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CONCEPT – An Introduction to the SDS 9

The SDS 9 is a 5-drum kit, comprising bass, snare and 3 tom-toms, triggering up to 40 complete "drum kits" (20 factory and 20 programmable presets).

Hitting a specific pad triggers the corresponding channel on the "electronics". A microprocessor controls the dynamic (or volume) of each individual "hit" giving a sensitivity to playing previously unheard of in electronic drums: a "real" drum feel, in fact!

The SIMMONS SDS 9 gives you the sounds, feel and control of acoustic drums plus all the sounds and advantages of electronic drums.

To add to all this "reality", the small pads (snare and toms) have a floating head, the snare also has a rim shot/cross-stick facility and the bass pad is piston loaded – giving you the feel and playability of acoustic drums.

The SDS 9 electronically synthesises the sounds of each drum. The bass, snare and toms use different methods of synthesis – each the most appropriate for the sound and control you require. The bass is software generated directly by the computer. The snare/rim are digital samples of acoustic drums. The tom-toms are synthesised using analogue circuitry. The toms also have a unique 'second skin' switch to match the sound and response of a double headed acoustic tom.

The program/store memory facility allows you to build up your own drum sounds. These programmed sounds can be saved to tape, giving you almost limitless capacity to store new sounds, or recall previously stored sounds.

There is also a sophisticated automatic trigger that allows sounds to be reviewed without hitting the pads, and a mode where the drums can be triggered by button tapping.

The SDS 9 is the first drum kit that has a built in MIDI interface. This is completely assignable in terms of voice changes and note values. By using the MIDI interface you can directly interface with many available keyboard synthesisers and play their voices from the pads. You can also use MIDI real time recorders/sequencers to record your playing and then playback the SDS 9 exactly as you played it.

Another interesting feature of the SDS 9 is its' built in programmable echo. This programmable effect can be used for single 'slap back' echo or for long repeating echoes to produce stunningly unique rhythmic-ic-ic patterns and eff-eff-eff-ects-ects.

We have done a lot of work using the latest high technology and computer aided design tools to develop the SDS 9 – a new instrument, using new voicing techniques and new materials to give you everything any acoustic kit has to offer and much more besides – the kit that's destined to add a whole new dimension to your art.

All of us at SIMMONS hope that you enjoy the use of your SDS 9 and that it gives you the edge.

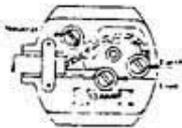
Simon Davidmann
April 1985

BEFORE YOU START

CONNECTING TO A MAINS SUPPLY European mains voltage

Connect an appropriate mains plug to the mains cable according to the following colour code.

Brown – Live
Blue – Neutral
Green/Yellow – Earth (Ground)



Check that the voltage label on the back of the panel matches your domestic mains supply.

240v – G.B. and Australia
220v – Europe
115v – U.S.A. and Canada
100v – Japan

The SDS 9 is a computer-controlled synthesiser and should be treated with care. A few simple rules, if followed, will avoid problems in the future.

They are:

Try and use a clean power source, away from equipment that may produce transient spikes through the mains power, i.e. electric motors, heavy switch gear etc.

The SDS 9 is supplied with a three core power cord – use this with a grounded AC power source.

Switch on the SDS 9 last, and off first.

Do not place the SDS 9 on top of speaker cabinets or amplifiers which might subject it to excessive heat and vibration.

SETTING UP

THE PADS

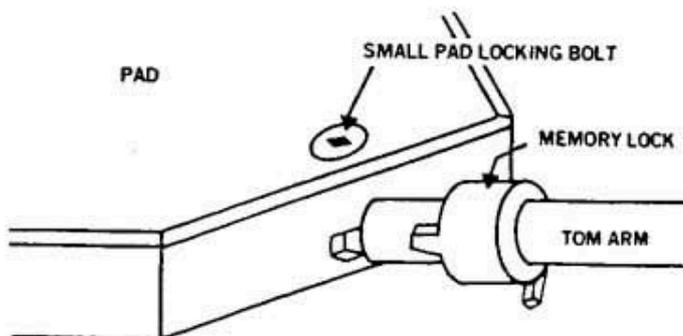
The 5 pads should be assembled on their stands to suit your own preference. Care must be taken to ensure the snare pad is not confused with the tom pads. This is because the snare is a dual pick-up pad, enabling cross-stick and rim-shots to be played. The snare pad is distinguished from the tom pads by having a GREY playing surface (as opposed to black).

You should be able to arrive at a playing position you feel happy with. You could also experiment with novel and unusual ways of setting up which would normally be impossible with acoustic drums. This is one of the many advantages you will come across when using the SDS 9.

Mounting small drum on stand — The small drum pads are mounted on conventional 22mm diameter tom tom stands. One side of the small pad has a hole for the tom tom arm. Carefully push the drum on to the arm, a gentle rocking action will ease the drum on to the arm. If the arm will not enter the drum, turn the locking bolt anti-clockwise 1 turn with a conventional drum key.

The tom tom arm can enter the drum to a maximum depth of 6 inches.

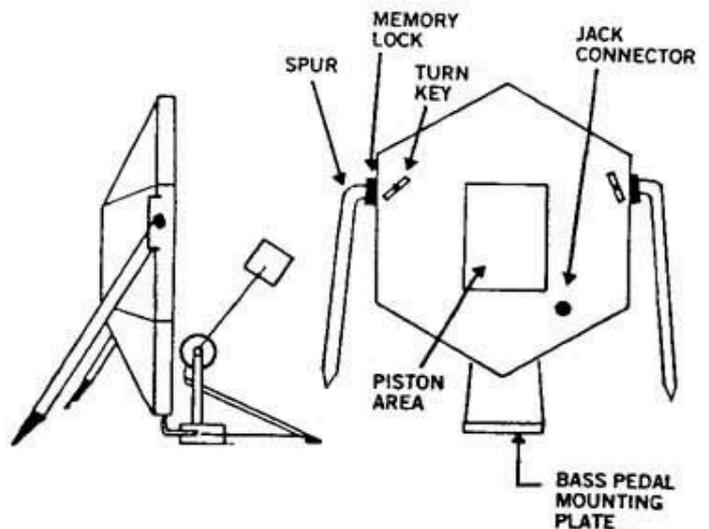
Loosen the 'memory lock' ring on the tom tom arm (if fitted) and locate the tongue of the ring into the drum pad. Tighten the locking bolt and memory lock with a drum key by turning the key clockwise.



Bass drum pad — Insert the spurs into the side of the bass drum by loosening the turn keys (turn anti-clockwise to loosen) and push the end of the spur into the nylon clamp, so that the spurs slope forward to form a tripod with the bass drum pedal plate.

Tighten the spurs in this position by rotating the turn keys clockwise.

Note: Memory locks can be fitted on the spurs if required. Fit a bass drum pedal on the plate in the conventional manner. Ensure that the pedal is adjusted so that the beater strikes the drum in the central 'piston area'.



CONNECTING UP

All the sockets for connecting up are situated along the top edge of the electronics.

Pad Inputs — Each pad connects to the appropriate "Trigger Input" socket (Bass drum — ch.1, Snare — ch.2 etc.). Again, care must be taken with the snare. A special stereo jack lead is supplied for this drum, to enable the rim/cross-stick operation. Using one of the mono jack leads will result in only the snare sound being triggered.

Footswitch — There is a footswitch to change the kits (more of this later) which is plugged into the "Foot Select" socket. You will probably want to experiment with the most convenient positioning of the footswitch itself, but try placing it just to the left of the hi-hat pedal. A quick sideways movement of the foot will change the presets.

Audio Outputs — Each drum has its own individual output socket (for mixing desks etc.), but if you have a limited number of available channels (e.g. one or two channels of an amplifier etc.) you can use the "Mix Output" or the "Stereo Output" channels to the right of the individual outputs. The stereo output is a stereo jack socket.

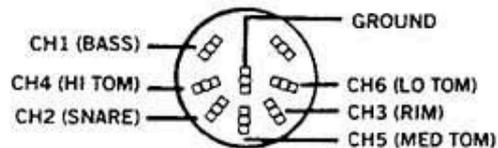
The mix output is a mono mix of all five drums, the relative levels of each drum is set on the individual output level controls, whilst the mix level control varies the overall volume. These controls do not affect the stereo or individual outputs, so that if you were using the mono mix on stage for your own monitoring you can adjust your own mix levels without affecting the main feeds to the P.A. (individual outs/stereo outs).

Headphones — There is also a headphone socket which will accept any standard jack headphone plug and enable you to hear the SDS 9 without any amplification equipment. The jack is standard ¼" stereo and headphones of 600Ω impedance are recommended.

