



Touring Recording's Memory Lane: 1958

1958 was a good year for music. LPs had been on sale for ten years and liberated recorded music from three-minute limits. Jazz soloists could stretch out and play a dozen choruses, even if they had only enough ideas to fill one.

Photographer Art Kane persuaded the cream of New York's jazz musicians to gather in Harlem at 10 am for the seminal jazz photo that appeared in *Esquire* magazine and has been copied and photocatted ever since. Jean Bach's great movie, "A Great Day in Harlem," tells how many of the musos had never known there were two ten o'clocks in the same day.

At the other end of the musical scale, the Decca Record Company let producer John Culshaw loose in Vienna on a plan to record the entire Ring Cycle of operas, written by Hitler's favorite composer Richard Wagner. The project took seven years to complete and now spans 14 CDs, which will set you back over £150 if you ever get time to listen to them.

Decca's project only happened because on March 25, 1958, the RIAA (Recording Industry Association of America) set the standard for recording two-channel stereo in a single groove of the vinyl LP records which had been introduced by Columbia CBS in spring 1948. Today we think of the RIAA mainly as a trade body that plays Canute by obstructing new technology. But in the 50s things were very different.

FORMAT FIGHTS

The RIAA needed to choose between several competing systems, but the standards battle was played out before commercial launch, rather than afterwards and with the public as guinea pig cannon fodder—as happened later with VHS versus Beta, cassette versus 8-track cartridge, Laservision versus Selectavision video disc, DCC versus Mini Disc, DACD versus DVD-A, and now the

ultimate insanity, Blu-ray versus HD-DVD.

The industry had learned from the lessons of ten years earlier when, in February 1949, RCA Victor launched a 7" 45 rpm Extended Play disc to rival Columbia's 12" 33.3 rpm disc. The two formats could co-exist only because they solved different problems—the flexible EP replaced the fragile 78 rpm shellac single, and the LP gave much longer playing time—and because it was relatively easy to build a deck that played both kinds of disc.

There were much more basic decisions to be made when setting the stereo standard. Should new stereo discs be compatible with the mono decks sold over the previous ten years, or should the new discs aim for the highest possible audio quality without any compromises to make them usable with existing players—and so oblige the record companies to issue two versions of every recording, one mono and one stereo?

US audio engineer Emory Cook updated an idea used by Bell Labs in the 1930s when Bell boffins [researchers—Eds.] were making test stereo recordings of Leopold Stokowski. Cook used two cartridges to play two separate grooves, one on the inner half of the disc and the other on the outer half. Apart from the increased cost and complexity, recording time was halved; and inner groove distortion unbalanced the left and right channel audio quality.

In the UK Arnold Sugden demonstrated a stereo disc with a single groove, vertically modulated with one channel and laterally modulated with the other. This V/L approach had been used and patented by Alan Blumlein of EMI in the early 30s, but it suffered from poor compatibility with mono pickups which are designed to move only laterally.

Decca in London was working on a

third system, which spans off from research done in the War on the high fidelity recording of submarine sounds. Decca had pushed the recorded bandwidth to 28kHz for mono, and for stereo the band was split in two, with a modulated carrier at 14kHz pushing one channel into the 0 - 13kHz band with the other at 15 - 28kHz. Decca's multiplex stereo system was not compatible with mono players, but the audio quality was good. In fact, much the same technique was later used by JVC for its ill-fated CD-4 "discrete" quadraphonic system; JVC put the rear channels in a higher band than the conventional stereo channels.

Westrex (the manufacturing wing of Bell Labs) proposed the 45/45 system that had been developed and patented by Alan Blumlein at EMI in the UK in the 30s. The left and right channels are recorded at right angles to the groove walls, which are at 45° to the disc surface. Equal and in-phase mono signals result in lateral modulation of the groove so play as mono with a mono pickup; stereo signals add vertical modulation which is tracked by a stereo pickup with vertical compliance.

