I'm probably playing with a wider dynamic range than ever, because I'm confident that, whether I play softly or loudly, whatever I play will be heard.

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Creating Song Chains Using The QX5

By Al White

I own a QX5, and use a CX5M II with TWEO 1 ROM update for storage. One disadvantage that I tried to overcome with the QX5 was the inability to chain songs. I have found a way to chain three or four songs together, depending on how much memory is needed.

Load the first song in from the computer and mix down all of the tracks to Track 1, and store that to Macro 1 (leaving all of the tracks blank). Then load the second song, and use the same procedure to store it to Macro 2. The third song is stored to Macro 3.

Now Exchange Track 1, which is blank, with Macro 1 (which contains song 1). Play Track 1 to see how many measures it uses. At the end of Track 1, go into Measure Edit and create enough measures to cover Macro 2 and Macro 3. Then go to Event Edit at the end of the first song and put in a different tempo (if need be) followed by Macro 2. At the end of the first song, Macro 2 (which is the second song) will begin to play. At the end of the second song, go to Event Edit again to insert whatever tempo change is needed and Macro 3 (which is the third song). All three songs will end up playing in succession.

The interesting thing about this procedure is that the measures created after the first song can be in any time signature. The first song could be in 4/4, the next in 3/4, and the third in 12/8 or whatever. By changing the tempos, you can make an interesting chain.

In order to store the chain, you have to store it in two parts, unless you use a cassette. I have found that three or more songs contain more memory than the CX5M II will hold in one lump. However, when you load the two parts back into the QX5, it remembers where everything fits in Track 1, and the Macros will all be in their correct place.

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Building Front Legs For Yamaha Electronic Pianos

By Bruce L. Hammond

The Yamaha Clavinova and PF2000 series of electronic pianos each weigh about ninety to one-hundred pounds, and are quite stable on a tile or wood floor. On a thick carpet with padding, however, some slight wobble can be experienced when using the pedals or when playing rapid, forceful passages. While this slight instability does not affect the sound quality, it is

Hot Tips

noticeable if you are accustomed to playing an acoustic piano.

Most of this wobble can be eliminated by fabricating simple front legs for these pianos. For about five dollars and an hour's labor, matching black legs can be built and installed. The additional support under the relatively heavy key action easily relieves the movement of the stand on the carpet.

First, purchase a six-foot section of unwarped, 2-by-2 pine. Measure the distance from the floor to the undersurface of the piano at the front left and right corners. Now carefully saw the 2-by-2 to the correct lengths to create the two spindles (front legs).

Next, remove the small screws that are already installed in the front corners of the piano, and insert steel or aluminum 1-by-1 corner braces (used in furniture construction) using the existing screws. Now, insert the spindles under the front corners to test for the proper fit. If necessary, use coarse sandpaper to remove excess from the spindle to create a perfect fit.

Now sand and paint the finished spindles using a latex gloss finish to match the piano. Install the spindles with the small braces facing the rear of the instrument. The vertical portion of the corner brace should lie on the back side of the spindle. Install them with the screws provided with the instrument, using 1" wood screws to secure the spindles to the braces. Most people will think the new front legs were part of the original instrument.

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Four New CX5M Voices

By P.J. Otto

The complete parameter listings for these four new voices are given in the accompanying diagrams. Here are a few notes on each program:

eguitar: This is an authentic electric guitar sound. Setting the AMS to 2 creates a classic tremolo effect.

th pia: This is a thick electric piano sound. It works well with sustain.

e organ: This is a powerful electric "pipe organ" sound.

