Easter Holidays have taken on a new perspective in the last two years for myself and colleague Mick Wild. They have been spent shooting a popular series for CBBC Scotland called *Rule the School*. The basic premise is that five kids aged between 11 and 15, all with a particular talent, ‘teach’ ten adults their respective skills. The twist is that all the adults are real teachers, and the action takes place in Morrison’s Academy, Crieff, Perthshire over two weeks in April.

Since we need the full run of the school, including dormitories, we have to shoot the whole series in just 11 days over the holiday! The days are structured as a real school day with assembly, staff meetings for the kids, punishments for naughty adults, and classes ranging from formal classroom settings to sports outside, dance, rap, arts and crafts. Plus, of course, playtime – for the adults…

**Mobile Acquisition**

Most situations are covered with two Digibeta Cameras shooting handheld and totally cable-free. As the activities are all unscripted (although with a general structure), we needed to find a mobile multitrack solution for the audio acquisition, but which also gave the offline editor some guide audio to cut with.

Last year (2002) we recorded eight Audio 2020 UHF radiomics to a pair of DEVA recorders, largely in anticipation of having to be very mobile. The post-production playback and transfer was handled by a Fostex DV40 machine. However, coming to the second series this year we knew that we didn’t actually need to be battery operated and so could explore various other avenues. BBC Scotland’s Dubbing operation is mainly based round Akai DD1500 and DD8 machines, and after making sure that we would be dubbing *Rule the School* in an Akai area I spoke to dubbing mixer Bronek Korda. We decided that the ideal situation would be to record directly on to an Akai DD8 as this obviously provided the maximum flexibility for dubbing. Bronek even offered to supply a machine for the duration of the shoot, so in consultation with our production and editing colleagues, we then committed ourselves to only record multitrack sound where a 13 amp mains socket was available in the school grounds. This, in turn, opened up other changes to the previous year’s set-up.

**Rule the School 2003**

Instead of using the Audio 2020’s we went down the path of the Sennheiser 3000 series, with no reflection I hasten to add on the 2020’s! Co-incidentally BBC Scotland had just purchased four channels of UHF and we hired four more from Warehouse Sound Services. The EM 3032-U receivers all fitted into one (heavy) flightcase and we used the SK 3063-U bodypack transmitters. The BBC-owned units have Sanken COS 11 microphones while the hired systems came with Sennheiser MKE2s – and some interesting differences were experienced, which I will return to later. The Sennheiser AB 1036-TV head-amps were fed from ground plane antennae with each feed being actively split by a 1U amplifier in the main rack. This unit also provided the necessary 12V DC power supply to the head-amps.

*David Quinn is a Sound Supervisor with BBC Scotland. The views expressed are the author’s and not necessarily those of his employer.*
We were able to use the DEVAs own built in mixers last year, but obviously couldn’t this year, so we used a Soundcraft Spirit FX16. This was chosen mainly because of its robustness, lightness and the inclusion of a direct output from each channel (switchable pre or post-fader). The plan was to produce a scratch mix for monitoring purposes, and send each radio mic to a separate track on the DD8. The scratch mix was fed to a pair of VHF Micron transmitters, with the receivers mounted on each of the two Digibeta cameras feeding track 2. The on-camera mic was fed to track 1 as an additional sync source, as well as to catch any ambient sound. The scratch mix also fed a cassette recorder for transcription purposes. I often wonder what transcribers make of some of the noises they must have to interpret and place on paper, but there lies another story...

As there was a requirement for 360 degree shooting we were inevitably sited outside the room, and so the scratch mix also fed six sets of headphones so that production could hear what was going on. Talkback to the cameraman was another requirement and we solved this by rigging a dynamic talkback mic through an SQN Series 4 feeding a Raycom RTB3211 base station radiating on one of the BBC licensed UHF frequencies (455.26MHz). The cameramen listened on small broadband receivers with earpieces, and once levels had been set up this seemed to work reasonably well. The vision output from the cameras was carried by a Teletest 2.4GHz sender system which has four channels available. This system worked very well when it had line of sight, but understandably was a wee bit ‘flakey’ through two foot granite walls! The received pictures connected to 10-inch monitors on trolleys.

All of the sound gear, bar the headphone amps and the VHF micron transmitters, was operated on a trusty Ursta Cart. I say operated, because when you have three flights of stairs to climb, the weight of the radio mics made it about an eight-man lift, so we split the load into two halves, with the radio mics and the trolley travelling separately. In addition to this we had a medium sized flight case with all the radio mic transmitters, antennae, head-amps, cable feeder, cuddly toy, facial sauna, bag of sweets...ooops!