Arguments raged on whether the RIAA's choice was correct. In the UK *Gramophone* magazine published a blistering article by Technical Editor Percy Wilson, chastising Westrex and the RIAA for failing to acknowledge Blumlein's contribution and calling its system "Westrex stereo."

The truth almost certainly is that the Westrex engineers, and RIAA, had never heard of Alan Blumlein or his work—just as Blumlein knew nothing of the experiments with stereo that Bell Labs was carrying out with Stokowski at the same time as Blumlein's test recordings of Sir Thomas Beecham at Abbey Road. In those days the world was not a global village.

STEREO

Arguments also raged on the relative merits of tape and disc recording, because stereo tape recordings had been sold for home use in both the US and UK (by EMI) since 1955. The soft groove of a vinyl disc could be wiped clean of high

frequencies by just one play with a heavy cartridge and stiff stylus. But even slight azimuth misalignment of stereo heads of a tape player had the same dulling effect; and if the tape heads picked up any permanent magnetism, just one play could add background hiss that masked high frequencies.

"Stereosonic" tapes were not popular, so once the RIAA disc standard was announced, popular magazines in the US promised a flood of stereo players and discs. In fact, nothing very much happened until the end of 1958. There were no pickups to buy and very few stereo amplifier and speaker systems. The record companies needed time to cut and press 45/45 discs.

The first stereo LPs appeared in the autumn of 1958, all from independent labels and many of them of limited appeal such as "Railroad Sounds," "Bullring," "Bagpipes and Drums," and "Marching Along with the Dukes of Dixieland." Recordings were usually issued in two versions, mono and stereo, because the industry was still wary of the mono-stereo compatibility claims.

By the end of the year there were around 200 stereo titles in the US, including one that has truly stood the test of time. Shelley Manne and his Friends playing "My Fair Lady" is still widely available on CD. Manne's friends included pianist Andre Previn and the sessions were taped in Los Angeles, during a single day in August 1956. The re-

cording serves as a nice reminder of the fine stereo quality that was already being captured in commercial recording studios as the record companies got ready for the RIAA to set a disc standard and open the release floodgates.

Because engineers were using only a few microphones, with their sound mixed live into stereo, and because the mikes were placed well away from the instruments, those early recordings achieved far more tonal accuracy than today's close-miked excesses.

It's hard now to imagine the kind of impact the introduction of stereo discs had. I was in Edinburgh for the Fringe Festival when the first playback systems became available and vividly recall going to a hi-fi shop on Princes Street, accompanied by a musician friend (who later went on to mastermind the Three Tenors recording) and saying very honestly to the sales staff: "We aren't going to buy anything but we would really like to hear what this new stereo is all about; can you demonstrate it?"

They did and we were blown away.

RIAA CURVE

The RIAA also stepped in to bring order out of the chaos over equalization. To get equal level at all frequencies from a magnetic moving coil playback cartridge would require very large stylus movements at low frequencies, which in turn means the grooves must undulate wildly and so be very widely spaced—which

would drastically reduce playtime per side. So at the recording stage the bass, below around 1kHz, is reduced to keep groove undulation manageable; then for playback the bass is boosted. At the same time high frequencies above 1kHz are boosted during recording and reduced on playback, to cut background hiss noise. Some bass frequencies are boosted less than others during playback, to avoid boosting unwanted mains hum. Similar techniques are used for magnetic tape recording.

In theory all the boosting and reducing equalization cancels out to give a neutral effect; but this only happens if the record and playback circuits are perfect mirror images. In the early days of the LP different record companies used different equalization curves—over a hundred of them—with radical variations between Europe and the US, and between LP and EP modes.

The Audio Engineering Society had tried in 1951 to set a standard curve but it did not stick. By 1954 the dust was settling and the number of curves reducing. When the RIAA set the standard for stereo in 1958, the world was more than ready for a single equalization standard and the RIAA curve—which was in fact very similar to the curve used by RCA for the EP—became an internationally accepted standard.

