SSL C300

At a time when more and more attention is lavished on the workstation, a 'proper' desk has to have a sharp line in justification to warrant consideration. ROB JAMES looks at a digital postproduction console with plenty of features and front.

LIFE USED TO BE SIMPLE for console manufacturers. Each postproduction console had its own particular strengths but nobody questioned the necessity of having one. The playing field was reasonably level, although competition was often fierce, with the worst offenders making a shoal of barracuda look positively cuddly.

In recent years the whole mid to high-end market has been skewed, partly by some extremely curious commercial practices, but mostly by the rise and rise of the workstation. In the halcyon days the console ruled the roost. Even in the early digital age the console was the master. Both in the very real context of providing audio and timecode sync for the entire system but also in a more conceptual sense. As the industry slowly moved from linear recording to random access, nonlinear hard disk, the console continued to be the tool of choice for making the major qualitative changes. The room with the big console was still the place where adjustments to equalisation and dynamic range were made, effects added and the final mix produced.

A few, more enterprising, practitioners had long been doing their own thing and producing semi-premixed effects and even dialogue sequences, often to the considerable annoyance of the postproduction dubbing (re-recording) mixers. The DAW has its feet under the table and material arrives premixed, EQed and with effects in place. Notwithstanding, the final mix console remains the place where the pigeons come home to roost and all problems must be solved.

The workstation has long promised to replace not only linear recorders and sticky tape editing but also the console at what appears at first glance to be ludicrously low cost. In recent years the DAW has largely managed to achieve the first goal. Even the 'dedicated' recorders of today owe more to

workstation technology than to any linear recorder, despite appearances.

The battle lines are drawn and it is the traditional console that is under threat. It is perfectly fair to say that a modern digital post console has much in common with a workstation equipped with a hardware control surface. Whether the processing is contained within the surface or in a remote rack or PC/Mac the principle is the same. The user interface is merely a remote control for the processing and I-O. It is also fair to say that workstations are catching up fast as the sheer horsepower of host PCs and add-on DSP cards increases in accordance with 'Moores law'. However, conceptually and ergonomically the DAW — even with a large scale hardware control surface — has a very long way to go before it can hope to truly supplant a state-of-the-art 'big-gun' console in efficiency.

Semi-pro workstation sticker prices have raised unrealistic expectations among the bean-counters. For some reason they seem to have lost sight of the fact that the person with the ears is the most expensive piece of equipment in the room. Over its working life a console doesn't have to save much production time to more than justify a significant price premium.

Against this background the SSL C300 has arrived (starting at around UK£100,000 + VAT). Building on decades of experience SSL has leveraged the technology developed for the other C series consoles and coupled it with heavy-duty 'Timefreeze' automation. A single Centuri core offers up to 512 mix inputs feeding up to 80 buses. While the rest of the C series are optimised for other purposes the C300 is quite definitely a post console.

Control surface paradigms can be loosely split into two groups. The first is so-called 'knob per function' with recognisable channel strips bristling with knobs and buttons as far as the eye can see. The assignable alternative usually comes with a decent number of

fader strips but relatively few controls per strip and a central section with lots of knobs and buttons. C300 belongs to the latter category.

Layering and bank switching are used to control a large number of channels from a much smaller number of strips. Fixed Bays always show the same sets of channels — the relationship between strip and resource is fixed and Scrolling Bays provide the moving window across all the input channels. Channels can be scrolled channel by channel, bay by bay or three bays at once. This follows common DAW practice so it doesn't matter if the bay is controlling C300 channels or workstation channels. Apart from input channels there are Buses, Main Outputs, 16 assignable Direct Bus Access Channels and Control Faders (VCA-style grouping). User Layers can contain a user-defined mix of signals, input channels, buses, outputs and DAW tracks.

The C300 surface is constructed from just four main building blocks: Channel bays eight-fader strips wide, Channel Fader Strips, one or more Master Channels and one, two or three Centre Sections.

Fader Strips have a touch-sensitive moving fader, an input meter, two indicators showing linking and strip format, automation mode and write status plus a Select key for DAW tracks and Solo, PFL On and Off buttons, pan pot and linking buttons. The 'Free Controls' section has two buttons, two knobs with switches each with a four-character display and an 8-character name label. Multiple signal paths can be formatted as stereo, LCR or many other formats up to 7.1 to ensure the panning and processing is dealt with appropriately.

C300 offers three types of grouping — for formatting a channel or bus, channel linking and control grouping. All faders in a formatted link can be 'hidden' under a single master (greatly increasing the number of inputs and buses directly accessible from the surface) or 'fanned out' to show their constituent channels at the touch of a key. C300 also has SSL's Theta panning, developed for the K series, which allows you to deal with sound as a variable arc that can be rotated around the central position.

A Master Channel contains all the controls for a single strip — EQ, dynamics and so on — and far more controls than could ever be conveniently accommodated in a vertical channel strip. The optional motorised joystick X-Y controller can be mapped to control any two parameters and serves as an especially intuitive method of adjusting gain and frequency. Each operator position must have at least one Master Channel and a Master Channel can be fitted in each bay if desired.

The Centre section has the transport, automation and monitoring controls, all the global console set-up and switching and something SSL calls The POD, a dedicated area that controls what appears on the faders. The largest element is a huge touch-screen used for things you set-up and leave and also to display automation tracks, etc.