fbsynth: This is a feedback synthesizer sound. Increasing the decay of the first two operators increases the speed of the feedback effect.
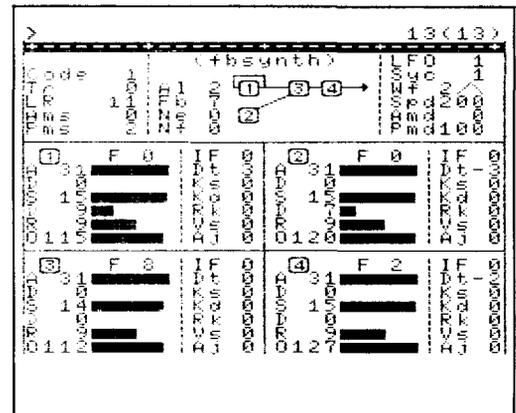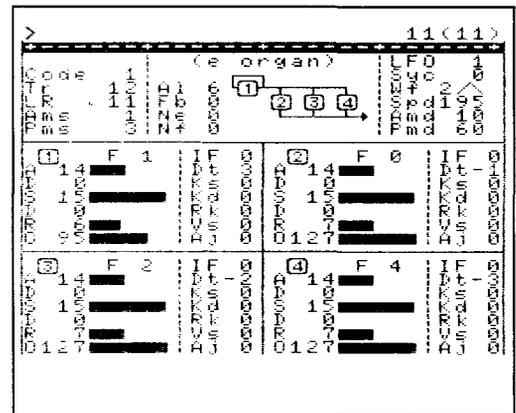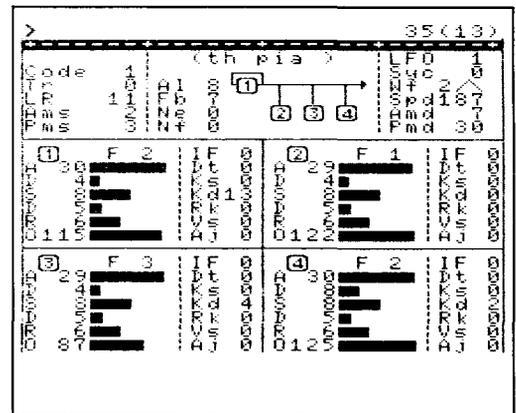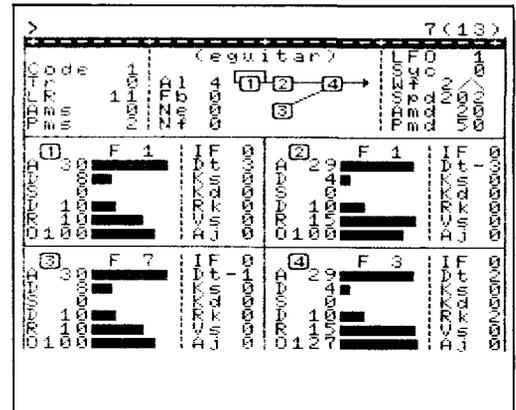
Creating A Vibrato/Tremolo Effect With The SPX90 II

By Todd Mizenko

For a long, long time, I (as well as other guitarists) have been looking for a vibrato/tremolo effect created without the hindrance of modulation. The effect I was searching for was similar to the 60's Ventures sound.

Well, after much searching, I ended up at the Compressor program of the SPX90 II. This program is ideal because there is no modulation. The first important element in this tremolo program is setting the Attack and Release times to the same value. The lower the value, the faster the vibrato. The second important element involves the settings of the Trigger Mask and Hold Time parameters: Hold Time regulates the time between vibrations, and Trigger Mask sets the time that must elapse before the signal can be triggered again.

Here are two possible tremolo programs:

Medium Tremolo (From preset #19)
    Trigger Level: 1
    Trigger Delay: 0 ms
    Trigger Mask: 150 ms
    Attack: 19 ms
    Hold: 55 ms
    Hold Level: 0%
    Release: 19 ms
    MIDI Trigger: OFF

Slow Tremolo (From preset #19)
    Trigger Level: 1
    Trigger Delay: 0 ms
    Trigger Mask: 260 ms
    Attack: 32 ms
    Hold: 90 ms
    Hold Level: 0%
    Release: 32 ms
    MIDI Trigger: OFF

One of the great things about sound is that the application of simple mathematics can keep things sounding good. For this effect, some of the parameter value are preset amounts apart, but as a general rule the Trigger Mask value should be in about a 2.7-to-1 ratio to the Hold time. Also, the Hold time should be in about a 3-to-1 ratio to the Attack and Release rates.