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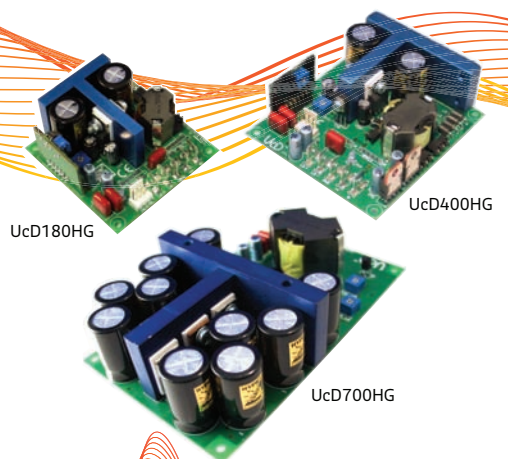
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had been recording stereo in the pre-RIAA years. To try and win back audiences lost to television, Hollywood was using three track 35mm magnetic film to record stereo sound for the Cinemascope widescreen movies that started to appear in 1953, with "How to Marry a Millionaire" and "The Robe."

Audio pioneer Bert Whyte was first to spot the music potential of film. He was born in Belfast, but brought up in the US, and in 1949 was working for Magnecord, the US company which produced the first commercial stereo tape recorder. In 1951 Whyte started making stereo tape recordings, some of which were later issued—first on tape and then on disc—by the Everest label which he co-founded in the mid-50s.

A recently released CD from Music

and Arts (CD 1190) includes live recordings of Leopold Stokowski and the Detroit Symphony Orchestra made by Whyte in November 1952. For these Whyte used a Magnecord PT-6BA2HZ tape deck running at 15 ips, with the stereo heads staggered to avoid crosstalk. The tapes eventually ended up with the Stokowski Society and the stereo image nicely captures the unorthodox orchestra layout that Stokie favored.

Another of Whyte's tapes, of the Stan Kenton big band playing at the Blue Note club in Chicago in September 1952, is almost certainly the earliest live stereo jazz recording (Dynaflo CD 2007-1). Whyte had bribed a waitress to get him as close to the band as possible and set up his trusty Magnecord with two Telefunken U-47 omnidirectional condenser

tube mikes. He was using 5" spools of tape at 7.5 ips, so with only half an hour of recording time he turned the machine off for all announcements. Nevertheless, there are snatches of Kenton's chat with his musicians that give a remarkably intimate feel to the session; and vocalist Kay Brown is so far off mike that she sounds as though she is singing You're Mine You from a different room.

The sleeve note whets appetites with the aside that Bert Whyte went back to the Blue Note a few months later and recorded Woody Herman's band in stereo—but the tapes cannot be found.

Whyte then turned to film, trying 35mm magnetic instead of tape because of the wider tracks and higher recording speed. Everest's recording of Aaron Copland's "Appalachian Spring" and George Gershwin's "An American in Paris" gives a rare opportunity to compare the sound of tape with film (EVC 9003). For both recordings Bert Whyte had three U-47s in a spaced array across the front of the orchestra. He used half inch three track tape to record the London Symphony Orchestra at Walthamstow Assembly Hall and three track 35mm magnetic-coated film for the Pittsburgh Symphony Orchestra in Pittsburgh's Heinz Hall. The recording dates are unclear but pre-RIAA.

Some of the Whyte recordings have been skillfully re-mastered by Mark Obert-Thorn in the UK. It was Obert-Thorn who previously mastered the intriguing "accidental stereo" recording of Sir Edward Elgar conducting the BBC Symphony Orchestra at EMI Abbey Road Studio 1 in April 1933 (Naxos 8.111022). Two master wax disc recordings were made of the same performance of Elgar's Cockaigne Overture and the CD uses one for the left channel and the other for the right. Controversy rages over whether the two waxes shared the same feed from a single microphone, or each had its own mike—thereby inadvertently capturing a stereo image of the original sound. The Naxos recording sounds like stereo, but this may be the result of phase shifts introduced by combining two recordings made on mechanically driven cutters running at slightly irregular speeds.

