AFICIONADO™

THE OFFICIAL PUBLICATION OF THE YAMAHA USERS GROUP

G10 MIDI Guitar System

JUNE 1988

YAMAHA®

Opportunity Rocks.

You've been waiting for a break. This could be it.

On September 16, your band could play in the ultimate showcase—a concert at the Universal Amphitheatre in Los Angeles for an audience of music industry professionals.

You could win $25,000 in cash or equipment, record a demo with a professional producer, consult with music industry lawyers, managers, agents and public relations experts, and perform live at the Budokan in Japan.

SOUNDCHECK: The Yamaha International Rock Music Competition is open to unsigned bands. To enter, all you need is a tape of your band playing two original songs and an official entry packet, available only at Participating Authorized Yamaha Dealers.

Make your break with SOUNDCHECK, the only rock music competition run *by* professionals *for* professionals. And rock on the door of opportunity.

Advisory Board

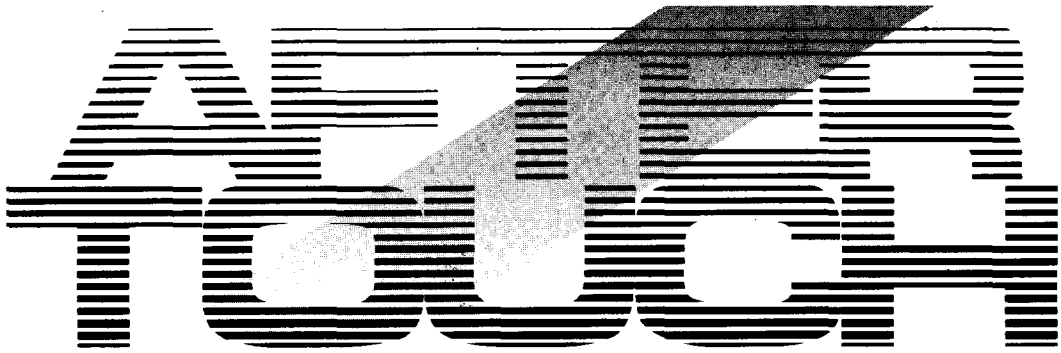
All Revenues From SOUNDCHECK: The Yamaha International Rock Music Competition Benefit The T.J. Martell Foundation For Leukemia, Cancer And AIDS Research

A&M Records
Gil Friesen
John McClain
Aerosmith
Peter Asher
Atlantic Records
John Carter
Avalon Attractions
Roy Thomas Baker
B&M Magazine
Pat Benetar & Neil Geraldo
BoDeans
Bon Jovi
John Branca
Capitol-EMI
Joe Smith
Capitol Records
David Berman
CBS Records
Walter Yetnikoff
Tony Martell
Peter Catera
Cinderella
Andre Cymone
Martha Davis
DeMann Entertainment
Freddy DeMann
EMI-Manhattan Records
Bruce Lundvall
Epic Records
Don Grierson
The Fitzgerald Hartley Co.
Keith Forsey
Glenn Frey
Frontline Management
Siedah Garrett
David Geffen
Geffen Records
Eddie Rosenblatt
John David Kalodner
Global Satellite Network
Guns N' Roses
Heart
Don Henley
Hits Magazine
Roger Hodgson
Bruce Hornsby
Billy Idol
Jimmy Iovine
Island Records
Chris Blackwell (Jamaica)
Michael Jackson
The Jacksons
Billy Joel
Quincy Jones
Kingdom Come
Daniel Lanois
Pat Leonard
Kenny Loggins
Madonna
MCA Records
Irving Azoff
Jheryl Busby
Michael McDonald
McGhee Entertainment
Doc McGhee
Joni Mitchell
Motley Crue
MTV
Carol Robinson
Musician Magazine
Keith Olsen
Mr. Mister
Steve Perry
L. Lee Phillips
Poison
Polygram Records
Lori Harbough
Prince
Phil Ramone
Ratt
RCA Records
Paul Atkinson
R.E.M.
Lionel Richie
Robbie Robertson
Linda Ronstadt
Charlie Sexton
Billy Sheehan
Sheila E.
Sting
Supertramp
Toto
U2
Van Halen
Virgin Records
Jeff Ayeroff
Jordan Harris
Warner Bros. Records
Mo Ostin
Michael Ostin
Warner/Chappell Music
Chuck Kaye
Jody Watley
Tom Werman
Whitesnake
Stevie Wonder

SOUNDCHECK
THE YAMAHA INTERNATIONAL ROCK MUSIC COMPETITION

For More Information And The Location Of Your Nearest Participating Authorized Yamaha Dealer, Call 1-800-451-ROCK

© 1988 Yamaha Corporation Of America



June 1988

Volume 4, Number 6
Issue #33

4 **BASS SAX**
A new DX7 voice created by Mark Phillips.

5 **DREAM SEQ**
A new DX7 voice created by Mark Phillips.

6 **PIANODROPS**
A new DX7 voice created by David Rubinstein.

7 **METAL SYN**
A new DX7 voice created by Brian Silverman.

8 **Hot Tips**
Reader tips for the DX7 II, SPX90, and more.

10 **G10**
A detailed introduction to Yamaha's new MIDI Guitar System. By Vincent Bitetti.

17 **Questions**
Answers to questions from readers.

19 **Back Issues**
Important information for all AfterTouch readers.

Editor
Tom Darter

Operations
Sibyl Darter

Editorial Board
Charles Feilding
Bob Frye
Rick Hewitt
Mark Koenig
J.P. Lincoln
Phil Moon
Jim Smerdel
Steve Thatcher

Cover Photograph
Jim Hagopian
Dee Dee Cawley

AFTERTOUCH is published monthly. Third class postage paid at Long Prairie, MN and additional points of entry.
SUBSCRIPTIONS: Free. Address subscription correspondence to AFTERTOUCH, P.O. Box 7938, Northridge, CA 91327-7938. **POSTMASTER:** Send form 3579 to P.O. Box 7938, Northridge, CA 91327-7938.

©1988 Yamaha Music Corporation USA. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronically, mechanically, photocopying, recording, or otherwise, without the prior written permission of Yamaha International Corporation.

