

session brass players down in the studio and carefully mic'd everything up. It was sounding really good, and George Harrison turned around and said, 'Right, now let's really screw it up. I want you to distort it beyond all recognition'. So we used two of the RS61s in series. When the musicians came up for the first playback, George said, 'I've got to apologise to you in advance for what we've done to this - you're not going to like it!' The brass signal had been sent to Room 47, patched through two RS61s in the Echo Racks, distorted, and returned to the desk, before being recorded to the eight-track tape.

(The RS61 was powered by a separate rack unit, the RS62 power pack. Also developed in 1952, each RS62 power supply supported up to three RS61s. The unit had three sets of mains power switches, pilot lights, test jacks, and fuses.)

**“If they wanted some really dirty distortion, we used to put two RS61s in series. You could really overdrive something and get some nice distortion going.” – Brian Gibson**

## RS106 “Echo Control Unit” – BandPass Filter

One of the absolutely vital components of Abbey Road's echo chamber sound was the RS106 filter used before the chamber. The RS106 was a simple filter known as a “bandpass” filter. It was by no means a revolutionary design, and, for decades, laboratories around the world had been using similar filters. At Abbey Road (as at many other studios), the engineers had discovered that filtering the signal before it entered the chamber helped to improve the sound. The RS106 removed some of the upper and lower frequencies, sending only a middle-band of frequencies to the chamber. “Echo chambers don't like lower frequencies being pumped into them,” explains Malcolm Addey. “It can produce a very unpleasant boomy sound in your mix. Anyone who has accidentally turned up the echo on a string bass will know about that. So it was common practice to have a Hi-pass/Low-pass filter following the echo send circuit of the mixing console.” In a similar way, having too many high frequencies coming out of the chamber would smear the clarity of the original sound.

It should be noted that the studio's famous chamber sound would have been quite different without this RS106 pre-filtering; it was an

integral component of that sound. In fact, the RS106 was designed *specifically* for this purpose in 1954, as evidenced by its official title of “RS106A, Echo Control Unit.” Although the actual chamber setup itself would rarely be modified, the RS106 settings could change from session to session, as each Balance Engineer specified his preferred RS106 settings on the setup sheets. There was not a great deal of variation in tastes, though, and the typical setting was to cut the Bass at 600 Hertz, and cut the Top at 10,000 Hertz. After this filtering, the signal was sent to the amplifiers that drove the chamber speakers. There were seven RS106 filters in the Echo Racks: three to be used for chamber sends, plus four spare units. (The four EMT plates [pg 281] were also fed from the Echo Rack system, and these four spare RS106s could be used to pre-filter the plates' signal in a similar manner.)

The RS106 was passive (it only turned *down* certain frequencies, nothing was boosted), so it had no mains power or valve stages. It was built in a simple rackmount box (roughly 3” high) with the typical grey EMI engraved panel. The controls were simple. A large “pointer” knob on the Right set the Bass-Cut filter, the one that atten-