Snare/Rim Audio Output — Note that the snare individual output is a stereo socket. If you use a mono jack lead you get the combined snare drum sound (both snare and rim — the balance given by the current kit). If a stereo jack plug is used, the tip of the plug gives the combined sound while the edge gives the raw rim sound. The amount of rim coming out of the combined output can be programmed with the snare/rim balance control, so if you need complete

separation of snare and rim, program the kits to be full snare and use a stereo plug with a split lead to the mixing desk etc.

Sequencer Input — An 8 pin din to jack lead is available from SIMMONS which enables 5-15v gate signals to trigger the SDS 9 (such as the SIMMONS SDS 6).



MIDI/TAPE. IN/OUT — This is discussed in the section on MIDI and for tape applications in the section on tape dumping/loading.

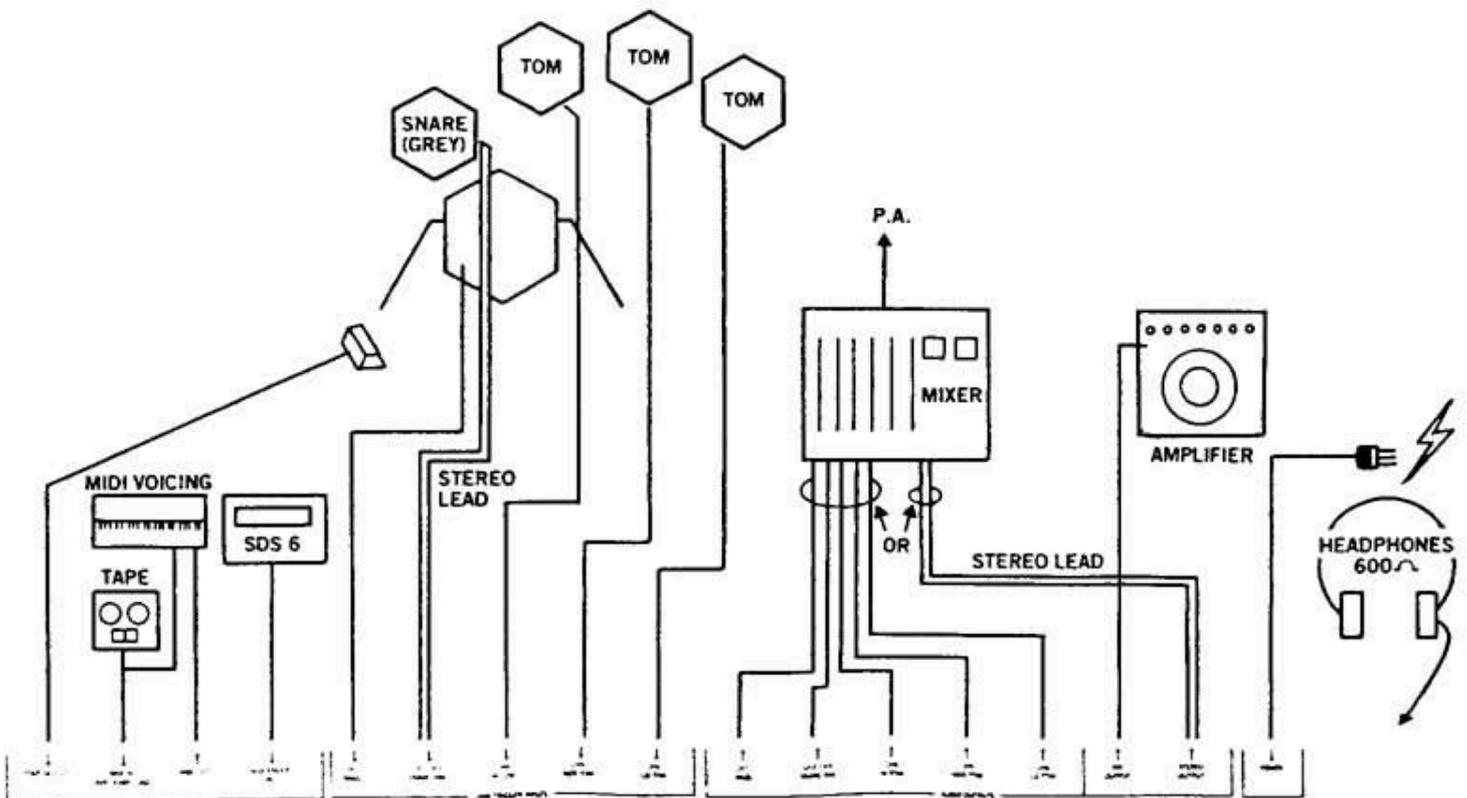
Amplification — The SDS 9 sounds have been chosen to sound good through small combos as well as larger P.A. systems but the question of a recommended system has no easy answer. Obviously such variables as the size of the venue and the type of music being played should affect your choice. By their definition, drum sounds are highly percussive and it is certainly desirable to amplify the SDS 9 at a level at least comparable to a conventional drum kit. Therefore, your chosen system should be capable of reproducing very dynamic sounds, spanning a broad frequency range.

If you have previously been playing an amplified acoustic kit, the outputs from the SDS 9 can simply replace the drum mics.

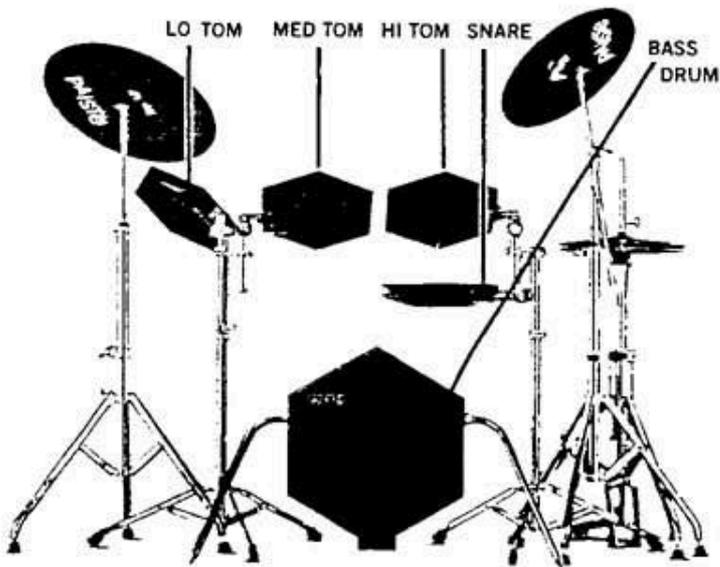
If the SDS 9 is being played live and you wish to utilise the facilities of an external mixing desk, the sockets marked "Audio Outputs", 1-6 should be utilised to connect each channel with a separate channel of the desk. The output of each of these connections contains only the sound from the relevant channel. This allows each drum sound to be equalised independently and is certainly the most desirable method of amplifying or recording the drums. If you have only a small stereo mixing desk and vacant channels are in short supply, the output marked stereo should be utilised to connect the SDS 9 to two channels of the desk. The drum sounds are panned automatically in these outputs and hence the pan controls on the mixing desk should be turned to left in the channel receiving the left output and right in the channel receiving the right.

Whether using individual audio outputs or the stereo outputs for recording or playing live, the output marked "Mix" can be used to simultaneously connect the SDS 9 to a separate amplifier for the purpose of monitoring. This is essential when playing on stage as the drum pads themselves produce no sound. The monitor system should be placed near the drummer and used at a suitable volume to allow all the musicians on the stage to hear the drums clearly. The relative level of each drum in the monitor mix will be set on the individual channel level controls.

CONNECTIONS TO SDS 9



Conventional 5 drum set-up



It is advisable to place the electronics within easy reach of the pads, once you have found a set up that is comfortable. (You should be able to sit at the kit and operate the unit at the same time).

A stand is not supplied for the electronics, they will fit on a standard snare stand, music stand, or in a standard 19" rack when fitted with optional rack mounting ears.

PLAYING THE "FACTORY" SOUNDS

POWER ON!

Once you have connected up all the leads the next thing to do is switch on! The power switch is on the top right of the electronics.

SELECTING A KIT

When the power is turned on the "Bank" light will show above "A" and the "Kit Display" will show "1". This means you are on "Factory Kit" A1 (or Bank A, Kit 1). There are 4 banks, each containing 5 kits giving you a total of 20 "Factory" kits. These kits can be "accessed" by pushing the "Bank Select" or "Kit Select" buttons (situated below the displays). You can also change the kits in any one bank using the footswitch. Each tap on the switch advances the number by 1 through to 5 and then cycles back to 1, and so on. With a bit of practise you should be able to change the kits whilst playing, by using the footswitch.

