

# MICS

## New mics at APRS '89

It isn't digital, it can't be automated and it doesn't have a MIDI output, yet the microphone, smallest element in the recording chain, is generating as much interest as ever.

APRS '89 showed how things are changing, with old ideas being enhanced and new ones developed. The basics of moving coil, condenser and electret capsule design is moving forward gently. The way the capsule is used within the microphone, the way capsules are combined for directivity or stereo is being re-thought more rapidly.

We have seen the development of the Pressure Zone (boundary) Microphone, originally from Crown, producing an hemispherical pick up pattern. With most manufacturers now producing boundary mics using the same theory, the original is being joined by directional boundary and handheld PZM microphones. Shuttlesound was show-

ing Crown's gated, phase coherent PCC 160, a cardioid boundary mic and the CM100 handheld omnidirectional working on the application of the single boundary mic Crown has also developed a new technique to combine two together as a single point stereo device. Crown's SASS design has variations using PZM or B&K omnis placed within a lightweight foam based structure. This combination is stated to give all the mono compatibility benefits of MS with the stereo imagery of a spaced pair.

AMS has also been developing new ways of producing coherent stereo imagery from a single point microphone.

The Soundfield technology has produced an entirely new microphone, the ST250. Although it uses four capsules in a Soundfield array, the ST250 is purely a stereo microphone, and not as it was stated "a cut-down Soundfield".

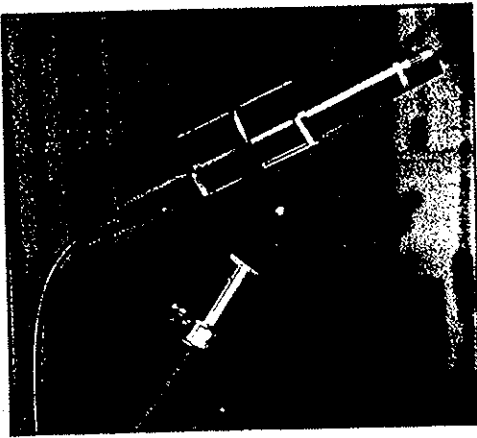
The new mic, which has generated a lot of interest in the broadcast market, has a simple control box that can switch the microphone to perform as an MS or XY format system. Further controls can adjust the apparent angle and polar pattern of the capsules, and can switch the mic for end fire or vertical use. The mic can also be electronically 'Inverted', roversing left-right signals when the microphone is turned upside-down.

The other microphone technique that has come into vogue, with the interest in stereo TV production, is MS. The Mid/Side microphone technique has been well established in theory and practice, both here and abroad. Several manufacturers were showing either new or improved MS microphones or MS control boxes: AKG's C34 and the Neumann 191 which like the AMS can work in either XY or MS formats, are improvements upon their predecessors. On the dedicated MS front there was the Fostex W22RP on the Harman Systems stand, and several electronic/mechanical devices to combine a pair of a matched omni and cardioids.

Sennheiser is using this technique with its MKH range. The MKH30 bi-directional can be combined with the MKH40 cardioid or its new MKH50 hyper-cardioid for MS, according to Hayden Labs, the UK distributor. Although not displayed at the show, distributor SSE announced that Schoeps has released a new twin mic/line amp for its range of microphones providing powering, high-pass filtering and MS matrixing.

### APRS Show mic spotlight

- German mic survey
- Short guide to German microphones
- By Tim Frost



**B&K 4012 cardioid**

The requirements of TV and video has reinforced the need for gun mics, elegant mics, radio mics and miniature mics. If there is vision involved then the microphone has to be good to look at or invisible.

Gun mics have been evolving over the years. Apart from general capsule and electronics improvement, the main areas of change are weight and side lobe performance. No-one has claimed to produce the perfect lobe free gun mic, but the KM191 from Neumann, Sennheiser MKH 70 and Beyer MCE86 all take advantage of hard research and production work to reduce the off-axis problems and bring the weight down.