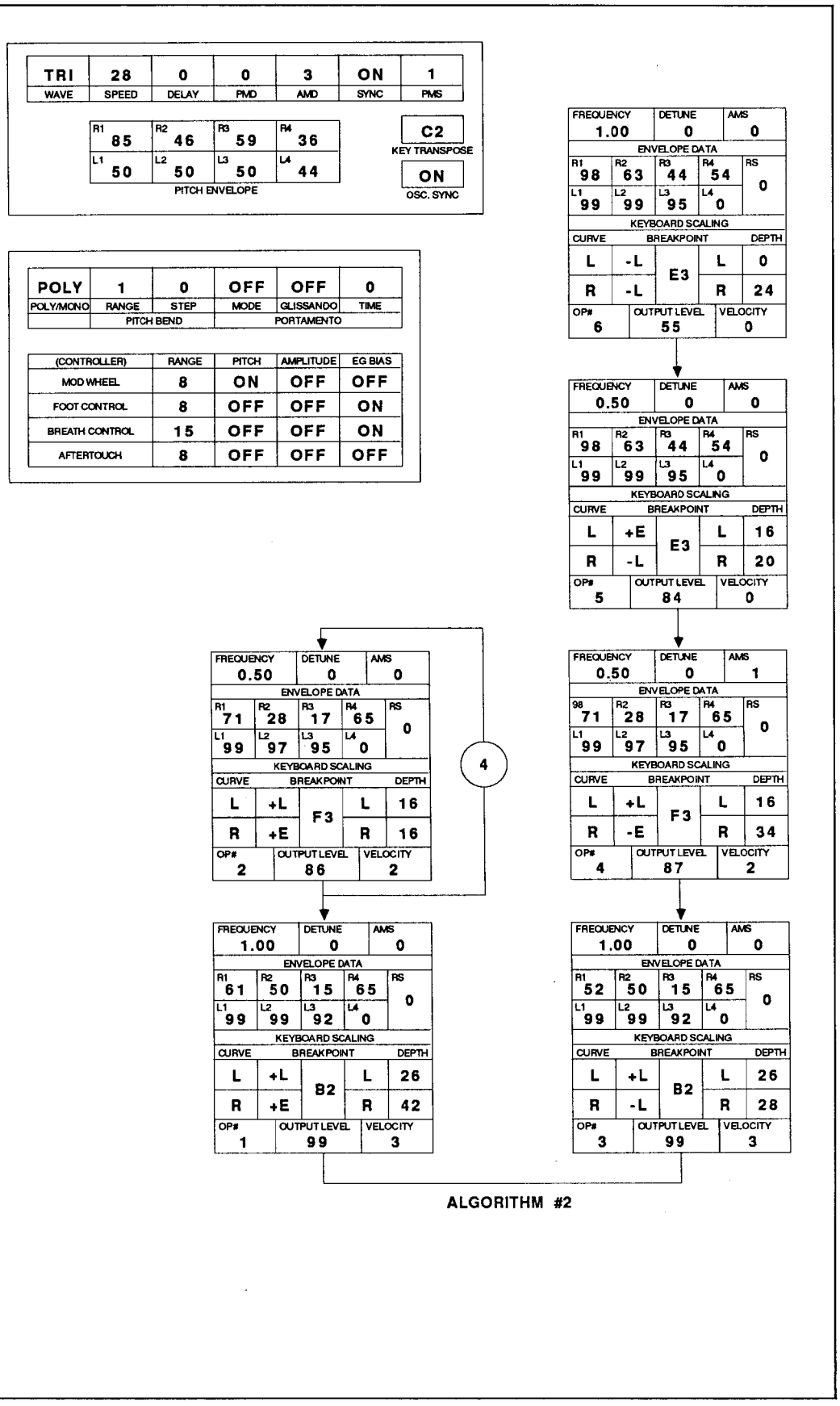
DX7

BASS SAX. A New DX7 Voice By Mark Phillips.

Notes:

This voice is part of an on-going series in search of the "ultimate sax" patch–as yet undiscovered. The Foot Controller is used to make changes in the timbre over a fairly wide range of possibilities. (Of course, any of the other controllers could also be used for the same purpose.)

This patch is probably best used for single-note passages.



DX7

DREAM SEQ. A New DX7 Voice By Mark Phillips.

TRI	36	36	38	2	OFF	3
WAVE	SPEED	DELAY	PMD	AMD	SYNC	PMS

R1	R2	R3	R4
18	60	95	60
L1	L2	L3	L4
48	51	50	50

PITCH ENVELOPE

C3 — KEY TRANSPOSE

ON — OSC. SYNC

POLY	7	0	OFF	OFF	0
POLY/MONO	RANGE	STEP	MODE	GLISSANDO	TIME
	PITCH BEND		PORTAMENTO		

(CONTROLLER)	RANGE	PITCH	AMPLITUDE	EG BIAS
MOD WHEEL	15	OFF	OFF	ON
FOOT CONTROL	15	OFF	OFF	ON
BREATH CONTROL	15	OFF	OFF	OFF
AFTERTOUCH	8	OFF	OFF	OFF

FREQUENCY	DETUNE	AMS
2.00	0	2

ENVELOPE DATA

R1	R2	R3	R4	RS
19	26	53	25	0
L1	L2	L3	L4	
46	56	71	46	

KEYBOARD SCALING

CURVE	BREAKPOINT		DEPTH
L	-L	A-1	L 0
R	-L		R 0

OP#	OUTPUT LEVEL	VELOCITY
2	54	3

FREQUENCY	DETUNE	AMS
1.02	+3	0

ENVELOPE DATA

R1	R2	R3	R4	RS
10	19	41	12	0
L1	L2	L3	L4	
48	58	20	0	

KEYBOARD SCALING

CURVE	BREAKPOINT		DEPTH
L	-L	A-1	L 0
R	-L		R 0

OP#	OUTPUT LEVEL	VELOCITY
4	92	3

FREQUENCY	DETUNE	AMS
2.04	+1	3

ENVELOPE DATA

R1	R2	R3	R4	RS
14	72	48	17	0
L1	L2	L3	L4	
53	47	41	0	

KEYBOARD SCALING

CURVE	BREAKPOINT		DEPTH
L	-L	A-1	L 0
R	-L		R 0

OP#	OUTPUT LEVEL	VELOCITY
6	99	2

0

FREQUENCY	DETUNE	AMS
1.00	-7	0

ENVELOPE DATA

R1	R2	R3	R4	RS
59	53	53	30	0
L1	L2	L3	L4	
99	94	97	0	

KEYBOARD SCALING

CURVE	BREAKPOINT		DEPTH
L	-L	A-1	L 0
R	-L		R 0

OP#	OUTPUT LEVEL	VELOCITY
1	99	0

FREQUENCY	DETUNE	AMS
1.00	+7	0

ENVELOPE DATA

R1	R2	R3	R4	RS
59	53	53	30	0
L1	L2	L3	L4	
99	94	97	0	

KEYBOARD SCALING

CURVE	BREAKPOINT		DEPTH
L	-L	A-1	L 0
R	-L		R 0

OP#	OUTPUT LEVEL	VELOCITY
3	99	3

FREQUENCY	DETUNE	AMS
2.02	-1	1

ENVELOPE DATA

R1	R2	R3	R4	RS
31	21	36	37	0
L1	L2	L3	L4	
99	90	85	0	

KEYBOARD SCALING

CURVE	BREAKPOINT		DEPTH
L	-L	A-1	L 0
R	-L		R 0

OP#	OUTPUT LEVEL	VELOCITY
5	99	1

ALGORITHM #5

Notes:

This voice was designed for a dream sequence in a film score. Detuning provides a complex vibrato pattern. Relatively slow attack envelopes on some operators (and slow decays on all) cause the sound to evolve gradually.

The Mod Wheel and the Foot Controller are set up to effect subtle changes in the timbre. (Of course, any of the other controllers could also be used for the same purpose.)

This patch is effective when used for chords with staggered attacks and releases.

DX7

PIANO-DROPS. A New DX7 Voice By David Rubinstein

Notes:

This voice has a soft digital reverb effect with a medium long sustain. It is useful in slow, melodic-feeling passages.

WAVE	SPEED	DELAY	PMD	AMD	SYNC	PMS
SAW DOWN	29	0	0	99	ON	0

R1	R2	R3	R4
99	99	99	99
L1	**L2**	**L3**	**L4**
50	50	50	50

PITCH ENVELOPE

C3 — KEY TRANSPOSE

ON — OSC. SYNC

FUNCTIONS

POLY/MONO	RANGE	STEP	MODE	GLISSANDO	TIME
POLY	12	1	OFF	OFF	0
	PITCH BEND		PORTAMENTO		

(CONTROLLER)	RANGE	PITCH	AMPLITUDE	EG BIAS
MOD WHEEL	97	ON	OFF	ON
FOOT CONTROL	0	OFF	OFF	OFF
BREATH CONTROL	99	ON	OFF	ON
AFTERTOUCH	30	ON	ON	OFF

