

BOLT HIGH-SPEED CINEBOT RANGE USE CASE STUDY

INTERVIEW WITH MOTION CONTROL EXPERT JULIAN HERMANNSEN

IN THIS VISUALLY STUNNING PIECE, THE BOLT™, THE BOLT X, AND BOLT JR+ EXECUTE A COMPLEX SERIES OF PRECISELY TIMED MOVES THAT DEMONSTRATE EACH RIG'S KEY FEATURES AND GIVE A VISUAL COMPARISON OF THE THREE SYSTEMS SIDE-BY-SIDE.

WITH SUCH A COMPLEX BRIEF TO SHOW IN A 90 SECOND VIDEO THE SPEED, PRECISION AND RANGE OF MOVEMENTS THAT EACH MEMBER OF THE BOLT CINEBOT™ FAMILY IS CAPABLE OF, WHILE CONCISELY COMMUNICATING THE TECHNICAL SPECS OF EACH ROBOT WAS NOT A SIMPLE ONE. WITH THIS IN MIND, WE TURNED TO ONE OF EUROPE'S LEADING MOTION CONTROL AND VFX EXPERTS, JULIAN HERMANNSEN. WE CHALLENGED JULIAN, AND HIS HAMBURG BASED VISUAL EFFECTS STUDIO VISUAL DISTRACTIONS, TO DEVELOP AND DELIVER A SHORT FILM THAT DEMONSTRATED THE EFFORTLESS POWER AND TOTAL CONTROL THAT EVERY BOLT POSSESSES. WE WERE NOT DISAPPOINTED.

THE INTERVIEW

Q 1 *THE BOLT CINEBOT IS THE FASTEST OF ITS KIND, WITH A TRACK SPEED OF UP TO 5 METRES PER SECOND AND CAMERA SPEEDS OF 11 METRES PER SECOND. WHY DOES THIS MATTER?*

When shooting at very high frame rates, you need to move the camera extremely fast to see the movement in the resulting footage. But for me, the most impressive, and useful, aspect of the BOLT is its acceleration. It allows you to get up to full speed quickly, which is the part of the shot that you want to use. With regard to the track, I think accelerating up to full speed within a short distance is crucial to be able to use those maximum speeds in your shot.

Q 2 *BOLT X HAS AN ARM REACH OF 3.2 METRES AND A MAXIMUM HEIGHT OF 4.3 METRES. FROM A CREATIVE PERSPECTIVE, WHAT ARE THE ADVANTAGES OF WORKING WITH SUCH A LARGE OPERATING ENVELOPE?*

I've seen an increasing demand for making high-speed camera moves for things other than tabletop SFX in the last few years. When using the BOLT with actors, I've often felt I was at the limits of its range and still wanted to go further. The range of the BOLT X is perfect for this purpose. It gives you the speed of a BOLT but with an operating envelope that is more comparable to the MILO.

Q 3 *BOLT X HAS A CAMERA MOVEMENT SPEED OF AN ASTONISHING 14 METRES PER SECOND, WHAT OPPORTUNITIES DOES THIS SPEED GIVE YOU?*

Being able to achieve these high-speed movements in such a large operating envelope allows for entirely new camera moves which weren't possible before, neither manually nor with any of the other existing systems. We are yet to see the full potential of how this will be put to use, but I can see the potential for it on shoots where in the past we have often had to compromise on either reach or speed to get the shots done.



Q4 THE BOLT JR+ IS MRMC'S COMPACT, LIGHTWEIGHT, HIGH-SPEED CAMERA ROBOT. WHY IS BIGGER NOT ALWAYS BETTER?

When you look at a typical SFX setup, the camera, SFX, and lighting etc. are all very close to the subject and you need to leave some space for the other departments. When you're using multiple robots on a setup (for example as model movers) the small footprint of the BOLT Jr+ is beneficial. Also, when access to a location is difficult, the BOLT Jr+ small size can be very useful.

Q5 THE BOLT RANGE OF CINEBOT RIGS CAN ALL BE SET UP AND ARE READY SHOOT IN LESS THAN AN HOUR OF ARRIVING ON LOCATION. HOW IMPORTANT IS THIS SETUP SPEED TO A PRODUCTION?

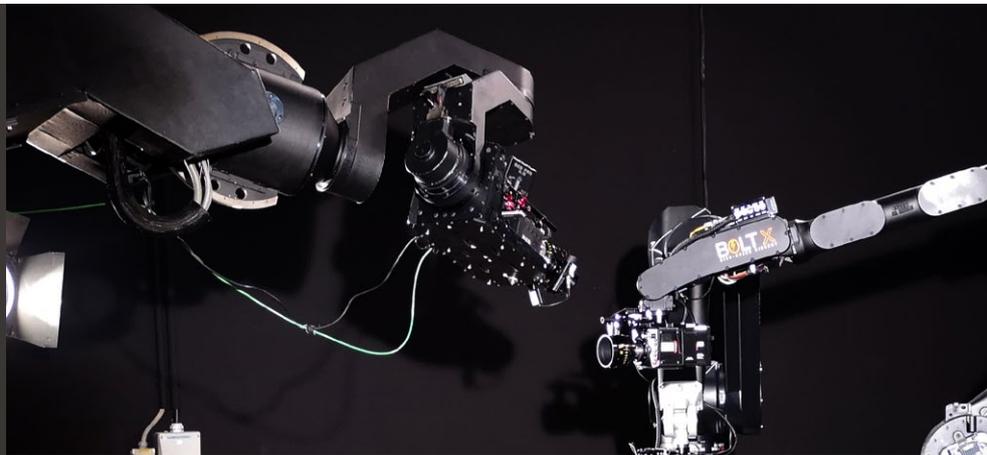
Obviously, you want to get the most out of the time on set, so setup time is an essential factor of what you can achieve. We often take advantage of using motion control by programming the moves on a prep day to be ready for an efficient shoot day. But we also have shoots where we show up on set in the morning, set up the rig, do a few motion control shots and then take it down again in the afternoon. With longer setup time, this would not be an option at all.

