

## Galil and MSM Help Filmmakers Move into New Golden Age of 3D Movies

3D movies have come a long way since the original “golden age” in the Fifties with such notable films as *House of Wax* and *Robot Monster*. Today, a new golden age of 3D movies is unfolding with films such as *Space Station 3D*, *The Polar Express*, James Cameron’s *Ghost of the Abyss* and *U2 3D* enjoying box office success playing on IMAX’s large format screens. Just recently, Dreamworks and The Walt Disney Company and its Pixar subsidiary announced that almost all of its future animated movies will be released in 3D.

Helping to revitalize 3D filmmaking is MSM Design (MSM), whose high-resolution stereoscopic camera technology was instrumental in producing *Space Station 3D*. Their IMAX3D and ICBC3D 30perforation/65mm cameras, which contained a customized Galil motion controller for controlling film speed and tension, were onboard the space shuttle to chronicle the building of the international space station.

In late 2007, National Geographic released *Sea Monsters*, a new 3D movie about the Late Cretaceous world of plesiosaurs and mosasaurs. Directed by Sean Phillips, it was filmed using MSM’s new Gemini 3D camera, one of the smallest, highest resolution stereoscopic motion picture cameras on the market.

“To film in 3D, you’re essentially filming two movies at the same time, which means the two rolls of film must be tightly coordinated,” said Martin Mueller, who co-founded MSM with his wife, Barbara in 1979. “You can do this with two separate motion picture cameras, but it’s difficult to align the cameras and it’s tedious to change film. The Gemini operates with two film rolls integrated in a single compact camera that is similar in size and weight to a traditional movie camera.”

Martin added, “The small size lets you mount it on any normal rig, just like you would with a regular camera. The big difference is that you get 3D filming with high image quality.”

To handle the critical and precise coordinated motion requirements of the Gemini 3D camera, Martin specified Galil’s DMC-2183 8-axis Ethernet controller because of its broad capabilities in a small package, its straightforward programming and for the tech support that Galil provided.

Martin programmed two pairs of axes (1–2, 3–4) to control each of the camera’s two film magazines, with each magazine incorporating one motor for feeding the film to



*3D movie camera uses Galil controller to manage film speed and tension.*



the camera and another for reeling it in. Galil’s AMP-20540 4-axis 500W drive attaches directly to the controller to drive these four magazine motors while saving space and wiring.

One each of the remaining 5–8 axes, along with a Galil AMP-20440 200W drive attachment, is used for driving four separate motors, each specifically assigned to controlling the camera’s shutters, focus, iris and convergence of lenses.

“I liked how Galil’s DMC-2183 controller and drive combination enabled us to handle multiple modes of motion,” said Martin. “For

example, we use the electronic gearing mode to help the camera maintain perfect film tension, and the position tracking mode for automated and remote focus control. The Jog mode ensures very precise control of film speed.”

The Galil DMC-2183 also includes an array component that stores the parameters for all lenses, allowing for quick lens changes within seconds; and an automatic data recording capability for calibrating lenses for optimum focus.

MSM’s software interface uses Galil message commands to display variables on the fly on a menu driven LCD located on the camera and at the handheld remote control. This gives the operator complete feedback and set-up information. The I/O provided with the DMC-2183 was used for accommodating direct connection to remote inputs.

The advent of 3D technology like the Gemini camera signals a new age of 3D movies. “The future of theatrical motion pictures is in 3D,” said Phillips. “IMAX, Real D, and Dolby are quickly adding digital and film based 3D screens world wide, and audiences agree that 3D represents an experience unique to the theatrical market place.” ■

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