OP 3

FREQUENCY	DETUNE	AMS
5.00	+2	1

ENVELOPE DATA

R1	R2	R3	R4	RS
95	28	27	47	2
L1	**L2**	**L3**	**L4**	
99	90	0	0	

KEYBOARD SCALING

CURVE	BREAKPOINT	DEPTH
L	-L	0
R	-E	99

BREAKPOINT: D0

OP#	OUTPUT LEVEL	VELOCITY
3	79	5

OP 6

FREQUENCY	DETUNE	AMS
1.00	0	1

ENVELOPE DATA

R1	R2	R3	R4	RS
95	28	27	47	2
L1	**L2**	**L3**	**L4**	
99	90	0	0	

KEYBOARD SCALING

CURVE	BREAKPOINT	DEPTH
L	-L	0
R	-L	0

BREAKPOINT: A-1

OP#	OUTPUT LEVEL	VELOCITY
6	59	3

OP 2

FREQUENCY	DETUNE	AMS
1.00	+2	2

ENVELOPE DATA

R1	R2	R3	R4	RS
88	92	71	63	2
L1	**L2**	**L3**	**L4**	
99	67	91	90	

KEYBOARD SCALING

CURVE	BREAKPOINT	DEPTH
L	-L	0
R	-L	13

BREAKPOINT: C3

OP#	OUTPUT LEVEL	VELOCITY
2	88	4

OP 5

FREQUENCY	DETUNE	AMS
1.00	+3	3

ENVELOPE DATA

R1	R2	R3	R4	RS
83	0	27	50	2
L1	**L2**	**L3**	**L4**	
99	90	0	0	

KEYBOARD SCALING

CURVE	BREAKPOINT	DEPTH
L	-L	0
R	-L	0

BREAKPOINT: A3

OP#	OUTPUT LEVEL	VELOCITY
5	67	2

OP 1

FREQUENCY	DETUNE	AMS
1.00	0	3

ENVELOPE DATA

R1	R2	R3	R4	RS
83	28	23	35	2
L1	**L2**	**L3**	**L4**	
99	85	0	0	

KEYBOARD SCALING

CURVE	BREAKPOINT	DEPTH
L	-L	0
R	-L	15

BREAKPOINT: A#3

OP#	OUTPUT LEVEL	VELOCITY
1	99	4

OP 4

FREQUENCY	DETUNE	AMS
1.00	0	0

ENVELOPE DATA

R1	R2	R3	R4	RS
85	28	23	50	3
L1	**L2**	**L3**	**L4**	
99	85	0	0	

KEYBOARD SCALING

CURVE	BREAKPOINT	DEPTH
L	-L	0
R	-L	15

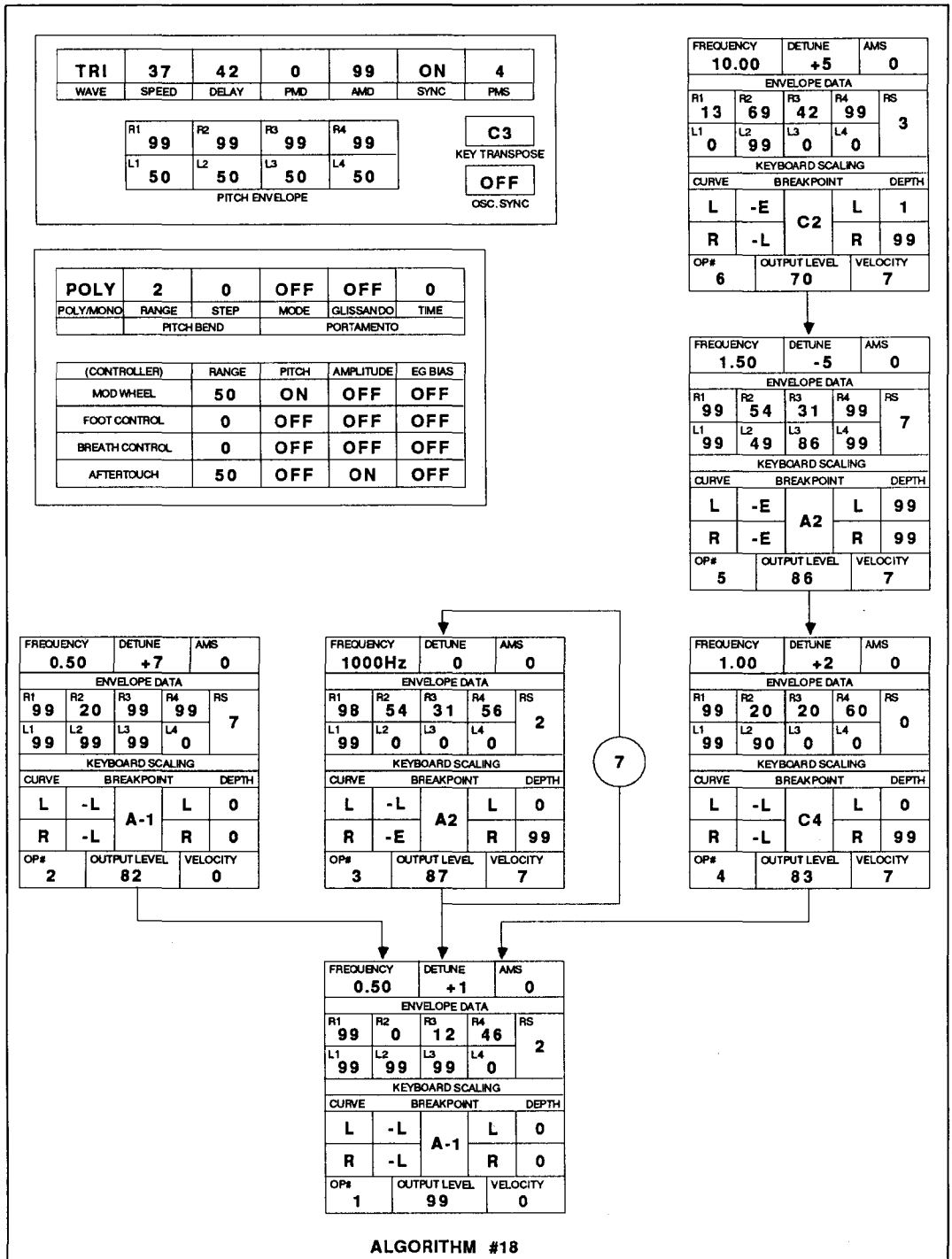
BREAKPOINT: A3

OP#	OUTPUT LEVEL	VELOCITY
4	98	3

5

ALGORITHM #4

METAL SYN. A New DX7 Voice By Brian Silverman.



ALGORITHM #18

These DX7 voices can also be loaded into all the other Yamaha 6-operator FM digital synthesizers and tone generators, including the DX5, TX7, TX216, TX816, TF1, DX1, DX7s, TX802, and DX7 II FD/D.

Hot Tips

Reader Tips For The DX7 II FD, SPX90, And More.

SPX90 Patches For Use With Electric Guitar

By Mathew Gurman

Here are a few SPX90 patches that are useful for recording electric guitar. I use these on album and jingle sessions all the time with a RockMan Sustainor, and they kill!

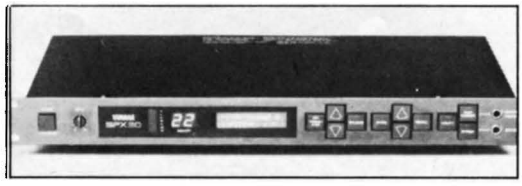
In each case, I have given my name for the patch, followed by the preset number from which it was constructed, and finally the relevant parameter and front panel values.

Razor Boy (a gate effect, from preset #17)
Type: Reverse
Room Size: 0.5
Liveness: 5
Delay: 1.0 ms
LPF: Thru
Output Level: 100%
Balance: 90%

Irritating Octave (a Harmonizer effect, from preset #21)
Base Key: C3
Pitch: +12
Fine: +4
Delay: 0.1 ms
FB gain: 30%
Output level: 100%
Balance: 50%

'62 Fender (vintage tremolo, from preset #14)
Mod Frequency: 5.5
Mod Depth: 100%
Balance: 100%
Output Level: 100%

Burnin' Strat (a Hi EQ effect, from preset #30)
LPF: Thru
Delay: 0.1 ms
HPF: Thru
Mid Freq: 500 Hz
Mid Q: 5.0
Mid Gain: +10
High Freq: 2.8
High Gain: +8
High Q: 0.5
Balance: 100%
Output Level: 100%



SPX90 digital multi-effects processor.

'57 Chevy (a 50s slap echo effect, from preset #7)
L Dly: 57.0 ms
LFB: +5%
R Dly: 57.0 ms
RFB: +5%
High: 1.0
Balance: 30%
Output Level: 100%

The '57 Chevy patch is set up as a monaural slap echo effect. To get a stereo effect, set one side to 0 ms, and leave the other side set to 57 ms.

• • • •

A REV7 Reverb Program

By Ken Como

This program has helped greatly in creating a wider groove in dance tracks. Start with the Early Reflection 2 preset, #6, and use these settings:

LIVENESS: 10
INITIAL DELAY: 40.0 ms
FIRST DELAY: 10.0 ms
FIRST LEVEL: 0
MODE: 5
ROOM SIZE: x20.0
DIFFUSION: 10

This program can be used for either acoustic or electronic snare drums, as well as drum machines.