PAD SENSITIVITY

The sensitivity of the drum pads is controllable, using the sensitivity pots at the top of each individual channel. This allows you to alter the sensitivity of each drum according to your own taste and preference. (Note that the snare has two sensitivity pots – one for the drum middle and one for the rim).

When set low (anti-clockwise) the drums must be struck very hard to produce a "hard" sound and when set high (clockwise), the drums will produce a "hard" sound with a very light tap of the stick. These controls should be set to facilitate your technique. Of course the perceived sensitivity of the pad will also be affected by the weight and type of stick, and in the case of the bass drum, the type and throw of the beater.

The playing surfaces of the SDS 9 have been designed to emulate the response of a conventional drum head, but we do recommend that you experiment with various weights of stick and select the type that suits you best. Similarly with bass drum beaters the choice is yours, however we do suggest that you avoid the use of wooden beaters. The playing surfaces will not wear out but will mark at the point of impact. These marks can be removed with a damp cloth.

PLAY AWAY

At this point we recommend that you experiment with the 20 'Factory pre-set kits'. Explore the feel of the pads and interaction of the sounds programmed for the rim and snare. As well as amplification, reverb etc. Note that whilst playing the snare, the rim can be struck anywhere and will produce the rim sound at a volume dependent upon how hard it has been struck. If the rim and snare are struck simultaneously, both sounds are accented.

A list of factory sounds are listed at the back of the manual.

BUTTON TAP

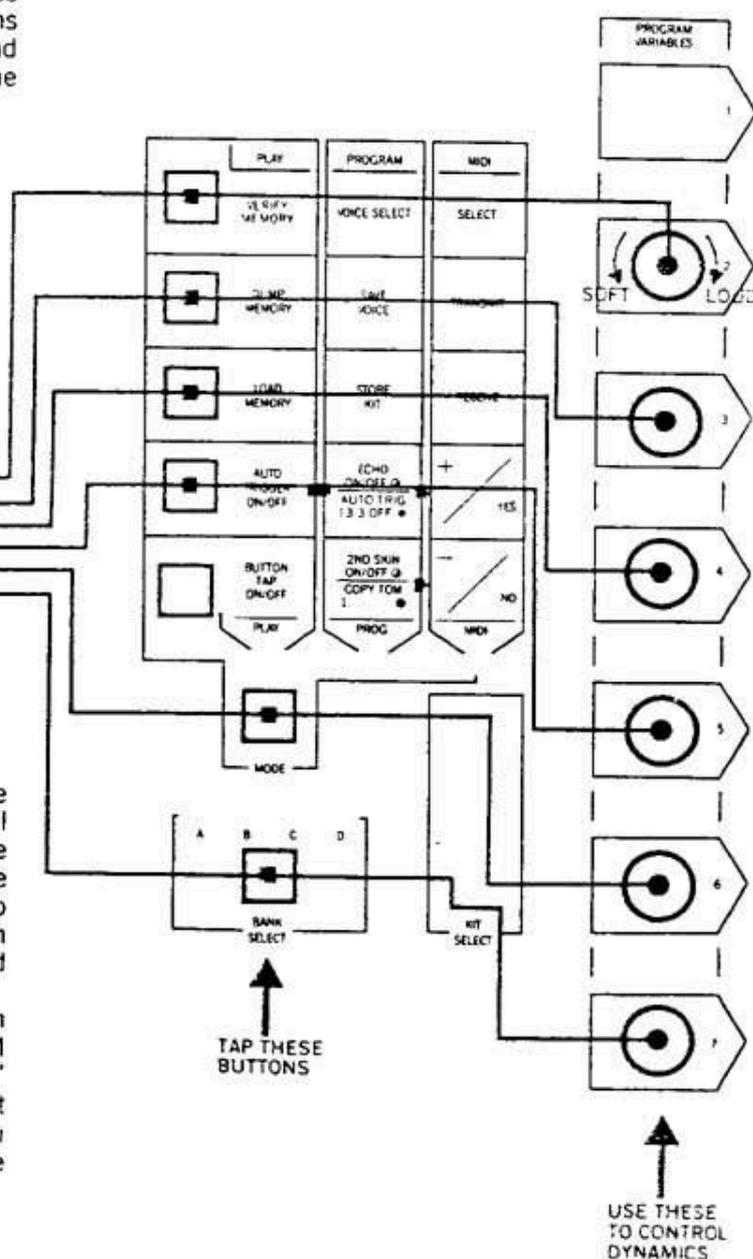
TRIGGERING THE DRUMS FROM THE BUTTONS

Pressing the button labelled "Button tap on/off" enables this function. "Button Tap" allows you to hear all the drums in all the kits in one bank without playing the pads, instead the buttons shown will each play a drum. Notice that the play led flashes while you are in tap-in mode.

TAPPING	HITS	DYNAMIC CONTROL
VERIFY MEMORY	- RIM	(PROGRAM VARIABLE 2)
DUMP MEMORY	- HI TOM	(PROGRAM VARIABLE 3)
LOAD MEMORY	- MED TOM	(PROGRAM VARIABLE 4)
AUTO TRIGGER MODE	- LO TOM	(PROGRAM VARIABLE 5)
BANK SELECT	- SNARE	(PROGRAM VARIABLE 6)
	- BASS DRUM	(PROGRAM VARIABLE 7)

It is possible to adjust the dynamic of the buttons using the pots 2 to 7 (program variables). A little experimentation will find the optimum playing level for each sound. This feature is useful for hearing the different sounds produced when the sounds are triggered at different dynamic levels. Tap 'dump memory' (hi tom) whilst turning up and down program variable 3 – this is the same as striking the pad harder and softer.

Note – it is not possible to change "Banks" when in button tap mode, as the Bank Select button is the BASS DRUM sorry!. To exit "Button Tap" mode just press "Button Tap" again. Sometimes you have to press the button twice to get out of tap-in mode. This is because we don't want you jumping out of this mode accidentally when you are frantically tapping other buttons.



AUTO-TRIGGER

Another useful function. There are several different types of Auto-Trigger, but for the time being we'll cover only one. Pressing the Auto-trigger button will start a cycle triggering each drum "voice" in sequence, (bass drum, snare, rim, hi tom, med tom, lo tom).

The speed of the trigger cycle can be adjusted whilst in this mode using "Program Variable" pot 6 (Auto Speed). The "dynamic" or volume at which the voices are triggered is controlled by pot 5 (Auto Trig Dynam). This changes the "hardness of hit" (in drummer jargon!). You'll find that with some of the presets, changing the trigger dynamic can have a dramatic effect!

Whilst in Auto-Trigger mode it is possible to run through all 20 Factory kits (and User kits – keep reading to find out about them!).

FOOTSWITCH

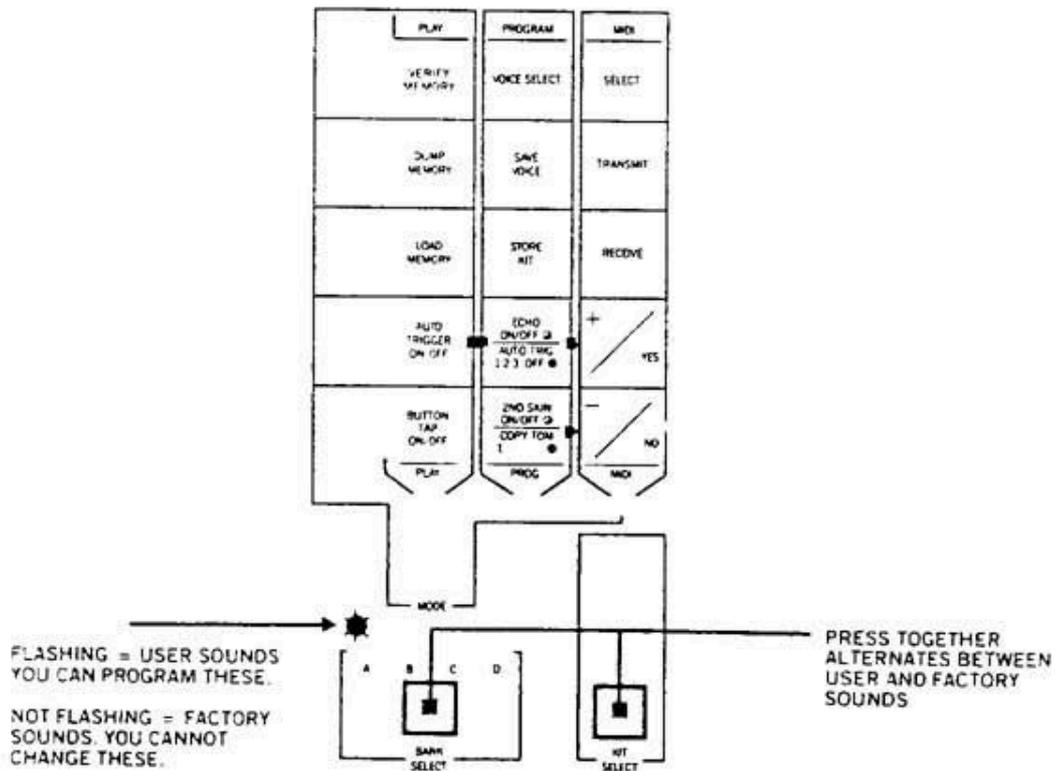
The footswitch allows you to change "kits" in any one bank whilst playing. The kits will advance by 1 through to 5 and back to 1 etc. It is still only possible to change banks using the bank select button.