Sometimes the tremolo effect will cut out when ending. This will usually occur when the Trigger Mask drops below a certain level for a given set of parameters. For example, on the Medium Tremolo program above, the tremolo effect will cut out if the Trigger Mask drops below 87 ms (this also occurs on the Slow Trem-olo program when the Trigger Mask drops below 150 ms). One solution is to recall the program and go through it with trial and error. Another solution is to judge how fast a tremolo you want, set a base value on one parameter (like Trigger Mask), and obtain the rest of the values mathematically.

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Four New Harmonizer Patches For The SPX90II

By Brian W. Hunsberger

I would like to share some of the patch programs I've developed for the SPX90 II. These are all harmonizer effects, which vary from a slight pitch change to a full octave above and below the input signal. Also utilizing delay, these programs work great with guitar and a stereo amplifier setup, or by going direct to a mixer and panning the two channels right and left. You will find that these patches are superb for both the studio and the stage:

Angel's Flight (from preset #23)
    L Pitch: +0
    L Fine: +10
    L Delay: 7.7 ms
    R Pitch: +0
    R Fine: −10
    R Delay: 7.7 ms

Eloquently (from preset #23)
    L Pitch: +0
    L Fine: +8
    L Delay: 5.0 ms
    R Pitch: +0
    R Fine: −8
    R Delay: 50.0 ms

Lower Horizons (from preset #23)
    L Pitch: −12
    L Fine: +0
    L Delay: 5.0 ms
    R Pitch: +0
    R Fine: +0
    R Delay: 25.0 ms
    Balance: 65%

Divided We Stand (from preset #23)
    L Pitch: +12
    L Fine: +0
    L Delay: 125.0 ms
    R Pitch: −12
    R Fine: +0
    R Delay: 25.0 ms
    Balance: 40%

C1 Users Central

L AST MONTH we took a look at how MS-DOS duplicates some of the common tasks of the Mac Finder–checking disk contents, changing the default disk drive, and creating folders (or subdirectories, as they're known in DOS). This month we'll finish our quick tour of DOS by examining ways to move files and navigate through subdirectories.

Moving Files

On any computer, moving files is a fairly common practice. For instance, when you create a new folder on the Mac, you usually wind up moving files into it from other folders. The procedure is simple: you just select the desired files with the mouse and drag them over.

Unfortunately, this procedure is slightly more difficult in DOS because there isn't a single command that moves files from one directory to another. Instead, moving files is a two step process, where you first copy the files to the new directory and then delete the original files.

When we finished last month, we had just created a subdirectory called NEWIDEAS (remember, subdirectories are simply the DOS equivalent of a Mac folder and can pretty much be treated the same way). Now, let's say we're in the root directory of the same disk and we've got a file named SONG1.SEQ that we want to move to our NEWIDEAS subdirectory. The first step of this process is to copy the file to the NEWIDEAS subdirectory using the DOS Copy command.

The Copy command has a fairly logical form–you type the world **copy**, followed by the name of the file and then the destination for the copy. You must always remember to insert a space after the word **copy** and between the filename and destination. So, in order to make a copy of the SONG1.SEQ file you would type **copy song1.seq newideas**, which, translated into English, is something like "copy the file SONG1.SEQ to the subdirectory NEWIDEAS." When you press ENTER there will be a small pause as the copying takes place,

and then you'll see "1 File(s) copied" before the DOS prompt reappears.

You could just take DOS's word for it that the file was correctly copied and delete the original version of the file–if you like living dangerously. A better plan would be to actually check that the correct file has been copied and that the original and copy are the identical size before doing anything too drastic to your original file.

Changing Directories

In order to see the contents of a subdirectory (which is like opening a Mac folder), you have two choices. You can use the Directory command and check the contents by typing **dir newideas**, or you can actually change the current directory to the NEWIDEAS directory.