• • • •

Storing QX5 Sequence Data Using The DX7 II FD's MDR Feature

By Max Hunsicker

Despite what you may have heard, the disk drive on the DX7 II FD is capable of storing QX5 sequence data. The size of the unit's buffer limits the amount of data that can be stored in a single file; but, by saving individual tracks, you

DX7 II FD digital FM synthesizer.

can usually break the sequence into small enough pieces to fit.

To save files from the QX5 to the DX7 II FD, make the proper MIDI connections, and then follow these steps:

1) On the QX5, press LOAD/SAVE with SHIFT. Use the JOB key until "MIDI TRANSMIT" shows in the LCD window.
2) On the QX5, choose which tracks you wish to save. Keep an eye on how much memory is used.
3) On the DX7 II, insert the disk on which you want to store the sequence.
4) On the DX7 II, use the DISK utility (button #16) to call up the Disk MDR menu.
5) On the DX7 II, move the cursor to IN.
6) On the DX7 II, input your file name; you must use all eight spaces. You may want to indicate the tracks that are on the file, with a title like "Louiex23."
7) On the DX7 II, press YES. The unit will ask "Are you sure?" Press YES again, and the DX7 II will be ready to accept data.
8) On the QX5, press START.
9) After the DX7 II indicates that it has received the file from the QX5, make sure to press NO to store the data from the buffer to the disk. If you do anything else, the data will be lost.
10) Repeat this process as often as necessary, until you have loaded your entire sequence.

To load sequence data back into the QX5 from the DX7 II, follow these steps:

1) On the QX5, press LOAD/SAVE with SHIFT. Use the JOB key until "MIDI RECEIVE" shows in the LCD window.
2) On the QX5, specify what you want it to receive. (ALL clears everything in the memory. This sounds good, except when you are loading several files to complete one sequence.) I prefer to specify which tracks I want to receive. For each file, specify the tracks that are loaded into the DX7 II file you are about to load.
3) On the DX7 II, use the DISK utility (button #16) to call up the MDR menu.
4) On the DX7 II, select the file you wish to transmit. Then, move the cursor to OUT.
5) On the DX7 II, press YES.
6) On the QX5, press START.
7) Now, on the DX7 II, press YES again to initiate the transfer.

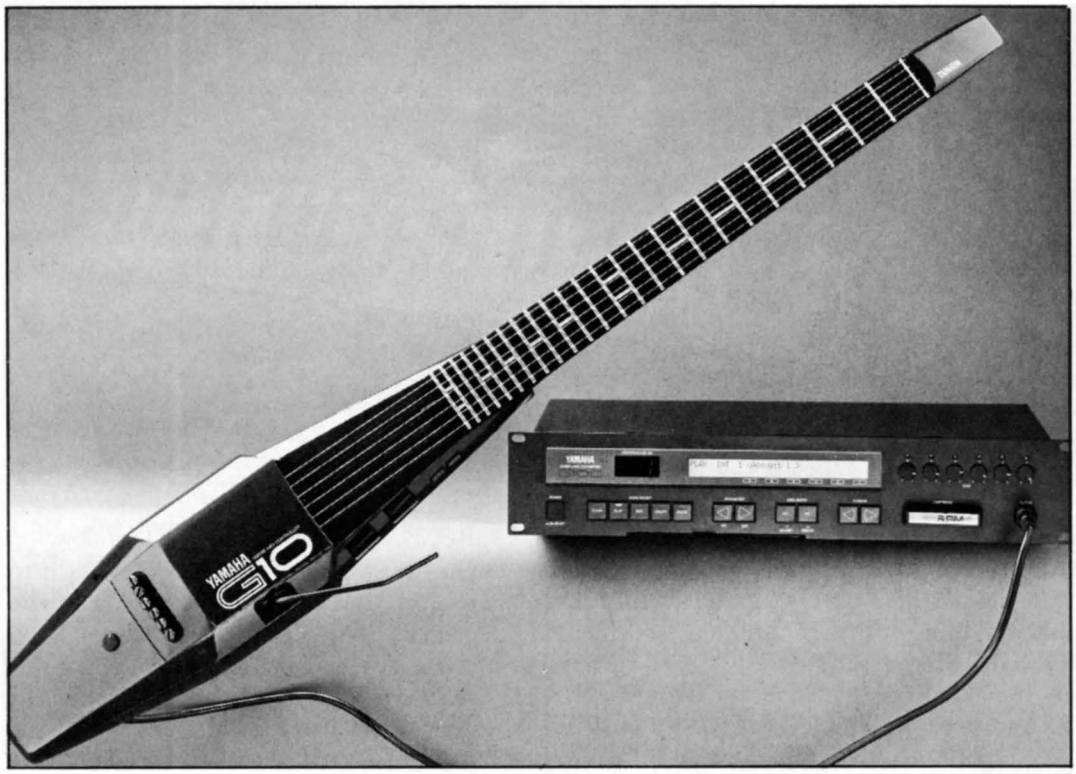
Although this method of storing to disk may seem cumbersome, in practice it becomes quite natural after a while. I find it much faster than storing to cassette tapes, and much more reliable.

* * * *

QX5 digital sequence recorder.

G10

A Detailed Introduction To Yamaha's New MIDI Guitar System. By Vincent Bitetti.



G10 MIDI Guitar System.

WITH THE INTRODUCTION of the G10 MIDI guitar system, Yamaha cordially invites guitarists of all persuasions to join the MIDI revolution. Although guitar synthesizers have been commercially available since the early 1970s, until now it was almost impossible for guitarists to use common, standard playing techniques–much less their own stylized techniques–while playing these instruments. Unlike previous attempts to interface the guitar with the synthesizer, the G10 succeeds where the others fail. Its patented tracking system, which utilizes ultrasonic (sonar), photo-optical, and amplitude sensing detection (all assisted by high speed micro processors), makes the G10 the fastest, most accurate, glitch-free system to date.

Also, unlike most other systems, the G10 guitar is a dedicated controller, allowing the guitarist to enter the world of MIDI on a no-compromise basis. Although a MIDI controller by definition (the G10 guitar for instance, does not use a standard set of guitar strings, nor is it "tuned" like a normal guitar), the G10 MIDI guitar is more guitar-like than any of the other MIDI guitars that also double as standard electric guitars. The problems inherent in the other systems that are currently available are basic.

Because of the physics involved in standard electric guitar design and production, and the subsequent installation of the special pickups and sensors that the instrument needs to communicate with MIDI, there is a limit as to just how well these types of instruments can work. The most common problem involved is a delay factor, which affects response time in relation to how fast a given note will actually sound after it's been picked. The average delay time is about 20 milliseconds; this can be much longer or shorter, depending on which string you are on and which register you're playing in.

The general rule of thumb with standard guitar "synth" systems (using one method of tracking and a standard set of strings) is this: "Play in the higher registers as much as possible." The reason for this is that the smaller the guitar string diameter, the faster it cycles (vibrates); thus, the faster the pitch can be analyzed and translated into MIDI data. And, since different size strings vibrate at different speeds, this causes delays of differing lengths, which does not make for a natural feeling instrument. Research has demonstrated that the guitarist is very sensitive to millisecond delays. A good guitarist can detect 10 milliseconds easily, and will not tolerate much beyond that. The G10 peaks out at about 5 milliseconds, which is far below the perceptible range.

The G10 avoids the problem outlined above by being a dedicated controller. Its advanced tracking mechanisms, combined with a set of strings that are all of the same diameter, create a whole new standard for guitar controllers. The G10 has the distinction of being its own instrument; think of it as an entirely new instrument designed with guitarists in mind. While the G10 MIDI guitar is a radical departure from those old fashioned systems, it is also an eloquent solution to the inherent problems that have existed with all guitar controllers so far. Part of Yamaha's design philosophy is to make their instruments "musical," and to provide working tools for today's players. And, in the tradition of their current MIDI controllers (electronic percussion systems, master keyboards, strap-on performance keyboards, and wind controllers), the G10 is a giant step forward in the evolution of the electronic guitar.