The footswitch is actually connected to the kit select button, so that any time you want to press the kit select button you can use the footswitch.

SELECTING 'USERS' KITS OR FACTORY KITS

As well as the 20 Factory kits, whose sound cannot be altered, the SDS 9 has an additional 20 kits of 'User' sounds which you can alter and re-program, stored as before in 4 banks of 5 kits each. These kits can be 'accessed' by pressing 'kit' and 'bank' SIMULTANEOUSLY (a sharp jab at both works well).

'User' kits are shown on the bank panel by the bank light flashing. To get back to the factory kits, push kit and bank simultaneously – and note that the bank light no longer flashes thus indicating the factory kits.



Examples

Bank led B on – ●
means Factory Bank B

Bank led B flashing ●
means User Bank B

Note that you can swap between user and factory kits whenever the bank select button is active (i.e. any time apart from when you are in button tap-in mode).

SWITCHING BETWEEN THE SDS 9 MAIN MODES (OR – THE MODE BUTTON)

You will by now have noticed that there is a led above the mode button that has been lit – the play led – indicating that you are in play mode! In play mode the five buttons take on the meaning described in the column above the play led (e.g. button tap, auto trig etc.).

When you switch on the SDS 9 it will always power-up in play mode, with factory kit A1 selected. This is the normal 'playing' mode where all the sounds are available to you for performance. The other two modes are used to program the various functions of the SDS 9, i.e. the sounds and midi.

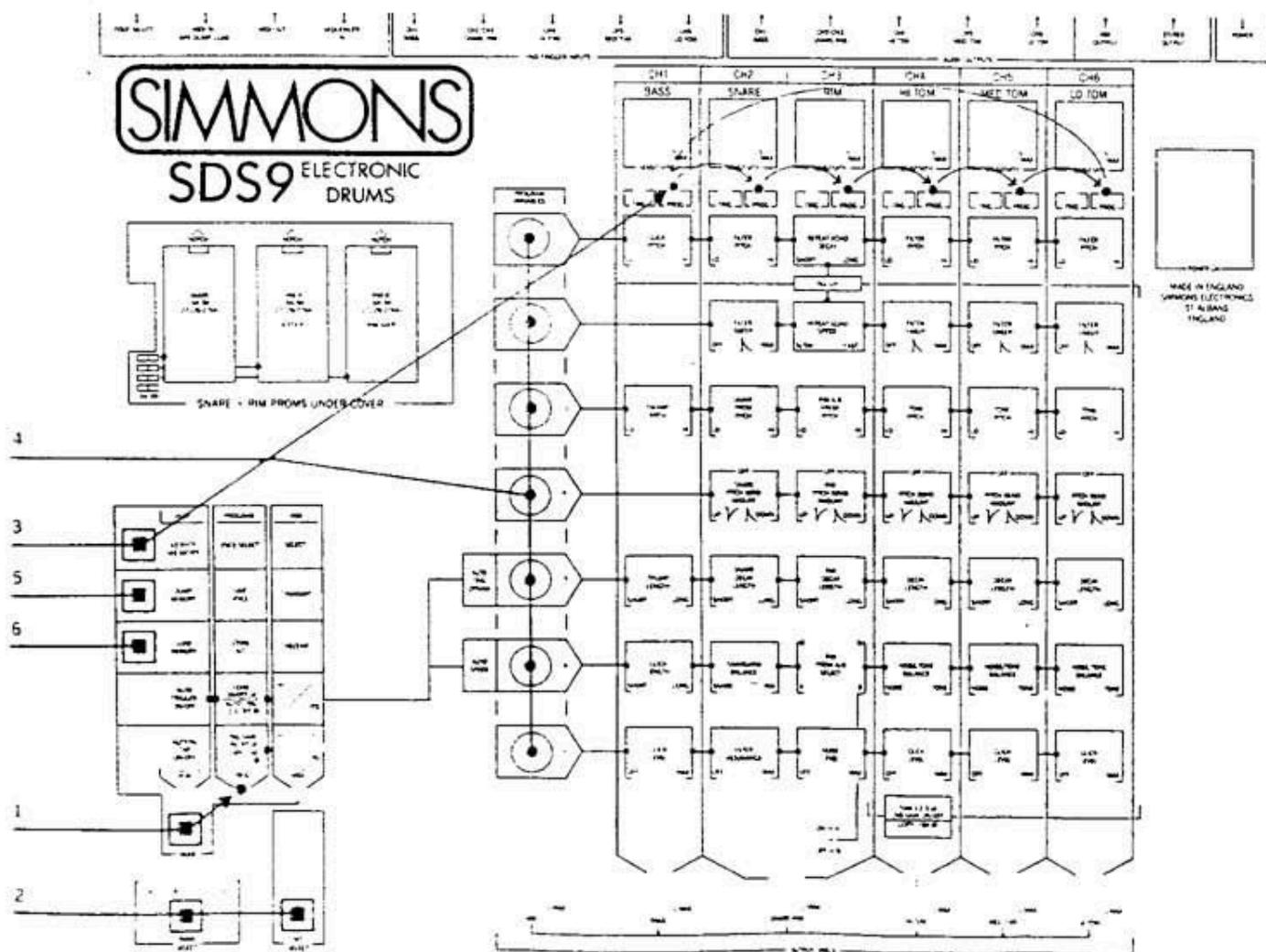
If you press the "Mode" button you will see the play led go off and the 'prog' led come on. This indicates that you are now in programming mode. The five buttons now take on the meaning described in the column above the prog led (e.g. voice select, save voice etc.). If you keep pressing the mode button you will move to the midi mode, and again moves you back to the play mode.

Thus you can tell what mode you are in and very easily what function each button currently is used for.

PROGRAMMING KITS

Programming a particular drum kit is achieved by following a logical series of actions as follows:-

- 1) **Enter prog mode** by pressing mode – the led under prog will be lit.
- 2) **Select a kit to program** by pressing bank select and kit select. You can use any of the 20 Factory or 20 User kits as a starting point – but remember you can only STORE kits in the User area.
- 3) **Select a voice to program** by pressing 'voice select' each press moves on to the next voice to program i.e. bass – snare – rim – hi tom – med tom – lo tom. The 'Prog' led on the appropriate channel will flash.
- 4) **Program a voice** by turning the program variable controls, these have different effects on different channels. The effects are printed on the front panel.
- 5) **Save a voice** by pressing the 'Save voice' button – the prog led for the selected voice will stop flashing and stay on permanently. Note – the voices are only temporarily stored at this stage.
- 6) **Store a kit** by selecting a kit with bank and kit select (you can of course store your new kit back where you originally had it in 2 above) and press 'store kit'. The display will flash s.t.o.r.i.n.g. and will store those channels that have the 'prog' led lit, i.e. those that were saved in 5 above. Note – you cannot store kits in the factory area, the display will blink n.o. if you attempt to, so make sure the bank led is flashing (i.e. user) before storing.



PROGRAMMING SOUNDS – IN MORE DETAIL

To enter program mode, first press the Mode button. The light currently on "play" should move along to "prog". The buttons along the left edge of the panel now correspond to each of the functions above "prog".

SELECTING A VOICE TO PROGRAM

Press the top button (Voice select), the "prog" light on the Bass voice will start to flash. This voice is now "soft" (or programmable). Using the program variable pots, you can now change the sounds (or parameters) of the bass drums voice. In other words the program variable pots (pots 1-7) take on the meaning written in the column under the voice whose program led is flashing. For example, the bass drum can have the thump pitch changed when pot 3 is adjusted – but only when the bass drum program led is flashing. To select a different voice to program you keep pressing 'voice select', this steps you on to the next voice.