Q6 *MILO CONTINUES TO BE ONE OF OUR MOST IN DEMAND RIGS, WITH A CREDIT LIST OF OVER 200 FEATURE FILMS. WHAT IS IT ABOUT THE MILO THAT MAKES IT SO POPULAR?*

If you want the precision and stability combined with the large operating range, there is nothing comparable. From an operator's perspective, the MILO makes it easy for me to be very fast and flexible on set. Most of the time we are brought in for shots where motion control is absolutely required, for example multi-pass, but once we're there and set up we often end up shooting whatever we can from the MILO, and that's where this rig shines. You can easily do any kind of moves within the range without changing tracks, camera mount, etc. You can see that the whole Milo system was designed for camera work from the ground up.

"YOU CAN SEE THAT THE WHOLE MILO SYSTEM WAS DESIGNED FOR CAMERA WORK FROM THE GROUND UP."

Julian Hermanssen
Motion Control Operator



Q7 *OVERALL, WHAT ARE THE QUALITIES THAT SET MRMC'S MOTION CONTROL ROBOTS APART?*

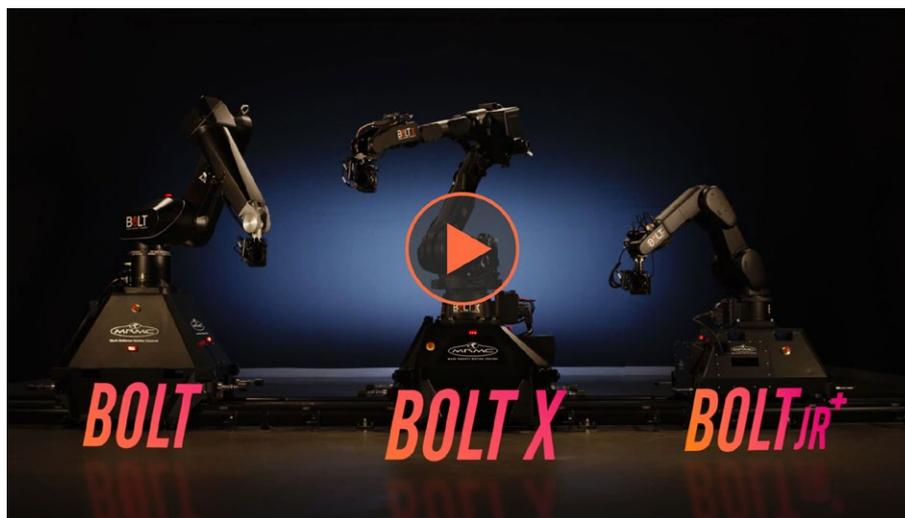
I worked with quite a few different motion control systems and software, and you can see the long-term experience and history with film in the MRMC robots and software. I always know several different ways of how I can approach or solve something and there are so many features which you might not use every day on a high-speed shoot, but when you run into a job where you're doing pure camera work you have all the options. For example: being able to control the motors of a 35 mm film camera to ramp its speed in sync to the movement while your external iris and internal shutter motors compensate the exposure, is something which probably no one would think of as a priority feature. I wouldn't have been able to do a lot of my jobs if it wasn't for this kind of functionality. It is this attention to detail that sets MRMC apart.

Q 8 *WHAT HAS BEEN YOUR FAVOURITE, OR MOST CHALLENGING, MOTION CONTROL PROJECT TO WORK ON?*

That's hard to locate on a single project. I like the variety in my work. Coming from a VFX background, I like doing things which bend your perspective of the real world like scaling shots, mirrored or rotated shots, camera ramping or moving projection mapping. In that area, the most challenging things were probably stereoscopic scaling where I had to also scale the eye distance, and definitely also working with in-camera ramping. But what I love doing most is actual camera moves. Creating long continuous moves through several sets or choreographed with actors – I once did an 8.5-minute continuous move with actors – were challenges I enjoyed a lot. Most challenging and rewarding is when motion control is combined with other techniques to create something entirely new. It's what continues to keep my fascination - continuing to figure out something new and build on the experiences from other jobs. So, the most challenging project is hopefully one of the next ones to come.

Q 9 *FINALLY, WHICH IS YOUR FAVOURITE MPMC CINEBOT RIG, AND WHY?*

Of all the MPMC systems I'd definitely say MILO. Of the high-speed rigs, it would be the BOLT. I do a lot of tabletop SFX with it and I'm still amazed at the accelerations the BOLT can achieve, but with the MILO, I like the flexibility it gives me. I have two more axes than needed to reach any position so I can use these to optimise for speed, reach or to get out of the way of lighting. Being able to keep the camera movement the same but achieving it by different rig movements is a great advantage, so with the MILO it's not only about if you can make a move but also how you do it.

**WATCH VIDEO**