The system comes in two component parts: The MIDI guitar and the rack-mount MIDI converter. The G10 MIDI guitar controller communicates your playing to the G10C MIDI converter, which contains all relevant data pertaining to your own specialized techniques and modes of expression. This information is then sent over MIDI to a MIDI synthesizer for translation into electronic signals that are sent to a sound reinforcement system for audio output.

In this article, we will cover the G10 MIDI guitar controller and the G10 MIDI converter separately. Although some of the accompanying diagrams may seem a bit complicated at first, the G10 is actually simple to use. Any guitar player who makes the effort to commit to a MIDI guitar system like the G10 will not be disappointed. As the old saying goes, "Anything worth having is worth working for." A word about the G10 system owners manual: It is excellent. It is divided into two sections, and includes numerous pictures, diagrams, charts, LCD screen displays, and simple, detailed explanations. From simple guitar maintenance (with elaborate close-up pictures of all procedures) to complex system examples, this manual covers a great range of material.

G10 MIDI Guitar Controller

Before getting into the G10 guitar controller, let's first review some of the ingredients that go into the making of a fine electric guitar:

- Playability (How well does it play? How does it feel? How "fast" is the neck? Is there high fret access for soloing?
- Construction (Is it well balanced? How is the weight? Where are the controls placed? Are all the modern conveniences included? How does it look?)
- Sound (How does it sound? Does it get a variety of tones? Can I use it with my effects rack?)

Yamaha design engineers have provided us with an instrument that looks great and is comfortable to play. It plays like a fine electric lead guitar. It has a "fast" neck with jumbo frets, and provides the highest fret access possible. The instrument is perfectly balanced, the weight is excellent (about 5 lbs.), and all standard guitar controls (and some not so standard controls) are ergonomically placed for fast, easy access.

There are many modern conveniences and functions that make the G10 the ultimate tool for the guitarist. Imagine a guitar that never needs tuning; imagine a tremolo system (whammy bar) that never goes out of tune. The tremolo arm is also assignable; besides acting as a standard pitch bend device (with a range of up to an octave up or down), it can be assigned to any number of MIDI control change functions. There's also an assignable mod wheel, which is placed next to the volume control, and a breath controller input jack, for access to expressive breath techniques that have never before been available for the guitarist. There's even an LED indicator on the body (with corresponding increment/decrement buttons) for communication of patch change information between the guitar and MIDI converter–at a glance you always know where you are. Also included on the guitar itself is a string sensitivity control knob, which allows you to make instant adjustments of the overall picking sensitivity without ever having to touch the MIDI converter.

The G10 extracts pitch data via an ultrasonic (sonar) detection system within the guitar itself. The fingered fret is determined precisely by analyzing the reflected sonar wave. Using this proprietary method, pitch information is available immediately, so there is no response delay. The string bend and velocity sensors work with the sonar to provide a natural response from picking to strumming. You can even bend, mute, pull-off, and so on, all with precision and accuracy. The G10 utilizes six guitar strings, all

of which are of the same diameter for ultra-fast MIDI response while playing. Because of the quality construction of the controller itself, this is easy to get used to. Lead guitarists will have no problem adapting to the difference in feel.

The look and feel of G10 guitar is as sleek and sexy. This is a modern instrument for modern times; it was conceived with today's musician in mind. The sound is nothing short of stunning. Hook the G10 up to a TX802 or a TX81Z FM tone generator and, with no programming required, discover a world of textures and colors you've only dreamed of. Electric guitars, acoustic guitars, classical guitars, bass guitars, hybrid guitars, synthesizer guitars, huge digital synthesizers, and anything else you can dream of (including drum and percussion sounds). Combine these sounds with standard guitar and pro audio signal processing, and you will have a complete range of sounds and textures that have (up until now) have been solely the domain of the keyboardist.

Armed with the G10, the guitarist has yet another axe to add to his or her arsenal. There are new playing techniques to be discovered and explored, and traditional techniques to be rediscovered and looked at from a fresh perspective. With the additon of the G10, the guitarist can finally enter the world of the electronic keyboardist, and with an attitude!

G10C MIDI Converter

Because the G10 comes ready to play out of the box, virtually no set-up is required. A complete set of patches for both the TX81Z and TX802 FM synthesizers is contained within the G10 MIDI converter. These sounds have been voiced especially for use with the G10 system, and reside in permanent memory (ROM) within the G10C. All you need is either a TX81Z or TX802 and a MIDI cable to download the FM sound data to the appropriate tone generator.

Once attuned to your style and technique (or various styles and techniques), the G10 system's "brain" takes on a unique personality–yours! Almost all of the G10C's parameters are programmable, and can be stored to internal memory or cartridge for fast access during live performance. That is, they are remembered by the G10 in 64 different internal performance areas. There is also a provision to store 64 more performances on RAM cartridge, as well as the ability to store TX81Z FM data.

Before discussing these various programmable modes, sub-modes, and functions, let's look at one example of the kind of information that might reside in a G10 performance patch. Let's say you're well versed in rock, jazz, and some classical guitar. The G10C would be programmed for three separate performances, each allowing for the different techniques that will be employed. For rock, you might want the performance to reflect an aggressive playing technique assaulted with a heavy pick hand. To do this, simply set up a rock performance using a heavy hand to set the Sensitivity, Velocity Curve, Mute level, and so on. With jazz, you may use a lighter, smaller pick and a more controlled technique, while with classical you would program the performance using your fingers. Get the idea?

Also, with such "global" parameters as Velocity, Sensitivity and Bend Curve for each string, you can program the G10 to suit both your normal picking strength and the exact bend range that you desire for each string.

The G10C has five basic modes of operation: Play mode, Chain mode, Store mode, Edit mode, and Utility mode. Let's look at each one of them in more detail.

This diagram gives an "initialized" factory-supplied performance setup for the G10C.

STRING	6	5	4	3	2	1	***PARAMETER***	
PARAMETER							Performance name	INT Performance
Program Number	1	1	1	1	1	1	Pitch Bend range	1 2
Transmit Channel	6	5	4	3	2	1	Arm (P. bend max.)	+ / - 4
Volume	99	99	99	99	99	99	Arm (Control name)	Off
Open Tuning	E2	A2	D3	G3	B3	E4	Wheel (Direction)	Up
Trigger Mode	Normal						Wheel (Control name)	Mod. wheel
Capotasto	OFF						Foot switch	Sustain sw.
Legato	ON						Foot controller	Foot ctrl.
Velocity Assign	1	1	1	1	1	1	***Notes:***	
Sensitivity Offset	0						This is a factory supplied 'initial' performance	
Mute	4	4	4	4	4	4	set-up and is for reference only.	

Play Mode

As its name implies, this is the mode you will be in while playing the G10 guitar. Both G10 performances and their corresponding synthesizer voices are accessed while in this mode. When you go to a rock performance on the G10C, the corresponding synth might go to a rock guitar patch; it might even go thru a guitar signal processor such as distortion or delay. You can switch patches from the guitar, a footswitch, or a MIDI foot controller such as the MFC2. This mode also selects which memory group you'll be accessing. The memory groups are as follows:

- INT (Internal RAM): Up to 64 of your own custom performances.
- CRT (External RAM cartridge): Up to 64 of your own custom performances.
- P1 (TX802 preset performance data): 64 Yamaha-supplied performances, so you can play right away.
- P2 (TX81Z preset performance data group A): 24 Yamaha-supplied performances, so you can play right away.
- P3(TX81Z preset performance data group B): 24 Yamaha supplied performances, so you can play right away.

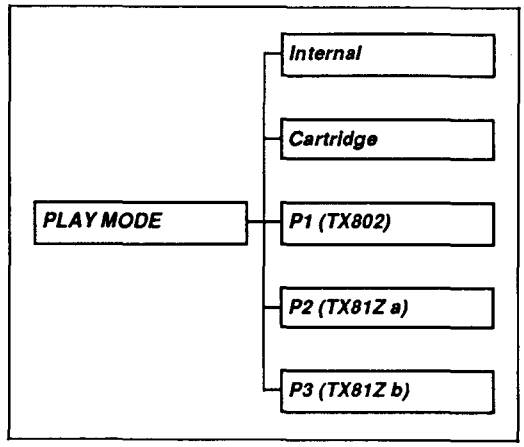
The Play mode gives you a wide variety of playing options. (See the accompanying diagram.)