ACTIVATING THE 'PROGRAM VARIABLE' POTS

A variable will only change when the pot has been turned past the value of the sound already stored. So once you have decided which variable you wish to change, a good tip is to twist the pot fully in both directions (to give you complete control) before you start. Remember, if you lose the sound originally stored and wish to return to it, just reload this kit by using either the bank or kit select buttons to cycle back to this kit and bank number.

SAVING A VOICE

Once you have arrived at a sound you are happy with, you may "harden" the sound by pressing "Save Voice" (Button 2). The voices "prog" light will now stay on constantly. You can then move on to another voice and do the same again. To "resoften" a voice just press "Save Voice" a second time and the voices "prog" light will once again flash.

STORING VOICES

You can only store voices which have been "saved" (hardened) first. Any voices still remaining "soft" will be lost if you change bank or kit to a new kit (as the sounds for the new kit are loaded into all soft voices). So first "save" all the voices you wish to store. Then press "Store Kit". As you press the button you will notice that the display will flash S.T.O.R.I.N.G. This indicates that the voices have been stored (Note that only 'hard' voices are stored).

USING THE FACTORY PRESETS AS A STARTING POINT

Factory voices may be changed (exactly the same way as "User" voices), the difference comes when you try to store them. Factory sounds are stored in ROM (Read Only Memory) which cannot be updated. If you hit "Store Kit" in Factory kits, the display will flash N.O. (No!). It is possible, however, to store a great sound that was derived from a Factory voice by changing to the "User" kits while the sound is hard, and then "storing" it.

It is possible to shuffle voices around from kit to kit by entering "prog" mode, "saving" the particular voices, changing Bank/Kit, and storing the voices at their new destination!

AVOIDING LOSING SOUNDS (OR BE CAREFUL)

If you change Kit/Bank while any voices are still "soft" you will lose all the changes that have been made, and the soft voices will revert to the original sound stored. You don't, however, have to "store" the voice, just "saving" it will do. It is possible to work on all the 6 channels, saving each one in turn before you need to decide which voices to "store". However, it is safer to save and store as you go, as one wrong move can lose all you have worked on.

Voice prog 'hard' ● (non flashing)
= voice saved; pots not active.

Voice prog led 'soft' ▲ (flashing)
= pots active.

PROGRAMMING THE SOUNDS

The following pages discuss in detail the various parameters of the sounds that can be altered.

The sounds are alterable whilst in the program mode and the program led is flashing over the particular channel to be programmed.

The 7 program variable controls vary the parameters boxed under the channel heading — for example program variable pot 1 (the top control) will vary click pitch when programming the bass drum, and filter pitch when programming the snare. There are 5 variables for the bass drum, 12 for the snare and rim (the two channels are classed as one drum) and 7 for each of the tom toms. The balance and amount of these variables can change drastically according to how hard the particular drum has been struck. For example bend and brightness can be programmed to increase with harder hits, so during programming it is advisable to strike the drum with differing strength to hear the effect. During programming of the snare, the rim should be struck as well, so as to hear the balance between the variable snare and rim parameters.

There is an auto trigger facility which hits the drum for you at different dynamic levels whilst you are programming (see — more complex auto-trigger variations), but for the moment we'll assume you will be hitting the drum whilst programming the sounds.

PROGRAMMING THE BASS DRUM

THE PARAMETERS YOU CAN CHANGE

The bass drum is a digitally synthesised voice incorporating two main component parts.

THUMP & CLICK

Thump is the main body of the sound — in an acoustic drum this is the bass drum head vibrating after it has been struck.

Click is the sound of the bass drum beater hitting the skin. In an acoustic drum the size and tension of the drum skin will vary the pitch of the drum. The amount of damping affects the length of the thump, whilst the type of beater along with equalisation during recording drastically changes the quality of the beater sound or click.

These are the most commonly manipulated parts of an acoustic bass drum sound, you can change these easily on the SDS 9.

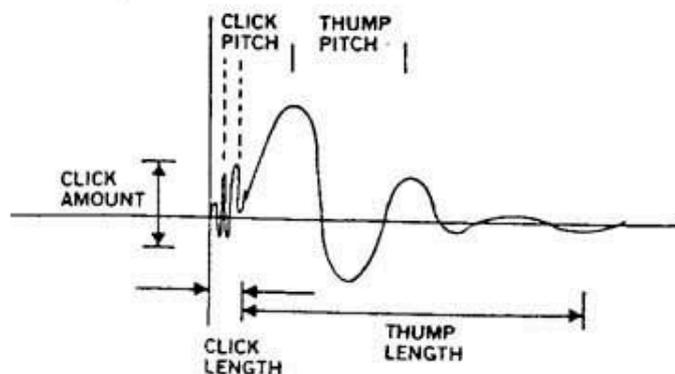
There are program variable pots to change the pitch of both click and thump.

It is also possible to change the length of click and thump.

Finally there is a pot for click level.

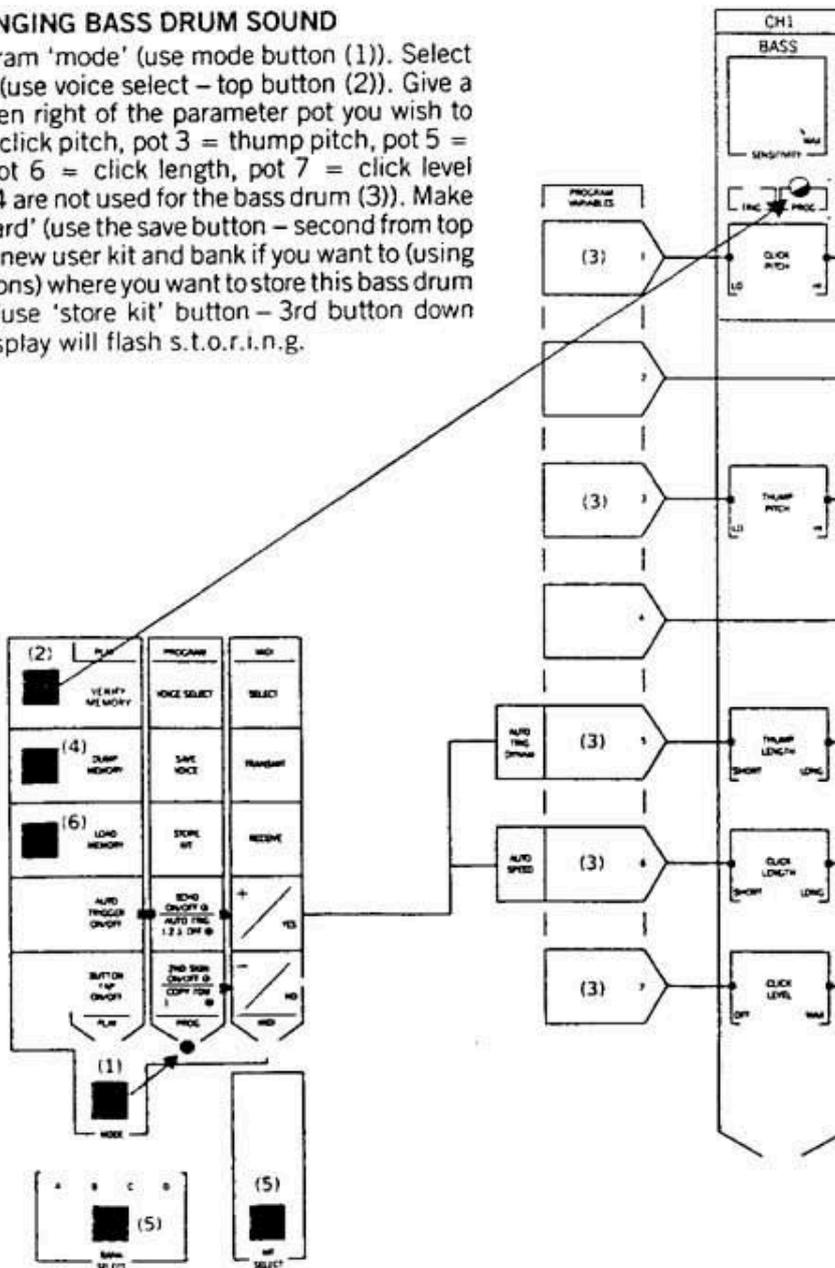
With these 5 variables, an amazing number of different bass drum sounds can be attained. From the tightest Jazz bass drum to the heaviest metal sound (and all in between!).

To get rid of the click component completely, both 'click length' and 'click level' must be turned fully to the left (anti-clockwise).