PRE-RIAA STEREO

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reo are, of course, the experimental recordings made by Bell Labs in the US, and EMI in the UK, in the early 30s. Bell was working with Leopold Stokowski and testing a double groove system similar to that later proposed to the RIAA by Emory Cook; at the same time, and without either company knowing it, Alan Blumlein was recording Thomas Beecham at Abbey Road using the single groove stereo system that eventually morphed into the RIAA's "Westrex" standard.

Although rather poor quality excerpts from the Beecham recordings were once issued by EMI on a commemorative LP, there is no sign yet of a CD release. Given the current state of EMI, it would be unwise to hold any breaths.

The Bell Labs Stokowski recordings were released only on limited edition LPs, and the Bell empire breakup leaves little hope of a CD version.

The only lasting legacy of Bell's experiments with Stokowski is "Fantasia," the animated movie made by Disney in 1940. The original sound track—eight track optical mixed to four track for cinema release—was "preserved" when the playback equipment fell into disrepair and the studio piped the sound across Los Angeles by phone lines for dubbing to tape. The lines were of different length and added phase shifts, as well as trimming the high frequencies. Disney later re-recorded the soundtrack with a different orchestra and conductor, and has now re-made the film. So the original audio legacy is lost.

By far the most remarkable example of pre-RIAA stereo remains the commemorative CD produced by the Audio Engineering Society in 1993. This includes a recording made in Berlin in September 1994 by Herbert Von Karajan and the Orchester der Berliner Staatsoper. Although the city was torn by war, Von Karajan conducted while the orchestra fiddled and Helmut Kruger from Berlin's radio station used a modified Telefunken recorder, with AC bias and two heads, to capture Bruckner's Eighth in stereo. Even today the recording leaps off the disc, and across the sound stage. For legal reasons, we are told, the recording is still not available outside the AES.

Expiration of copyrights is the only hope. That's how Obert-Thorn and Naxos were able to release the Elgar "accident" even though EMI had previously

flatly refused to do anything with it.

There are other "is it really pre-RIAA stereo" recordings available, which are a little easier to find. A CD from Viper's Nest in the USA (VN-157) claims to offer the genuine stereo sound of the Glenn Miller Orchestra in early 1941. The band was in Hollywood filming "Sun Valley Serenade" and for the elaborate musical numbers (including "It Happened in Sun Valley" and "Chattanooga Choo Choo") 20th Century Fox's engineers tried out a new use of their three track optical recorders. Three track recording has been traditionally used by the movie industry to keep music, dialogue, and sound effects separate until final mix-down. This makes it much easier to produce different language versions of the movie. The Fox engineers used the three tracks to record different sections of the band and vocalists, and so give more flexibility during final mix-down to a mono music track.

Details of who exactly got hold of the original optical master tracks and how they remixed them into what the sleeve describes as "the original Glenn Miller Orchestra in true stereo" are sketchy. But the separation between vocalists, brass, and saxes sounds far more realistic than anything that could be achieved with modern electronic trickery.

The same goes for another stereo recreation, which was buried deep among the bonus options of a special edition boxed set of "Wizard of Oz" Laserdiscs released in 1990. Oz was made in 1939 and one of the musical numbers, Ray Bolger's "If I Only Had a Brain," had been recorded on several separate optical tracks from different microphones spaced around the sound stage. Brain was also one of the few songs that was pre-recorded with simple accompaniment and the full orchestra dubbed on later. This gave the re-issue engineers the chance to build a recording of the complete song and dance routine in stereo.

This poses the intriguing question: How much more "true stereo" from the pre-RIAA days is sitting on three track recordings in Hollywood's vaults? Now that Hollywood is desperately looking for any new way to re-package old movies with new DVD and Blu-ray "extras," there is always the hope of new old stereo discoveries. *ax*



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- ATC
- AUDAX
- ETON
- FOSTEX
- LPG
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