Chain Mode

The Chain mode allows the user to program up to four different chains of G10 performance memories corresponding to the voices on the tone generator. For example, let's say you want to play performances 12, 55, 64, 01, 37, and 61, in that order. All you need to do is program a chain. A chain can have up to 20 steps in it, and there are 4 chains available to program. Chains can be edited at any time at the players discretion and convenience. Chain mode has two possibilities, Chain Play and Chain Edit.

Store Mode

Store mode allows the user to store all changes pertaining to a performance to either an internal or cartridge location. The store function can be accessed directly from the Edit, Play, or Chain modes.



Flow chart showing the functions and parameters available in the G10C's Play mode.

Edit Mode

Ninety-nine percent of customizing the G10 to your own playing styles and techniques is programmed in this mode. Screens in this mode are numbered 1 through 12 on the G10C's LCD screen. (See the accompanying diagram.)

1) **Program:** This parameter determines the MIDI program change number transmitted by the G10C when the current performance memory location is selected. In other words, it ensures that when you change a patch on the G10, the corresponding synthesizer also goes to the selected patch. Program numbers can be assigned to a common value (all strings on the same patch) or to an individual value (each string with a different patch assignment).

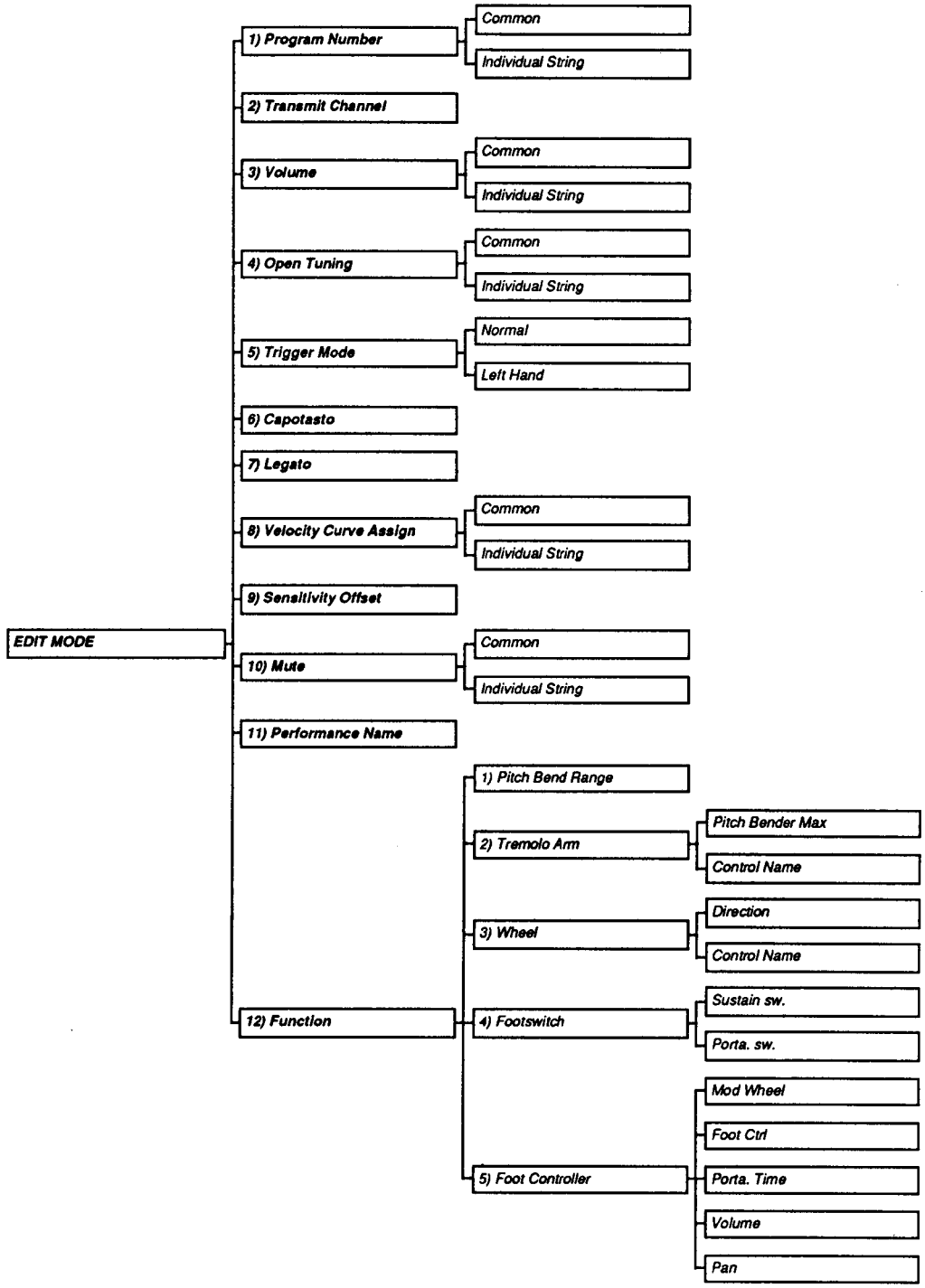
2) **Transmit:** This parameter determines the MIDI channel on which each string will be transmitting MIDI information.

3) **Volume:** This parameter determines the MIDI volume for each string. You have the option of assigning all strings to the same volume (by using the common feature), or assigning different volumes to individual strings.

4) **Open Tuning:** This parameter determines the tuning in the G10C. Any tuning desired can be programmed here. Once programmed, the Common feature can be used to transpose all strings up or down.

5) **Trigger Mode:** In the Normal trigger mode, the G10 responds to standard playing technique (pick with the right and fret with the left). In the Left Hand mode, it is

Flow chart showing the functions and parameters available in the G10C's Edit mode.



the fretting hand that actually triggers the notes to play (you can of course use both hands in Left Hand mode if you desire). Techniques a la Van Halen are easily accomplished in Left Hand mode.

6) **Capotasto:** In the same way you would use a capo on a standard guitar to transpose, this parameter can be set to any fret from 0 through 23. In other words, this is an "invisible" capo that never gives you any trouble.

7) **Legato:** When the Legato parameter is engaged, sliding your fingers across several frets on a single string causes a smoth, natural, guitar-like slide. When this parameter is off, the pitch at each fret is heard separately, producing a glissando-type effect.

8) **Velocity Curve Assign:** This parameter is one of the most important. You can customize four Velocity Curves (in Utility Mode) for recall during a performance. There are also four factory-supplied curves for your use. A velocity curve is simply a relationship between the strength with which a string is picked and the output level it produces. With a total of eight velocity curves at your fingertips, almost any playing style can be achieved.