RECAP ON CHANGING BASS DRUM SOUND

Get into the program 'mode' (use mode button (1)). Select bass drum voice (use voice select – top button (2)). Give a little twist left then right of the parameter pot you wish to change; pot 1 = click pitch, pot 3 = thump pitch, pot 5 = thump length, pot 6 = click length, pot 7 = click level (note pots 2 and 4 are not used for the bass drum (3)). Make the bass drum 'hard' (use the save button – second from top (4)). Change to a new user kit and bank if you want to (using bank and kit buttons) where you want to store this bass drum sound. Store it (use 'store kit' button – 3rd button down (6)). Note the display will flash s.t.o.r.i.n.g.



SNARE DRUM CONCEPT

The SDS 9 snare has been designed to be the most flexible snare you have ever possessed.

Imagine its acoustic counterpart –

TUNING

You can tune it at a turn of a knob and store that tuning away. You can tune the rim, for higher or lower pitched rim shots and cross-sticks.

It's like having variable depth of shell, material of shell, make of drum head.

DAMPING

You can have a long snare sound, or a damped sound, with a short rim or long x – stick with ambience as counterpoint and again store these variations for re-call later.

Add extra snare 'rattle' with the noise control.

E.Q.

Change the filtering of the snare sound with the on board variable filter with resonance.

CHANGE OF PITCH WITH DYNAMICS

You can raise or lower the pitch of the snare or rim independently by how hard you strike the drum.

If that is not enough, insert your own sounds in the prom sockets and have a breaking glass sound when you hit the rim, or a gun shot, or timpani, timbale, guitar chord.

Choose the sound you require from SIMMONS extensive prom library, or sample your own with the SIMMONS E.P.B. (See sampling).

PROGRAMMING THE SNARE DRUM

THE PARAMETERS YOU CAN CHANGE

The snare drum is itself divided into two voices: the snare itself and the rim. Both of these voices are digital samples of acoustic drums held in PROM. Even though it has 2 voices, when programming it is treated as one drum – note that both voices are loaded and stored together (and they are always either hard or soft together). The SDS 9 comes supplied with three snare proms which go to make the complete snare drum sound.

These proms are:-

Semi live snare hit

Live cross-stick with ambience

Live snare rimshot (snares detached)

Changing the proms, sampling and E-proms are discussed later in this manual.

With both voices you can alter the pitch, pitchbend (both up and down), and the length of decay. On the snare voice there is also control over the filter cutoff, the filter sweep and filter resonance.

The rim voice also has a pot for white noise level (the tone and sweep of this is largely controlled by the filter 'parameters'). The noise is only triggered by the snare however. As there is a COMMON individual output for both snare voices, there is also a pot which controls the snare/rim balance. On the rim you have a choice of 2 sounds (held in the proms under the hatch in the electronics)

RIM A — CROSS-STICK (CLICK)

RIM B — RIM-SHOT (CLANG)

Turning the Rim Select pot anti-clockwise will select RIM A, clockwise will select RIM B.

ALTERNATING BETWEEN THE SNARE AND RIM VOICES

Because the snare and rim voices are used for one drum – and one filter is used for both it is often necessary to swap between adjusting a parameter on one voice and then adjusting one on the other. To make this easy, pressing the bottom button (the one labelled '2nd skin/on/off') while the snare and rim voices are soft will toggle you between the voices.

A PROGRAMMING SESSION WITH THE SNARE DRUM

1. Enter prog mode by pressing the mode button so that the prog led is lit.
2. Press the voice select button twice so that the snare prog led is flashing.
3. Select factory sound A1 (bank led A non-flashing) – this re-calls the factory sound stored in A1 as a starting point for programming.
4. **Filter Pitch** Whilst hitting the snare drum, rotate the filter pitch control (variable 1) fully clockwise and anti-clockwise and note how the sound gets brighter (clockwise) and duller (anti-clockwise). Leave the control half-way.
5. **Filter Resonance** Again, whilst hitting the snare, turn the filter resonance half-way, (don't forget to 'activate' the pot by rotating clock and anti-clockwise first), then go back and rotate the filter pitch. Note the definite pitch or whistle that the sound now has. Try different amounts of resonance at different filter pitch settings. Leave control half-way.
6. **Filter Sweep** Activate the control, turn the filter pitch anti-clockwise, then, whilst striking the drum, turn the filter sweep anti-clockwise and then gradually clockwise — Note how you can hear the filter 'sweeping' downwards as the sound decays. This 'sweeping' effect is exaggerated because of the resonance control being half-way. Note that the amount of 'sweep' is dependent upon how hard you hit the drum.
Turn the resonance anti-clockwise (off). Now as you hit the drum harder the sound will get brighter (unless the filter pitch is as high as it will go anyway).
Turn the resonance and sweep fully anti-clockwise (off) and the filter pitch fully clockwise.
7. **Snare Prom Pitch** Activate the control, hit the snare and vary the snare pitch control, note how the low sounds get long and distorted whilst the high sounds are short and crisp, (see Sampling for more details). Hit the snare and rim together to see how different snare pitches work against the rim sound. Leave the control half-way.
8. **Snare Pitch Bend** Whilst hitting the snare with varying dynamics, turn the control clockwise – note how the pitch of the snare goes up when you hit the drum hard.

Turn the control anti-clockwise, note how the pitch of the drum goes down when the drum is struck hard.

At roughly the halfway point, no bend will be apparent. A small amount of bend down sounds most realistic. Experiment with different amounts of bend at different snare pitches.

9. **Snare Decay** Try different lengths of snare sound. Note that you can never get a longer sound than the sample itself. The length of the sample is dependent upon the speed (i.e. pitch) that it is played at.

10. **Snare Rim Balance** Hit the snare and rim together. Rotate the control anti-clockwise and note that the sound is almost entirely snare, turn clockwise to hear just rim. Leave the control halfway.

Rim To program the rim, press voice select. Note the rim prog led is now flashing – press '2nd skin on/off' (bottom switch) note that the snare prog led now flashes, press again and you are back to the rim. This saves you 'cycling' around the toms and bass drum, this would happen if you used the voice select button.

Leave the rim prog led flashing and repeat the above steps for the 'rim A/B pitch', rim bend, rim decay.

Rotate the prom select knob fully clockwise. Note the prom select led goes out. This means that the second rim prom (B) is now in use.

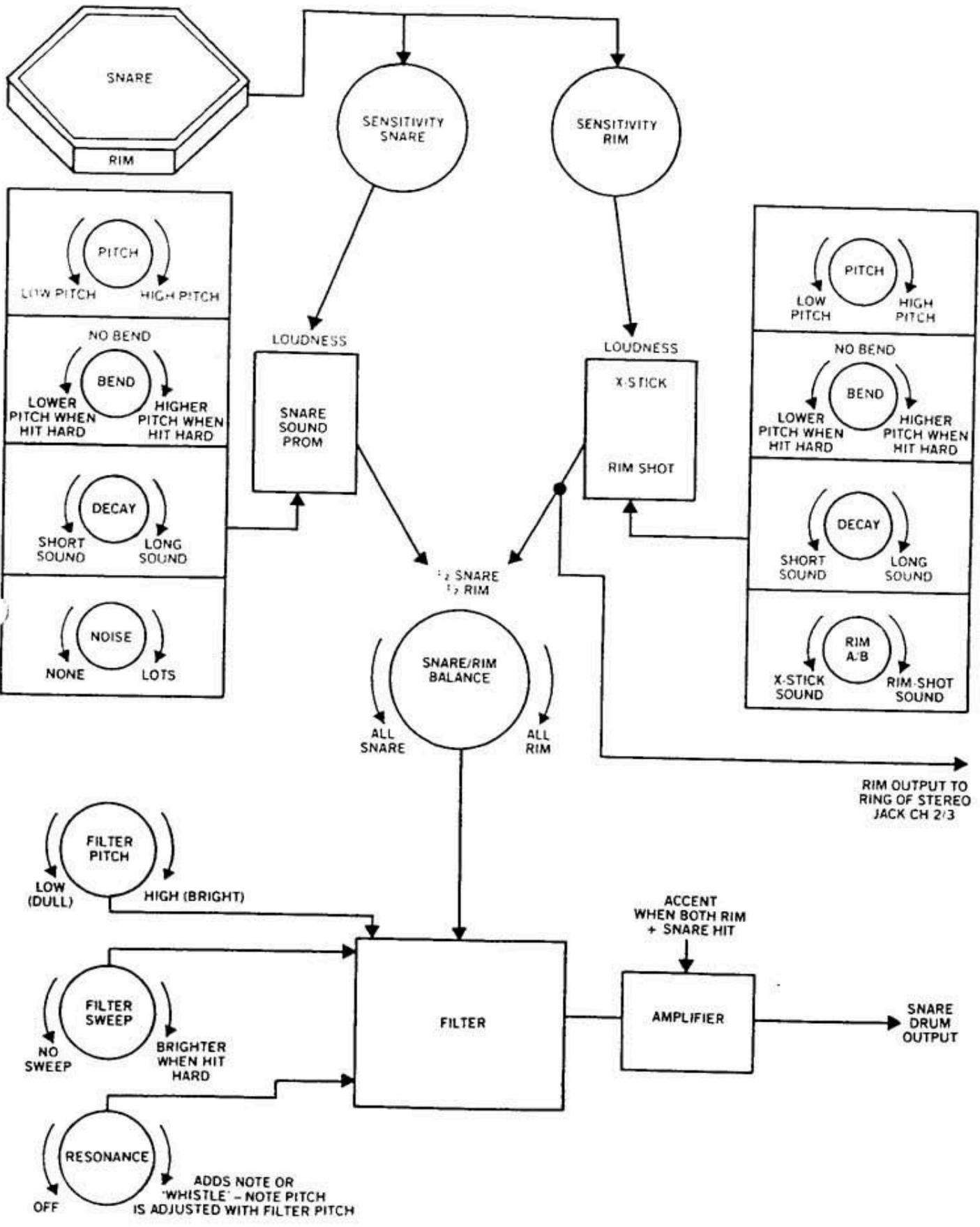
Rotating the rim select control left and right selects prom (A) or prom (B).