Single Camera Crew
In addition to this multitrack crew, we also had a ‘standard’ single camera unit with recordist using familiar location sound equipment such as an SQN mixer, MKH416 and a couple of Audio 2020’s. We had initially to swap radio mic frequencies around before finding a channel which the single camera unit could use all the time without affecting any of the main rack. This radio mic was used for the presenter, Jake Humphries, and the single camera crew looked after presenter links, vox pops with adults and kids, and narrative interviews and such.

However, we also had a requirement to use Jake in the main set up, and tried using his 2020 into one of our Sennheiser receivers. Not surprisingly, this sounded quite ‘muffled’ and odd, presumably because of the different companding systems used in the different transmitters.

There were also a couple of production-operated DV cameras, shooting candid and less formal arranged activities during the evenings in the dorms.

Back to the Classroom
Each classroom situation was dealt with slightly differently, but there were two broad categories, one where we had enough mics and tracks to cover all the participants, and another where we didn’t! When this was the case – such as in Assembly or the larger classes where all ten adults took part – we assigned mics to the people most likely to take an active part. Sometimes we had advance warning that a particular individual was to be singled out for some purpose, and obviously we then made sure they were miked up. We also tried to scatter the mics through the group, so that even if someone who spoke wasn’t wearing a mic we had a fighting chance of getting them from an adjacent contributor.
In the structure of the programme, although we may record a class for up to an hour we only really needed a couple of minutes, so with the tireless efforts of our post-production colleagues, we hope they manage to find those champagne moments! The activities all had their own challenges. The more physical, like basketball and dance, brought the not unexpected rustling and bumping. Basketball was also outside so the often very fresh wind annoyed on occasion also.

The differences between the Sanken and the Sennheiser mics were minimal when it came to quality, although they were quite different! I would hesitate to say one was better, though – how’s that for fence sitting? In terms of mounting the mics, we found the longer Sankens to be a bit of a nuisance with kids clothing. Lightweight loose t-shirts aren’t the easiest to mount mics on, with the mic tending to ‘fold’ in to the cloth and rustle a bit. We weren’t trying to hide mics particularly, we simply wanted to put them on the best places that we could.

One of the kid ‘teachers’ wore a headband, and this was successfully used for mounting the mic. The unenviable task of this ‘teacher’ was to show some ‘un-hip’ adults how to rap, culminating with a home made rap and a performance of an Eminem song. To cover this for the lessons and practice sessions we rigged a Shure SM58 via an amp into a couple of Electrovoice loudspeakers in the classroom. Then for the final ‘exam’ performance we provided five SM58s for the adults, once again amplified through the small PA, to great effect. We also used a Calrec compressor to try to catch at least some of the wilder levels.

One big surprise for us, was the ‘texting’ class. All ten adults were involved so we had a total of eight radiomics in a room with eleven people, all texting each other frantically on their mobile phones. We had warned production about the possible interference that we’ve all heard from mobiles, particularly on unbalanced mic cables such as those used for personal mics. However, not one single ‘burble’ was heard throughout the shoot! A testament to the EMC rating of the Sennheiser transmitters, or just plain good luck? I’ll take either!

**It’s A Wrap**

Last year’s series was very successful, with a good share for CBBC, and we hope this year’s series does the same. It will be interesting to speak to the editor, dubbing mixer and director after the post-production process is complete to see how well the eight radio mics coped with up to 15 people at once. This situation happened at the daily school assembly when all ten adults and five kids were involved. The same could be said for the final prize-giving and school concert. We have seriously considered using 16 channels next year, simply adding to the Sennheiser rack and using a second Akai DD8 recorder. This would give production the ultimate flexibility to select their best moments without any restriction from sound – but this approach would obviously also have cost and frequency allocation implications.

Overall a huge amount of rushes of many different types were generated. Just the main operation generated about 160, 40-minute Digibeta tapes and eleven 18GB Akai disks, so the task of logging everything is pretty formidable in itself. To ease the problem slightly we created a style of tape number which contained the date in the format ‘1104’ (for 11th April), with additional digits for the roll number and camera letter. This date element was also used as the Akai project for that whole day’s shooting so that all the editor or dubbing mixer needed, to find the audio for a particular sequence, was the tape number containing that date or even just the knowledge that something was shot on a particular day. By inserting the disk with that project name on it, the Akai can quickly be located to the appropriate timecode and whoosh, the audio is there to match the pictures.

There’s probably another article purely about the challenge of the post-production, but that lies beyond my expertise, so maybe another time!

**Thanks**

Many thanks to my colleagues, Mick Wild, Hugh Creaney and Lucy Reid, and all the sparks, cameras and production people who risked life and hernias lumping the gear up and down three flights of stairs several times a day. It wouldn’t have been any fun at all without everyone working together as they did!