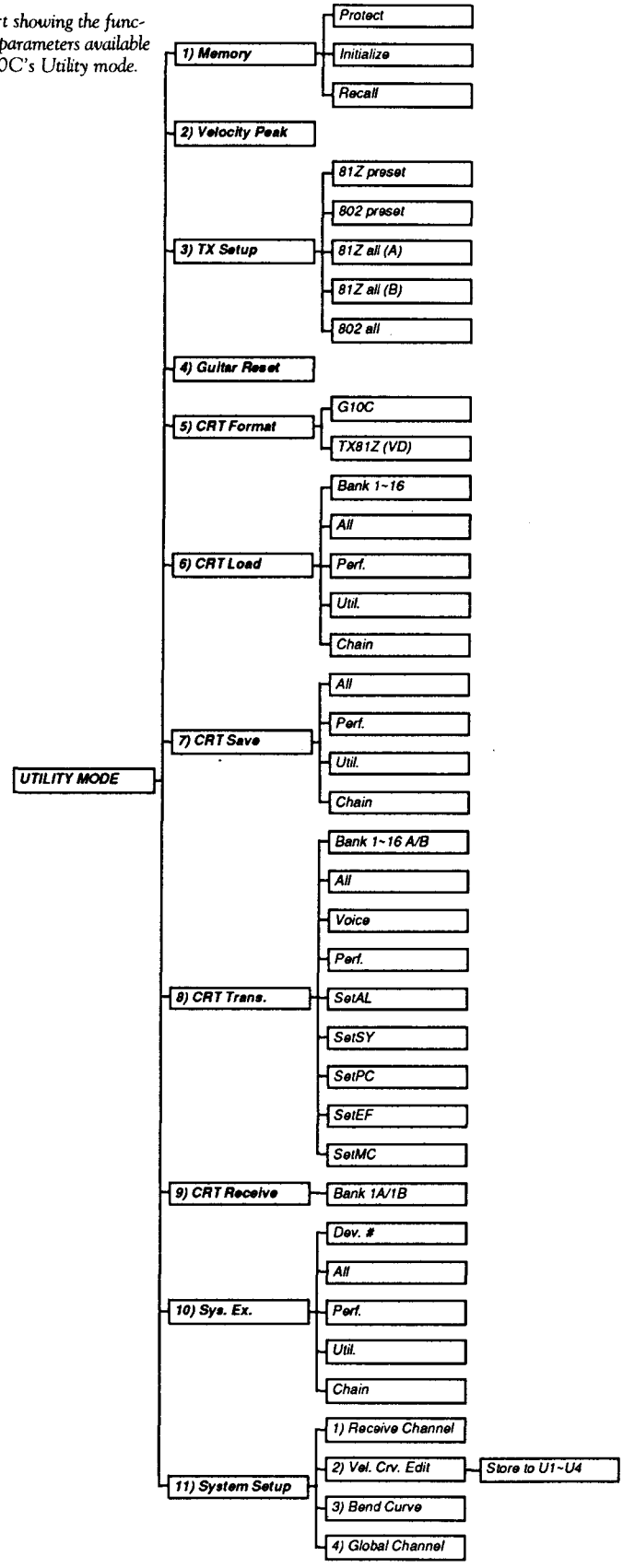
9) **Sensitivity Offset:** The overall sensitivity of the G10 can be adjusted by using the sensitivity control knob on the body. However, if you find that you require different sensitivity for different voices, the Sensitivity Offset parameter allows you to adjust individual voice sensitivity over a wide range.

10) **Mute:** The Mute parameter serves a dual purpose. First, it allows you to simulate muting as on a standard guitar; however, since the G10 is a MIDI instrument, muting on it is not exactly the same as muting on a regular guitar (but is easy to work with). The Mute parameter also prevents any erroneous MIDI note-on messages from firing accidentally.

11) **Performance Name:** The Performance Name parameter makes it possible to create a name or title for any given performance location.

12) **Function?:** This is not actually a param-

Flow chart showing the functions and parameters available in the G10C's Utility mode.



eter, but rather a prompt asking you if you wish to access the five available Edit functions that pertain to string bend response, controller functions, and footswitch operation.

Utility Mode

The Utility mode contains a range of utility (housekeeping) functions, including jobs that involve memory management, cartridge formatting, TX set-up, and initial Velocity settings. The screens in this mode are numbered 1 through 11 on the G10C's LCD screen. (See the accompanying diagram.)

1) **Memory:** This utility group includes all of the functions you need for memory management: Protect On/Off, Initialize, and Recall (in case of accident).

2) **Velocity Peak:** The velocity peak display makes it easy to set the G10C's Gain controls to an optimum setting for your individual picking strength.

3) **TX Set-Up:** This utility function allows setting up a TX802 or TX81Z FM synthesizer to use the preset voices and performance data contained in the G10C.

4) **Guitar Reset:** This utility serves two functions. First, it resets the G10 to its initial settings in case of pilot error. Second, it performs a diagnostic test (which is also performed every time you turn the G10C onto ensure proper callibration for tuning and other operations.

5) **CRT Format:** The Cartridge Format function is used to format blank RAM cartridges for storage of G10C performance data or TX81Z voice data.

6) **CRT Load:** This function loads G10C performance data from an external cartridge into the G10C's internal memory.

7) **CRT Save:** This function is used to save internal G10C performance and other data to a formatted RAM cartridge.

8) **CRT Transmit:** The Cartridge Transmit function transmits data from a cartridge in the G10C's cartridge slot to a TX81Z or DX11 connected to the G10C's MIDI OUT port.

9) **CRT Receive:** The Cartridge Receive function receives data that is bulk-dumped from a TX81Z or DX11, and stores it to a RAM cartridge inserted into the G10C's cartridge slot.

10) **System Exclusive:** This utility function group sets up the conditions for MIDI System Exclusive data transmission and reception. System Exclusive data includes all performance, utility, and chain data.

11) **System Setup:** This is not actually a Utility funciton, but rather a prompt asking you if you wish to access the four available System Setup utilities. These include Receive Channel, Velocity Curve Edit, Bend Curve, and Global channel information.

* * * *

As you can see, the Yamaha G10 MIDI guitar system is very different from all the other guitar synths currently on the market. It is "uniquely programmable" for the individual who plays it. Think of it this way: the process is similar to customizing a standard electric guitar, but it's customized through software. Because of the G10's speed and accuracy, it is one of the first guitar controllers that you can really sequence with in real time: With the G10, it's not necessary to slow the tempo down to a crawl to be able to record sequences live (not to mention keeping up with a live band on stage at 120 bpm or better).

The main question you must ask yourself when considering the purchase of a MIDI guitar system is this: "Is this the most current technology available for the MIDI guitarist?" There are many "guitar synth systems" on the market today, but even the ones with lots of bells and whistles are just a repackaging of *yesterday's technology*, most of it dating back at least 10 years! If you need (or want) to control synthesizers and other MIDI devices from a guitar, the G10 system just may be your answer.

The G10 Guitar MIDI Controller and G10C Guitar MIDI Converter have a suggested list price of $2495.00 for the set. For more information, call 1-800-333-4442 for the location of the authorized Yamaha dealer nearest you, or write to: Yamaha Music Corporation USA, Digital Musical Instruments Division, P.O. Box 6600, Buena Park, CA 90622-6600.

Questions

Answers To Questions From Readers.

In your August 1987 issue, there was a very useful reader tip on how to access the performance memories of the TX81Z through a MIDI controller by customizing the unit's Program Change table. Is it possible to do the same thing with the configuration memories on the FB-01?

No, not directly. The FB-01 does not have a programmable Program Change table. However, it is possible to change configurations by sending MIDI System Exclusive messages to the FB-01. One possible approach to this situation is outlined in a reader article by Steve Ahola in the April 1988 issue of AfterTouch, entitled "Using QX5 Macros to Expand the Versatility of the FB-01."

I am having a very difficult time trying to record a sync track from my RX5 to tape. Maybe I am not using the Yamaha "cassette interface" cable correctly. What are the three cables (red, black, and white) for, anyway?

The red cable carries the output from the unit to the tape deck; the black cable connects to the "remote control" function found on some decks; and, finally, the white cable carries the output from the tape deck to the unit.

I am having a problem synchronizing my QX5 with my 4-track cassette recorder. I have followed the instructions in the owners manual; but, after the sync track is recorded, I cannot start the QX5 from the information on the tape deck. Is there something I'm missing?

In order for tape sync to work on the QX5, the Remote In and Remote Out functions must be set properly; the situation you describe suggests that you have Remote In turned off. To turn Remote In on, you need to access the function via the MIDI 2 menu (and you must also be in MIDI clock mode).

I have tried to record my TX81Z patches to disk using the MIDI Data Filer (MDF) feature of my DX7 II FD. When I transmit from the TX81Z, everything seems fine, since "Busy–Executing" appears momentarily on the DX7 II FD display. However, when I try to send the data from the DX7 II FD to the TX81Z, there is no indication that the TX81Z is receiving data. What is the problem?

In Disk MDR mode, the DX7 II FD initially receives MIDI data to its internal buffer. Once the data has been received, it still has to be transferred to disk. In order to do this, you have to hit the NO button on the DX7 II before you do anything else. If you do anything else, the data is lost, and the file (which still has a name and still appears on the file list) will not contain the MDR data that it was intended to contain.

On my DX21, is there a way to enter user-created voice names with a combination of upper and lower case letters? I have noticed that factory patches have this feature, but the manual doesn't suggest that this is possible.

No, there is no way to access lower-case letters directly on the DX21 for user-created programs. This can only be accomplished with the aid of a DX21 voicing program (such as the YRM305 DX21 Voicing Program created for the CX5M).

