

PANASONIC GETS HANDS ON WITH 3D SHOOTING



Throughout September Panasonic held workshops in major cities across eastern Australia supporting the launch of their twin lens AG-3DA1E 3D camcorder.

The content of the six-hour workshops was part theoretical and part practical. The theory was split into three sections, an introduction, 3D fundamentals and an introduction to the AG-3DA1E before the group went into the practical hands-on session with the camera.

INDUSTRY CROSS-SECTION

American cinematographer Barry Braverman presented the workshops. He has been a filmmaker for 30 years, specialising in digital cinematography and television. His projects include long-form programs and 3D specialty productions for Walt

Disney, National Geographic, HBO, Discovery and The History Channel. He also writes for camera related magazines and is an author.

A cross-section of the video industry attended, including ACS members, people from television, sports, drama, documentary, education, wedding video and others. Following the workshops' success and demand, Panasonic is planning to offer further sessions in WA and SA later in October with a different presenter but with similar content for professional applications. Dates and venues will be announced.

The introduction explained that cinematographers have always shot with the 3D effect in mind, but that the tools and techniques for achieving it have changed. The differences and similarities between mono and stereo cinematography were explored and Barry introduced the problems and challenges of 3D by letting everyone view some footage.

DEPTH CUES

The cues photographers have traditionally used to suggest depth and give viewers a sense of perspective were explained and contrasted with cues stereographers use to help an audience see 3D in 2D Space. Occlusions are strong depth cues. In monoscopy, a viewer notices that some parts of the background object are hidden. In stereoscopy, a thin strip of the background object is seen by only one eye as a major cue to help the brain to reconstruct a scene. Barry also talked about perspective and different kinds of motion parallax, and relative speed and size.

Also, if a person sees more or less of an object and can

locate it in the distance or has a reference shape to compare it to, this should give enough information to infer the missing details and assess its actual size and distance. When shooting 3D, cinematographers adjust the camera's interocular distance, creating size effects on objects, landscapes and actors, and making them feel giant or small.

As most stereo depth cues are horizontal parallaxes, occlusions revelations, some shape changes and convergence cues, the two critical settings and adjustments students learn how to make are interocular distance and convergence. They also learn how to assess how much parallax is appropriate, the impact of interocular distance on perception and how the eyes converge on different objects

STEREOSCOPIC WINDOW

Barry explained that the eventual display screen size will have a bearing on the results of the shoot and how to take it into account. The 3D effects increases with screen size and distance from the audience will have an effect on parallax and convergence. People are not aware of the focus plane their eyes are accommodating to, but this can be useful because in a 3D movie, objects are seen floating within the space, but are shown and looked at on the screen. That is, while the audience is converging somewhere in the room, they are focusing on the screen. Most viewers can achieve this focus/convergence de-synchronization naturally, which is what makes 3D cinema possible.

Barry talked about the 'stereoscopic window', contrasting it to a 2D picture looking at flat objects defined by the edges of the screen. A 3D picture on the other hand looks at objects floating in a space defined by the relative position of the edges of the screen and your eyes. With this idea in mind, students learned about shooting wide scenes and landscapes, close-ups. He also described polarization and reflections, image artefacts based on the viewer's and the light source's position, which do not appear symmetrically on your left and right footage. Practical advice for all camera operators was given about lighting for 3D, focus and depth of field, and the optimal sensor size of 3D cameras

CAMERAS, RIGS AND THE AG-3DA1E

Barry introduced 3D tools of the trade, and how to consider cameras and rig types to produce pairs of identical images. Two identical, interchangeable cameras are required because they must be optically matched in focal length and focus point. For comfortable 3D, the two cameras also have to be in a controlled relative position with one camera as the reference and the second as a lateral translation of the first one along the image plane width, with a possible rotation on the vertical axis.

Normally, if the cameras are small, rigs hold the two cameras horizontally side-by-side to achieve the correct position and distance to create binocular parallax. Large cameras may be installed vertically using half-mirrors.

A major focus of the workshop was to introduce the new Panasonic 3DA1 camcorder and its main controls and interface. The implications of sensor size and type were discussed again in the context of this camera, while Barry demonstrated some background philosophy, setup and operation, and shooting SDI video vs HDMI. He showed viewfinder options and made recommendations, and showed



what it is like to work with fixed interaxial distance and control convergence and focus. The camera's menu array and set-up, frame rate and resolution options were presented, with tips for using recording media. He explained how to understand and monitor the 3DA1 Comfort Zone readout.

HANDS-ON LABS

To get stuck into the hands-on labs, students divided into teams and learned how to create 3D storyboards allowing for a depth budget, the overall 3D of a movie with respect for depth continuity among shots. The students calculated and assessed the appropriate inter-ocular distance and convergence, and all had a chance to shoot their own 3D assignments in studio set-ups and also outdoors, as pictured here. Then the students regrouped and viewed and critiqued the productions. Although Barry pointed out that 3D cannot be fixed in post, he presented some editing fundamentals using Final Cut Pro, and reviewed display and distribution options

Overall, Panasonic received the most feedback on this hands-on section. A number of people commented on how instructive it was to actually get out and shoot some 3D to experience what works well and what does not, and the responses were positive. An attendee in NSW wrote to them to say it was a very informative workshop and that he's looking forward to shooting some 3D on his own. www.panasonic-broadcast.com

ABOVE: The students calculated and assessed the appropriate inter-ocular distance and convergence to use on a shoot.

BELOW: Barry and the students viewed and critiqued various 3D productions, including their own assignments.

