

Thermionic Culture -- Fat Bustard Operation manual ---

Introduction :

The ***Fat Bustard*** is a passive input summing mixer that has all valve summing and output stages.

There are 12 input channels and 2 auxiliary inputs.

Included in the output stage are facilities for stereo EQ, gain, distortion and also control of the stereo /mono balance over different frequencies. These features are all tried, tested and felt to be useful and unique to what the ***Fat Bustard*** offers and what it can be used to achieve.

The ***Fat Bustard*** owes its sound largely to the unusual choice of valves used.

The summing / EQ amplifier uses 5965 valves, only used in audio applications by Fairchild before now. These excellent valves give smoothness and fatness to the sound.

The output amplifier uses 6SN7 valves. These large output valves give a huge amount of headroom and a tough punchy character. The stereo width is controlled by a 12AU7 valve giving a wide spectrum to the sound.

The ***Fat Bustard*** has been left with unbalanced inputs and output as standard because, after much experimentation, the sound of the unit was preferred this way.

Inputs:

The 12 inputs can be connected by the 12 labelled XLR sockets on the back of the unit. As the front panel indicates, 8 of these inputs are pairs of stereo inputs and 4 are mono inputs.

The stereo inputs (channels 1 to 8) have a **stereo** rotary **fader** and a **channel on/off** switch.

The mono inputs (channels 9 to 12) have a **mono** rotary **fader**, pan pot **and channel on/off** switch. There is also a **Mono/Pan** switch for each mono channel. Set to **Pan** the channel can be panned left to right with the pan pot. Set to **Mono** the channel won't be affected by the pan pot and will go to stereo centre. The channel will also gain about 3dB of gain.

The 2 auxiliary inputs can be used as either a further 2 inputs to be summed, or as the interface for the forthcoming ***Little Bustard*** which will provide the facility to extend the number of input channels to be summed. There are 2 XLR sockets on the back of the unit that are used to connect the auxiliary inputs. When used as 2 more inputs to be summed they have an on/off switch each. Also the inputs will normally be configured as **Aux 1** to stereo left and **Aux 2** to stereo right. The **Aux to centre** switch sends both Aux inputs to stereo centre (mono).

Attitude:

The **Attitude** control has the same effect as found in Thermionic Cultures *The Rooster*. At low settings (1 is low, Max is high) the distortion is kept to a minimum and the frequency response of the unit is very flat. At higher settings the distortion increases and the frequency response changes, tending to become less linear at high frequencies. At setting 1 on the attitude control the summing amplifier is working at unity(0dB) gain. As the Attitude control is increased the gain rises to +14dB at the max setting.

EQ section:

The Eq section comprises a **Bass lift**, **Top lift**, **Bass cut** and **Top cut**.

The **Bass lift** and **Top lift** utilise Thermionic Cultures own **varislope** Eq curves. This means that the **Bass lift** curve starts to rise at 2kHz at low settings and at high settings the curve peaks at 50 Hz.

The **Top lift** curve starts to rise at 800Hz at low settings and then gives a peak at 10kHz at high settings.

The **Bass cut** is a stepped switch control.

Positions 1 to 3 give a 6dB / octave High pass filter rising in frequency as the control is increased. Then positions 4 to 6 give a shelving filter that begins to act higher in frequency as the control is increased. This is intended to be used with the **Bass lift** control, much like classic passive valve EQ designs whereby a bass cut that acts slightly higher than the bass lift will give a mid cut, then a bass lift.

The control may be switched in and out of circuit

The **Top cut** is also a stepped switch control.

It acts in the same way as the **Bass cut** control.

Positions 1 to 3 give a 6dB / octave lo pass filter that decreases in frequency as the control is increased. Positions 4 to 6 give a shelving filter that acts lower in frequency the more the control is increased.

Stereo Width Section:

This section of the *Fat Bustard* is concerned with adjusting and tailoring the width of stereo with respect to frequency. Some features here are very similar to those found in Elliptical equalisers, most often found in mastering applications. Specifically vinyl mastering and cutting.

Stereo Spread:

This control can increase the apparent width of stereo at full bandwidth, or frequencies above a selected point ascertained by the **Bandwidth** control. As the **Spread** control is increased the stereo width increases from normal to very exaggerated.

There is an **On/Off** switch located next to the **Spread** control. This takes the **Spread** in and out of circuit.

Bandwidth:

This control is a stepped switch. At the bottom position the spread can be increased across all frequencies. Then the next positions give a high pass filter function to the spread at frequencies 100Hz, 250Hz, and 5kHz respectively. This effectively means that at maximum (5kHz) the spread affects higher frequencies only.

Bass to centre:

This control is a switched step control. At the bottom position (Full) the stereo is unaffected. At the next position up frequencies below 100Hz are made Mono whilst frequencies above are stereo. At the next position frequencies below 200Hz are made Mono. At the last position all frequencies are Mono.

Balance:

This control allows a fine control over the left / right balance of the *Fat Bustard*. This can be very useful in correcting any discrepancies of outboard equipment that may be slightly misaligned with respect to the level of the left and right hand signals.

Output Level:

This control is a rotary switch that governs the final output level of the *Fat Bustard*. The switch is a high quality Elmer switch and gives a smooth precise result.

Operational hints:

Try increasing the Attitude control for more aggression, punch, warmth in the sound of a mix.

Bass drums, snare drums and vocals can all benefit from being sent to a mono channel with pan turned off for more level. This allows them to be high in the mix without running preceding outboard equipment unnecessarily hot.

Try using the bass cut shelving positions together with the bass lift for that classic Pultec style equalisation trick.

A harsh sounding mix can be enhanced by using the stereo spread control at a frequency above the Full setting on the bandwidth control. In effect the harsh upper frequencies of the Mono part of the mix will be softened and the stereo part of the mix will sound more open.

Drums can be made more solid by using the bass to centre control, the low end will sound more focused and feel heavier.

Don't be afraid to use the top and bottom lift EQ. There is no extra circuitry in the signal path, so no degradation of the signal occurs.

The output valves will handle huge amounts of headroom, so don't be afraid to run the ***Fat Bustard*** hot. The needles in the meters won't bend if you go too far, believe me I've tried!!

This unit makes a great sidecar desk when mixing, if you have the luxury, maybe put your drums through it. Or think of it as a second mix buss.