I am planning to upgrade my home MIDI studio by selling my QX5 and purchasing a QX3. Currently, all of my QX5 sequencer files are stored on 2.8" quick disks using the MDF1 MIDI data filer. Will the QX3 accept these QX5/MDF1 files as they were recorded on the QX5, or will I have to "play" all of my QX5 sequences into the QX3 and then load them onto QX3 disks?

No, the QX3 cannot accept the QX5 files directly. In order to transfer them to a QX3 system, you must first load them into your QX5, and then record them onto the QX3 while playing them from the QX5.

I own a DX9 synthesizer. I purchased the instrument used, and the cassette of pre-programmed sounds is defective. Is it still possible to obtain voice cassettes for the DX9?

There is one cassette available from Yamaha,

Continued on page 18

RX5 digital rhythm programmer.

Questions *Continued*

which contains twenty banks of sounds. This tape can be purchased through an authorized Yamaha dealer, or it can be ordered from the Yamaha Parts Department.

I recently purchased a DX27, and am very pleased with it. However, I am disappointed that it is not velocity-sensitive. Is there any way that the instrument can be modified so that it is velocity sensitive?
No. While the DX27 does respond to MIDI velocity messages from other MIDI instruments, it is impossible to modify the DX27 so that its keyboard creates velocity-sensitive MIDI messages.

In a review of the DX7 II, I read that one of the preset piano patches featured stretch tuning. If so, which patch features this tuning, and how can I call it up for use with other patches?
The patch you refer to is Performance #9, "Rich Grand Piano," on Bank 1 of the DX7 II ROM cartridge. The Performance calls up a stretch-tuning program, which is stored in the Micro Tuning "User 1" slot on Bank 1 of the DX7 II ROM cartridge.

Using the YRM101 Music Program cartridge with the CX5M music computer, is it possible to program different parts to have different time signatures or tempos?
No. All parts in any given sequence must have the same time signature and the same basic tempo.

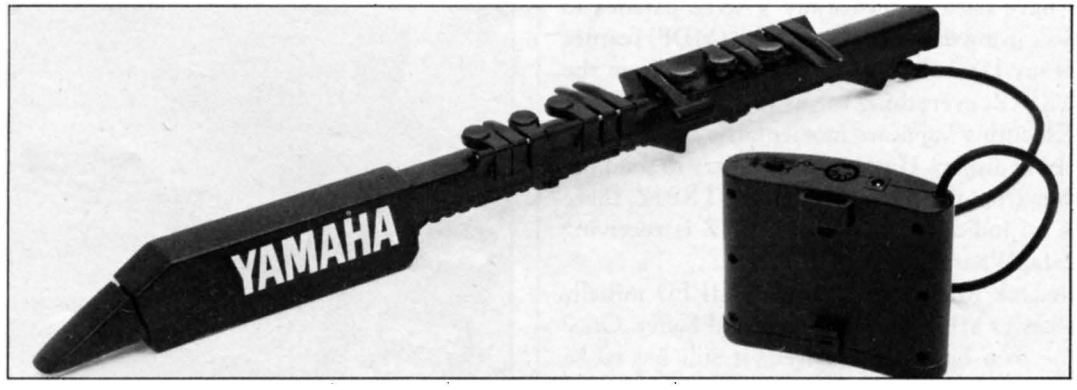
In the June 1987 issue of AfterTouch, I read about a WX7-oriented book called *Expressive FM Applications*. How can I obtain a copy of this book?
The book is a joint publication of Hal Leonard Publishing and the Yamaha Music Foundation, with Hal Leonard handling the distribution. The retail price of the book is $19.95. To obtain a copy, check out music stores that carry Hal Leonard publications, contact Hal Leonard directly, or write to: Yamaha Music Corporation USA, Digital Musical Instruments Division, Literature Department, P.O. Box 6600, Buena Park, CA 90622-6600.

In the October 1987 issue of AfterTouch, I learned about the Yamaha PTX8 MIDI Percussion system. The article mentioned that voices for the PTX8/TX81Z were available on 3.5" disks created for the DX7 II FD. Is this material available in any other format?
Unfortunately, no. The PTX8/TX81Z voice set is available only on a DX7 II FD 3.5" disk.

What is the best tape to use for storing voice data from the DX27?
There is no simple answer to this question; just make sure to get a tape that has the correct bias for the tape machine you are using.

On the RX5, is it possible to record from a MIDI keyboard via the tunable-note feature in Step Write mode?
No. To record in Step Write mode on the RX5, you must use the instrument keys on the unit's front panel.

Can my SPX90 be updated to SPX90 II specs? And, if this is done, will it decrease the unit's noise level?
Yes, the SPX90 can be updated. Contact your local dealer for an update kit, and have it installed by a competent professional. (The procedure is quite complicated, so don't try to do it yourself). The update will not change the unit's basic specs (including such things as signal-to-noise ratio); the update encompasses changes in delay times, modulation speeds, and the like.



WX7 MIDI wind controller.

Back Issues

Important Information For All AfterTouch Readers.

EVER SINCE THE PUBLICATION of the AfterTouch index in the January 1988 issue, requests from readers for back issues have jumped by an astounding number. This is especially surprising because requests for back issues have always been heavy and steady, from the moment we first announced their availability.

Unfortunately, this massive number of requests has depleted our stock of back issues: In the case of many of our earlier issues, the supply of back issues has been completely handed out, and the stock of most of the remaining issues is severely depleted.

Because of this situation, it is impossible for us to continue to fulfill back issue requests: We simply can't mail out back issues when we don't have any left to mail out.

However, due to the enormous demand for material from our earlier issues, Yamaha is considering various ways to continue to make this information available. Unfortunately, since *any* approach to reprinting this material will be quite costly, it will be impossible to continue offering the information from previous issues for free.

Yamaha will announce the results of its research into the AfterTouch back issue situation in the next few months–watch for it right here in the pages of AfterTouch.

In the meantime, please *do not* send us any more requests for back issues. There are *no more* magazines left with which to fulfill your requests.

If you have already sent in a back issue request but have not yet received your issues, you should assume that your order was impossible to fulfill. We are sorry for this inconvenience.

LET US HEAR FROM YOU! We want AfterTouch to be an information network for *all* users of Yamaha professional musical products, so please join in. We're looking for many different kinds of material.

Have you created an incredible patch for the DX7 II, the DX100, or any of the other members of the Yamaha FM digital synthesizer family? How about a program for the CX5M II music computer or a great pattern or voice for the RX5? Send in your patches, programs, and patterns. If we use your material, we'll give you full credit plus $25.00 for each item used.

Have you discovered a trick that increases the musical flexibility of one of the Yamaha AfterTouch products? Send it in to our "Hot Tips" column. If we use your hot tip, you'll receive full credit plus a check for $25.00.

Have you developed a new approach to one of the Yamaha AfterTouch instruments, or have you discovered an important secret regarding their use? Put it on paper and send it to us. Don't worry about your writing style–just get the information down. If we decide to use your material as a full article in AfterTouch, we'll write it up, put your name on it, and send you a check for $100.00. (An AfterTouch article always covers at least one magazine page–which translates to at least four double-spaced pages of typescript.)

By the way, we cannot assume liability for the safe return of unused ideas, patches, or manuscripts. We will only be able to return unused material if you enclose a self-addressed, stamped envelope with your submission.

If you just have a question regarding the use of Yamaha professional musical products, send it along too, and we'll do our best to answer it in the pages of AfterTouch. (We regret that we won't be able to answer questions through the mail, but we will use all of your questions to guide us in our choice of future topics.)

Finally, if you just want to get something off your chest, or if you'd like to establish direct contact with other Yamaha AfterTouch product users, send in something to our "Letters" column. We'll do our best to print names, addresses, and phone numbers of all those who are interested in starting up regional users groups.

AfterTouch is your publication. Let us hear from you!

Write To:
AFTER-TOUCH,
P.O. Box 7938,
Northridge, CA
91327-7938.

AFTERTOUCH
P.O. Box 7938
Northridge, CA 91327-7938

Bulk Rate
U.S. Postage
PAID
Long Prairie, MN
Permit No. 33