Repeat the programming exercise for the rim shot sound (prom B).

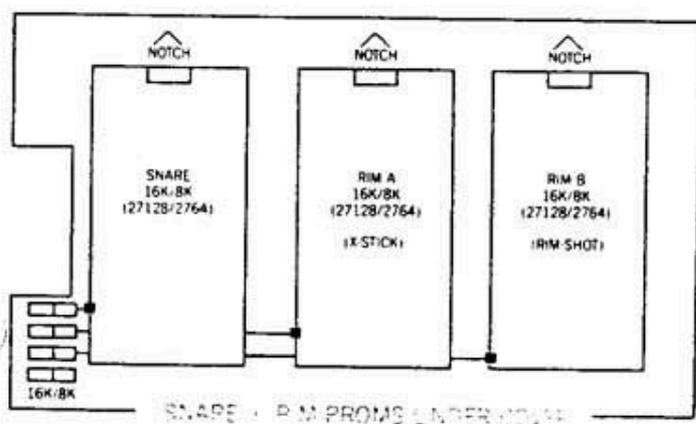
Noise Turn the noise control up. Hit the snare, note that white noise has now been added to the snare sound.

Press '2nd skin on/off' to switch back to prog snare and experiment with different settings of filter pitch and resonance on the noise.

Saving At any time you can hit save voice. Both prog led's (snare and rim) will go hard (non flashing). If you change to a user kit and hit store kit, the new snare and rim settings will be stored in that kit, overwriting the old snare sound.



CHANGING THE SNARE DRUM PROMS



At the top left of the electronics is a hatch held in by a thumb screw. Under this hatch are the eproms that contain the samples used for the snare drum. You can change these for

alternative sets available from your SIMMONS dealer or you can have these programmed using the SIMMONS SDS EPB - Sampler and Eprom Blower. With the hatch off you will see 4 small switches that select whether the eprom are 8K or 16K bytes. The top one is for the snare, the second from the top for rim A, the third for rim B. The switches should be switched to the left for 16K eproms and to the right for 8K Eproms. (The bottom switch is not used).

Note that the factory sounds have been programmed for the sampled sounds that are in the eproms shipped with the SDS 9 by SIMMONS. If you change these eproms, the factory presets will not be set up correctly.

If you intend to be changing prompts constantly, you are advised to purchase a set of ZIF (zero insertion force) sockets, which plug into the existing prom sockets. This makes changing eproms very simple - a small lever locks the prompts into place and no force is required to remove the prompts. Be careful not to bend the prom legs if you are not using zif's.

Contact your SIMMONS dealer for more info on zif's. See 'sampling your own snare sounds'.

TOM TOM CONCEPT

The three tom toms are identical on the SDS 9 apart from pitch, the hi tom is higher in pitch than the medium tom, and this is higher in pitch than the lo tom.

The tom sound itself is made up from four 'sound' components – tone, noise, click, and 2nd skin (frequency modulation) and four 'control' parameters – filtering, bending, amplifying (dependent upon dynamic) and decay length.

TONE

The 'tone' of the drum is its natural pitch, i.e. the pitch to which you would tune an acoustic drum. This pitch can change dependent upon how hard the drum is struck. This pitch change is called bend. The pitch can be bent down (i.e. the pitch goes up as the drum is struck harder and then bends down as the sound dies away – normal tom sounds) or bent up (i.e. the pitch goes down as the drum is struck harder and then bends up as the sound dies away – tabla like sounds).

NOISE AND FILTER

The noise contents of the sound mimics the high random tones or brightness in the drum. This brightness dies away as the drum sound dies away. The drum sound also gets brighter the harder the drum is struck. These functions are carried out by the filter controls (filter pitch – the initial brightness of the drum, and filter sweep – how the brightness changes as the drum sound dies away).

DECAY

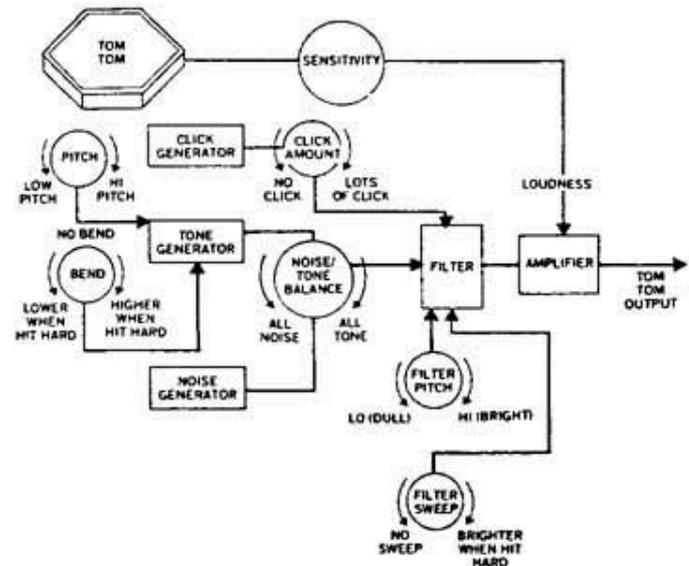
Decay length is simply the time it takes for the sound to die away after the drum has been struck. On an acoustic drum this would be achieved with tensioning the head, along with various pieces of gaffer tape and sponge!

CLICK

Click is the sound of the stick hitting the drum head. This is synthesized with a burst of noise and is shaped by the filter. The amount of click is independently variable.

2ND SKIN

By modulating the tone of the drum with a second, unrelated frequency, a deeper, harmonically rich sound can be produced. This is the 'second skin' feature on the SDS 9.



PROGRAMMING THE TOM-TOMS

THE PARAMETERS YOU CAN CHANGE

The tom voices are generated by analog synthesis, in a similar way to the SIMMONS SDS 5, 7 and SDS 8 but the SDS 9 toms have been specifically designed to sound more 'real' than ever before.

You have control over the tone pitch and pitch bend, the filter pitch and sweep, the length of the sound (decay), the amount of click and the balance between tone and noise.

THE SECOND-SKIN SWITCH – SINGLE/DOUBLE HEADED TOMS

This is a subharmonic tone, which when added to the existing tone gives the sound of a second skin to the toms.

This is set for all the toms, so you choose whether you want a kit of single or double headed toms.

You switch on or off the double head tone while programming the hi tom (tom 1). When this voice is soft i.e. the voice prog led is flashing – indicated on the SDS 9 electronics by , you push the bottom of the five buttons (2nd skin on/off). This will turn it on if it is off, or off if it is on. You have to listen carefully because its' effect is subtle – make the pitch high and you should hear it easily). The current setting is stored when you store tom 1.

'COPY TOM' – A SIMPLE WAY TO PROGRAM THE TOMS

Often you will be programming tom 1 and get a great sound. You will then want to get the same sound (to get a matched set), on the other toms. You could of course switch to tom 2 and adjust it to get the same sound but at a lower pitch. To make setting of the toms simpler you can copy the hi tom (tom 1) to the other toms with an appropriate pitch change.