Buses and master faders have a killer feature, the Spill function. One key 'spills' all the source channels feeding a bus onto the surface, known as a Spill Layer.

In the meter-bridge TFT screens show meters appropriate to the format of the strip, a graphic representation of the EQ curve and various other displays depending on what you are doing at the time.

Monitoring is another area where workstations often struggle. Here a 128-channel (64 dual-input channels) into 8 buses monitor matrix offers flexibility with serial record control and up to 64 Pec/Direct switches.

C300

Downstream of the monitor matrix is the output matrix, an 8 x 8 array. You can have up to four sets of monitor outputs each anything from mono to 8-channels wide. For each set there is a set of eight fold down stores. This allows, for example, a 5.1 mix on output 1 to be monitored in stereo on a different set of speakers with a single button push. Calibration includes pink noise generator and time delays for each channel. A monitoring insert point between the monitor and output matrices enables a codec to be used to check how the mix will sound in the final delivery format. A 32 x 16 programme/re-record matrix allows for multiple final mixes in various formats to be made simultaneously and any bus can be fed back into an input channel (re-assigned).

The minimum configuration is 8 faders and the maximum is 128. There is room for 8 I-O cards in any mix of types from a choice of AES-EBU, MADI and analogue line and mic options. Similarly, the back-end processor crate can have a maximum of 8 DSP cards fitted. The DSP boards, each equipped with 12 Analogue Devices Sharc processors, provide a pool of dynamically allocated processing. One chip may be

running EQ processes, another dynamics. Each chip is fed from a dual-port RAM to its own serial routing bus on the card. The channels are constructed by signals running through the various DSPs with time alignment blocks. All processing is pre-fader.

There is no preset assignment of aux buses. You can configure each channel with a different set of aux buses with up to 18 sends, far more than anyone is ever likely to use. They go to formatted buses so if you want 18 x 5.1 sends you can have them.

Apart from the pool, one of three Mixer Models can be applied to each board independently. Short gives 32 channels feeding all 80 buses. Tall gives 48 channels feeding a continuous block of 56 of the 80 buses and Grande gives 80 channels feeding a continuous block of 40 of the 80 buses.

The Short model gives 4-band EQ, filters and dynamics on each channel — the others are less generous but still impressive. Cards can be reconfigured without a reboot and processing is allocated as it is required. For example, if an EQ is in bypass it isn't consuming DSP and switching a filter from 12dB/octave to 24dB/octave seamlessly adds the necessary extra processing. In addition to the total of 80 programme buses there are a further 8 as a permanent AFL/Listen in-place monitoring facility.

All this is calculated to give the maximum bang for the buck with a smaller, cheaper console fully capable of handling large productions. Multi-operator is part of the basic system — just add the control surface parts. This is not then a fixed configuration as a single operator can control the whole console when required.

Automation is key. The C300 automation comes out of a truly non-linear environment harking back to

the SSL Scenaria. Although it appears to be timecode based it is in reality based on a sample clock and is non-linear in the sense that it does not require play-speed timecode to operate. Automation can be read and written at any forward speed including stop. The design eschews touch sense rotary controls in favour of good old buttons (in the knobs). This makes it much simpler to set up, say, an EQ and punch it in wherever you wish, even with the transport stationery if desired. You can pull up a frame in the project, adjust the controls to where you want them to be, hit Play and be recording automation from that point. Tri-coloured indicators show Read, Write and Preview. There are some unique automation modes. For example, if you rewind while in Write on a section that hasn't been written before then when you arrive at the point where writing stopped, the control(s) automatically drop back into Write. The Join key (depending on the current mode) lets you adjust settings on the fly for controls in Write then roll back and drop the latest settings into the mix at the point where you hit the key.

The computers controlling all of this are proprietary SSL designs with their own operating system, so no overlay of PC or Mac baggage to get in the way.

Nowadays, if they want to be taken seriously, post consoles must support the enfant terrible DAW with more than just a nod. The closest thing we have to a *lingua franca* between disparate controllers and workstations is the Mackie HUI protocol, which uses MIDI. Unfortunately HUI is rather restricted. The C300 gets around this to some extent by providing multiple HUI ports to control up to three DAWs, each with 24 tracks, but the C300 Master Strip doesn't control anything on the DAW. According to SSL design guru Chris Jenkins, the HUI protocol is best left alone. If you mess with it, you'll find yourself redoing it when the DAW manufacturer comes out with a software revision.

The assignable paradigm poses many challenges for designers. Although the basic idea works well enough with simple set-ups and a small number of inputs and outputs, scaling to a few hundred inputs can make it difficult or impossible to keep track of what is going on. Automation can also be tricky unless the designer thinks laterally. Here in the C300 most of the obstacles have been elegantly overcome, although I have no doubt that, just as with any other console of this scale and power, there will be some initial head-scratching.

This is a 'proper' console. It hits all the right spots. Ergonomics, impeccable sound and very powerful automation combine to make this a highly productive and cost effective tool. There remains a problem. No matter how worthy the product, the real issue facing manufacturers of proper consoles is how best to accommodate DAWs.

The C300 is a postproduction console for the age. It offers significant and solid horsepower with finely honed automation and an ingenious, intuitive and ergonomic user interface. ■

PROS	Excellent automation; sheer horsepower; scaleability.
CONS	Needs more comprehensive DAW control; not much.

Contact

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