To move to a different directory, you use the Change Directory command. From the root directory, you would type **cd newideas**, and press ENTER to make NEWIDEAS the current directory. How do you know you actually have changed directories? Type **dir**. You'll see the SONG1.SEQ file sitting by itself in the directory to give you your first clue. If you look just above it, though, you'll see the message "Directory of A: NEWIDEAS" to confirm that you have indeed changed directories. Whenever you're in doubt about what directory you're currently working in, type **dir** and check the "Directory of..." message above the filenames.

Before you return to the root directory to delete the original version of the file, check the number that follows the SING1.SEQ filename. This is the size of the file in kilobytes. If the copy was successful, this number should match the number that follows the original filename in the root directory. After you've checked, go back to the root directory by typing **cd ** and pressing ENTER.

Deleting Files

The second step of the file move procedure is to delete the original file. First, type **dir** and

check the number following the SONG1.SEQ filename to make sure it matches the size of the copied file you checked a moment ago. If the size matches, you're ready to delete the orginal file using the DOS Delete command. At the DOS prompt, type **del song1.seq** and press ENTER. You'll see the upper disk light go on for a moment and then the DOS prompt will reappear. Type **dir** to confirm that the file is actually gone.

As you typed the Delete command, it may have occurred to you that there were two files with the SONG1.SEQ name on the disk. You certainly don't want to delete both your original and copied file, but how will you know which file DOS will erase? Most DOS commands look only in the current directory for filenames typed at the DOS prompt, so you must make sure you're in the right directory before you use them. For instance, you might decide to rename your SONG1.SEQ file to SONGOLD.SEQ. If you tried to use the Rename command from the

root directory by typing **ren song1.seq songold.seq** (in English—"rename the file SONG1.SEQ to SONGOLD.SEQ"), you would see the error message "Duplicate file name or File not found" when you pressed ENTER, becaue DOS can't find SONG1.SEQ in the root directory. You would have to change the current directory to NEWIDEAS before you could successfully execute this command. If this seems a bit strange to you, keep in mind that it really isn't all that different from the way you deal with file manipulation on other computers. On the Mac, for instance, you have to open the proper folder before you can rename or delete files.

Beyond DOS

Now that you've gotten a feel for what it's like to work with DOS, next month we'll be looking at a few programs that make your DOS work a little simpler.

News

not be able to send the publication to unpaid subscribers beginning with the July '89 issue. Make your checks and money orders payable to *AfterTouch* .

Yamaha Corporation of America wants to thank you all for the support you've given to *AfterTouch* in the past few years. We encourage all of you to stay on top of your music and your Yamaha instruments by supporting this continuing Yamaha users-group publication, now from Tesladar Communications.

Yamaha Divisional Name Change

As most *AfterTouch* readers know, Yamaha Corporation of America is a very large music company; and, as is necessary with most large companies, Yamaha has always been divided into a number of Divisions. Without these corporate subdivisions, it would be impossible for Yamaha employees to monitor the needs of the customers interested in one particular line of musical products.

Earlier this year, Yamaha merged its DMI (Digital Musical Instruments) Division with other former Divisions, to create the new SGD (Synthesizer, Guitar, and Drum) Division. This was done to better serve the common ground of customer need and demand found in these previously separated Divisions.

Increased AfterTouch Coverage

AfterTouch began as a publication serving the needs of the customers of Yamaha's DMI (Digital Musical Instruments) Division. Given the recent change in Yamaha's Divisional structure, it will not continue as a publication devoted solely to the needs of the new SGD (Synthesizer, Guitar, and Drum) Division. In addition, Yamaha's Pro Audio Division (makers of such wonders as the SPX90 and the DMP7) has joined the *AfterTouch* family. Therefore, from this issue forward, *AfterTouch* will be an official users group magazine for customers of the Yamaha SGD (Synthesizer, Guitar, and Drum) and Pro Audio Divisions.