To do this, program your great sound on tom 1. To copy this to the other toms, first harden tom 1 (use the save voice button – the voice program led with stop flashing). Now press the bottom button – labelled "2nd skin/copy tom". This will copy the parameters in tom 1 – its current sound, to the second and third toms, with an appropriate pitch change.

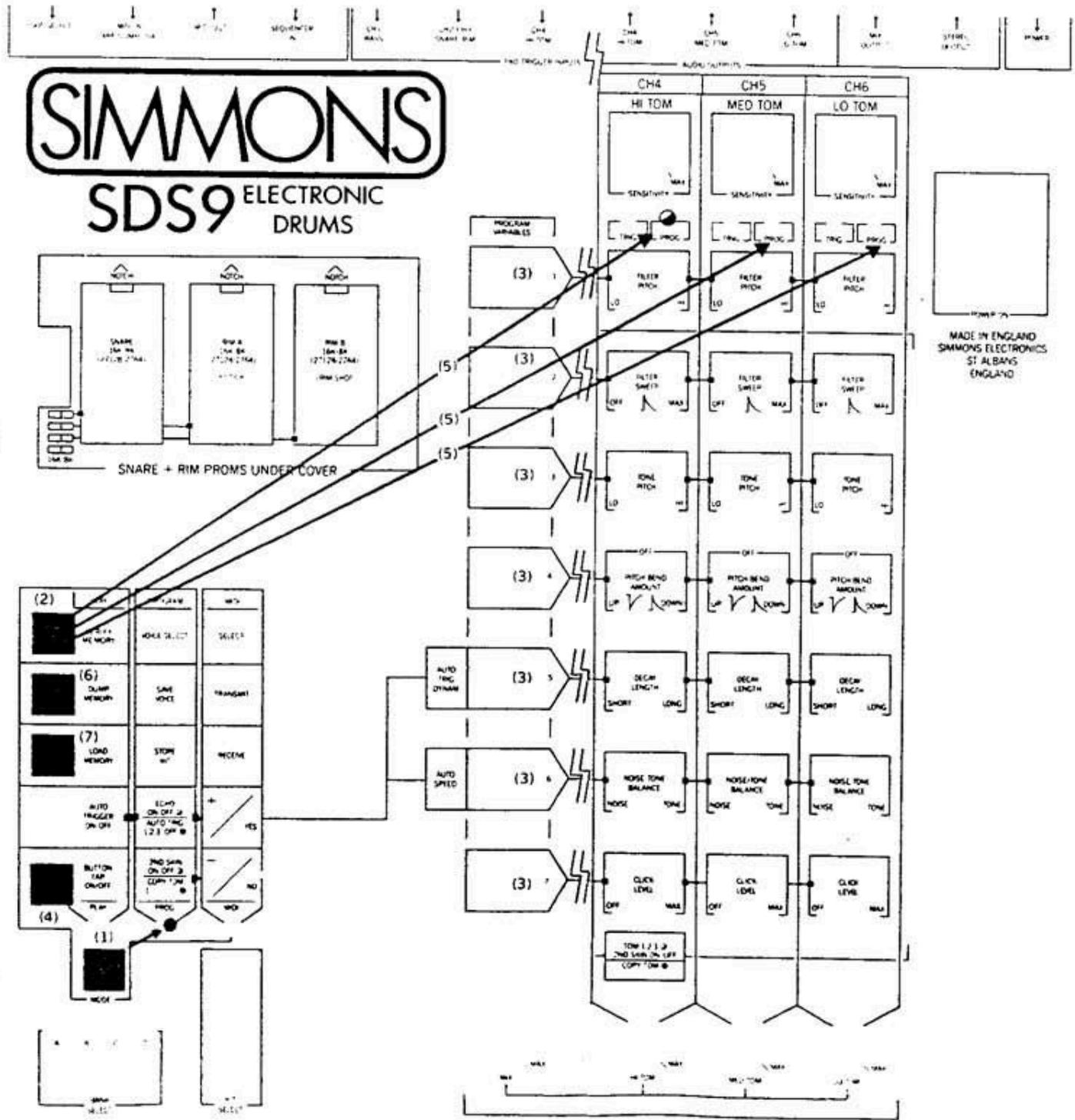
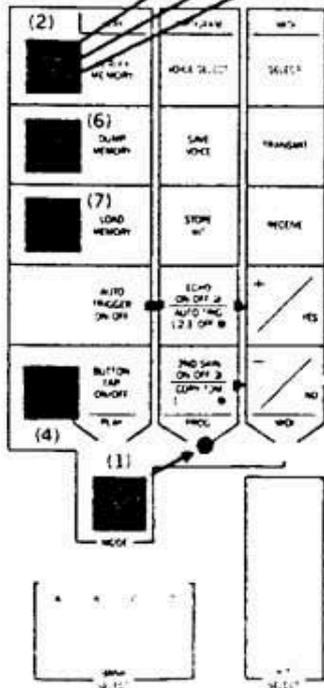
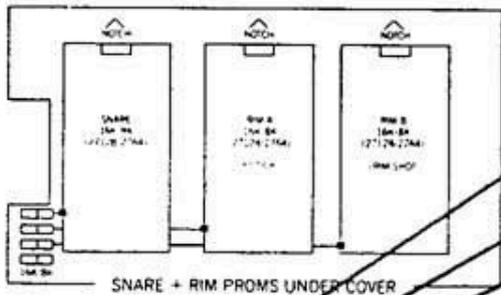
Of course, once successfully copied, you can change any of the variables to adjust the sound.

RECAP ON TOM-TOM PROGRAMMING

Enter prog by pressing mode (1) select hi tom to program, by pressing voice select 4 times (2). The prog led on the hi tom channel will flash. Alter any of the seven parameters as you require (3). Whilst this prog led is flashing () use the 2nd skin on/off button to switch on or off the second skin as required (4). Press voice select to program CH5, and press once more if you wish to program CH6 (5) (to return to CH4-hi tom – simply keep pressing the voice select button to cycle back) or if you want to save CH4 press save voice (6) – the prog led will go hard (stop flashing). Pressing store kit will store the new settings (7), pressing copy tom 1 will copy the sound into CH5 and CH6 (4) (med + lo toms) and then hitting store kit will store all three tom toms (7).

SIMMONS

SDS9 ELECTRONIC DRUMS



MORE COMPLEX AUTO-TRIGGER VARIATIONS

We have already covered the basic auto-trigger facility which enables you to hear kit sounds without playing them, thus leaving your hands free to change kits etc.

In program mode, there are several variations on this theme. First enter program mode and select a voice (any voice for the time being). Then "harden" the voice by pressing save voice. If you press the Auto-Trigger button, you will hear each voice triggered once in turn as before (mode 1).

If you press the auto-trigger button again, you will only hear the voice you are currently programming, and the trigger is at a constant dynamic (mode 2). Press a third time, and you will hear the same voice triggered this time with an increasing dynamic, rising to a peak (mode 3).

Mode 4 applies only to the snare/rim voices and the toms, and are different in both cases. With the snare/rim voices Mode 4 triggers first the snare, then the rim, then both together. This is very useful for setting up the balance between snare and rim. In mode 4 the tom voices are triggered one after the other in a 'triple' sequence, allowing easy comparison between tom sounds.

The dynamics and trigger speed of all these modes are controlled by program variable pots 5 and 6 (note – these will only operate when the voice is saved, or 'hard'. If you turn these pots while the voice is 'soft' you will change the sound of the voice in question).

AUTO TRIG MODES – DURING PROGRAMMING ONLY

To switch between modes the prog led on the relevant channel must be hard (non-flashing). Use the auto trigger button to cycle around the modes.

Pot 5 varies the trigger dynamics
Pot 6 varies the trigger speed

prog led must be hard

MODE	BASS	SNARE/RIM		HI TOM	MED TOM	LO TOM
1	Hits bass + then other channels	Hits snare then other channels	Hits rim then other channels	Hits hi tom then other channels	Hits med tom then other channels	Hits lo tom then other channels
2	Hits bass single dynamic	Hits snare single dynamic	Hits rim single dynamic	Hits hi tom single dynamic	Hits med tom single dynamic	Hits lo tom single dynamic
3	Hits bass with rising dynamic	Hits snare with rising dynamic	Hits rim with rising dynamic	Hits hi tom with rising dynamic	Hits med tom with rising dynamic	Hits lo tom with rising dynamic
4	As mode 3	Hits snare then rim, then both		Cycles around hi tom – med tom – lo tom	Cycles around hi tom – med tom – lo tom	Cycles around hi tom – med tom – lo tom
5	Off	Off	Off	Off	Off	Off

Note: Echo is disabled during auto trigger as all the repeating echoes would be very confusing.