Apart from on-body use, miniature and radio mics are also being targetted at the ENG market. Small cardioids like AKG's 747 are being bought for on-camera work and on Shuttlesound's stand there was a Samson miniature camera mount receiver which will work in conjunction with a new smaller radio mic transmitter pack.

Radio microphone packages were very much in evidence. AKG was displaying a new diversity system made in Italy with a price tag around the £500 mark.

At the other end of the scale, Beyer was pleased with the interest in its diversity system at nearly four times that price. Sony, with increased emphasis on its microphone range also discussed a new diversity mic for location/ENG work, although this may be restricted to the French market because of licensing and channel restrictions. Sennheiser, who has seen increasing growth in its radio mic business had the new radio mic mixer on the Hayden stand. This mixer can receive directly from radio mics and then re-transmit, in stereo, to a remote recorder or camera - full location recording with no wires.

With digital firmly established, studios are demanding more dynamic range, lower noise floors and flatter responses from the next generation of microphones. The first to make its name specifically on these points was Bruel & Kjaer, who released its first cardioid microphone, the 4011, earlier this year. That has been followed up at the show with the 4012, which uses a higher voltage power supply to allow it to reproduce a 168 dB dynamic range. On the Bauch stand, Neumann's new KM140 is moving in the same direction with a 20 dB improvement in dynamic range over the KM84, which it will eventually replace.

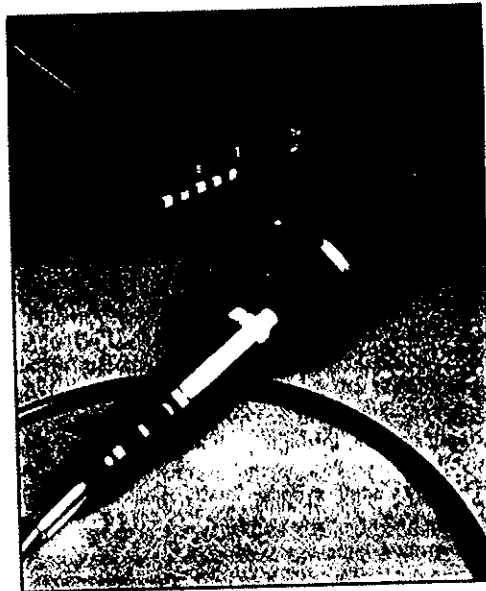
Stirling Audio is also becoming more aggressive in promoting the Sanken range, which includes the

CU44x double condenser, designed specifically for digital recording. Of course, flagship models from AKG, Beyer, Sennheiser and Sony are also providing improved dynamic performance.

From the rarefied atmosphere of recording and broadcast to one of the biggest markets for microphones - the musician and live performances.

Ever improving aspects such as reliability, handling noise and dynamics, are being applied to microphones designed for live work. The dynamic microphone is being enhanced with computer analysis and esoteric materials like titanium and neodymium.

Again Crown has looked at the operational theory and developed a new technique to produce a noise cancelling effect in a high quality music mic. Crown's 310 uses a combination of cardioid and difference signals, which goes some way to explaining why it is called a Differoid. Milab also introduced a new dynamic microphone, the D37, which is more rugged than the condenser C98B and C25, but maintains Milab's traditional sound quality.



**AMS ST250 stereo mic**

Beyer's Tour Group range, identified by their black baskets are built even more heavily for on-the-road reliability. Howland West introduced the Shure Beta range of 'Hot' magnet microphones and reintroduced two old favourites, the 75SH and the Green Bullet, both back by popular demand, and both with more modern capsules. Neodymium also features in the EV Pro-Line range and the new Peavey PVM380N. This microphone has been joined with two even newer Peavey mics in the Audio Media Research range. The ERO10 and ERC12 are both electret condensers aimed at the lower cost studio market. John Hornby Skewes, distributors of amongst many products the Audio Technica microphone range, discussed the Pro 4 and ATM41 which are doing good business with the music dealers, at reduced costs.

From stereo to stage, the microphones shown for the first time at this year's APRS are evolutionary animals. This evolution is being examined closely as improvements in the rest of the recording and reproduction chain can distinguish the smallest differences between the best of them. ●