V50 Video

The SGD Division of Yamaha Corporation of America has begun distribution of a promotional video demonstrating its recently introduced V50 digital synthesizer. "V50 Private Ses-

sion," available at authorized Yamaha SGD dealers, highlights the complete production capabilities of the V50. Filmed in a musician's home studio, the video details the step-by-step creation of a musical composition using the V50's professional quality synthesizer, sequencer, PCM drum machine, and digital effects systems.

"V50 Private Session" was produced by Killingsworth Presentations of Long Beach, California. J.P. Lincoln provided the script, soundtrack, and musical performances. For more information on "V50 Private Session," see your local authorized Yamaha dealer.

V50 Guidebook Set

A collection of Guidebooks for the V50 is now available. Combining a Performance Voicing Guidebook, a Rhythm Programming Guidebook, and a Sequencing Guidebook, this new collection covers all basic aspects of V50 operations. It comes complete with a demonstration Data Disk. For more information, see your local authorized Yamaha dealer, or contact Yamaha Corporation of America, SGD Division, Literature Department, P.O. Box 6600, Buena Park, CA 90622-6600.

V80FD Dropped

The V80FD digital synthesizer, which was announced in the January, 1989, issue of *AfterTouch*, has been dropped by Yamaha. The instrument will not be put into production, and therefore will not be available in stores.

After listening to much valuable feedback concerning the V80FD at the Winter 1989 NAMM Show in Anaheim, California, Yamaha decided that it would be more efficient to incorporate what it learned into its next generation top-of-the-line synthesizer, rather than spending months to build changes into a unit that would become obsolete with the introduction of that next generation. Watch the pages of *AfterTouch* for more information on the successor to the V80FD.

Chick Corea

called *Marketing Warfare*. It's not a subject that a musician naturally studies. Marketing and management are different viewpoints, sometimes ones that conflict with the creator and the founder and the artist–the one who creates the product. As a musician, you don't normally think about your image, or, I don't anyway, or what's eventually going to happen to the song I'm going to write, or if it is going to be called jazz or fusion or classical. Do you know what I mean?

But, these are considerations, they're very real considerations, that you would hire a business manager to take care of, or hope that someone handling your record or your tour can take care of. Because, the overall intent is to communicate. Art is a communication. So there must be an audience. And, in the world, there are techniques and technologies focused on how to bring things to people–how to present it to them, how to develop public relations, how to advertise, and so forth. Which is, to me, kind of a new subject, and something I'm interested in. I wouldn't propose to give anybody any advice, though, at this point.

But you do think it's not a bad idea to look into it, to find out how that kind of thinking works?

Well, here's what any artist should be able to understand, and where I basically come from on this subject. You make music. If you have an intent to share it, to communicate it, to get it across the some people, then you have to see that process through: whether it's through a business manager or as something you do yourself. And I think the more I can learn about every part of my life, the more effective I can be.

So, since our intent as musicians is to communicate, it is a good idea to know at least *something* about the business side of our lives, and especially how to finalize the process of the

song that we wrote, of the band that we put together, of the record that we made–to insure that it gets into the listener's hands in a way that's going to create the effect we want to leave.

And the effect that we want to have is easy to understand: you know the effect that you want to have on another by knowing the effect you love created on yourself. You want to have them be entertained, and lightened up, and smoothed out, and become happy. So there's this whole thing that happens to a composition after it's composed, and that's the subject of marketing and getting it out to the public.

Is there anything else that's been on your mind recently that you'd like to share with other people who are into electronic music?

I think we've covered the things I've been thinking about recently. I would like to reiterate a couple of things that I think are important about what we've been talking about:

One thing is the fact that instrument developers keep on developing new products, and the technologies keep on getting refined and developed. New ways of synthesis keep getting developed. I think, personally, that this is a great, wonderful, positive thing in the world. It's a creative thing, and something that I particularly encourage and like to feel a part of.

On the other hand, as a musician, sometimes you have to step back out of all of the technical developments and go back to basics again, and realize that music and art are a communication. There is a simplicity in making music, and the in effect of how it makes someone feel. So, with all of these technical developments, the basic intent remains the same. I think it has been that way for eons–it is something that won't change, ever. So there is something so stand on, no matter what.