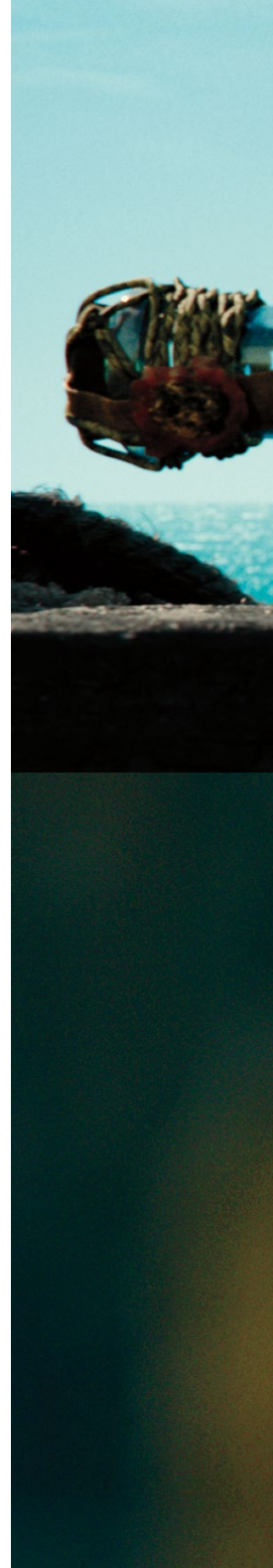


NO QUARTER

PAUL CAMERON, ASC,
WALKS A LONG AND
CHALLENGING PRODUCTION
PLANK FOR THE FIFTH
ENTRY IN DISNEY'S
POPULAR RIDE-TURNED-
FILM FRANCHISE, *PIRATES
OF THE CARIBBEAN*.

BY KEVIN H. MARTIN
UNIT STILLS BY PETER MOUNTAIN/
FRAMEGRABS COURTESY OF WALT
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In *Dead Men Tell No Tales*, a long-dead opponent named Salazar (Javier Bardem) resurfaces, emerging from the Devil's Triangle to menace Captain Jack Sparrow (Johnny Depp) and leaving a furrow of dead pirates in his wake. While the walking dead and all manner of nasty treachery on the high seas have been the order of the day throughout the *Pirates of the Caribbean* film series, this fifth outing infuses the franchise with new creative blood, including co-directors Joachim Rønning and Espen Sandberg, and cinematographer Paul Cameron, ASC.



“We were in the right place at the right time,” recalls Rønning of taking the reins from director Gore Verbinski, who helmed

all four previous *Pirates* films, and, along with cinematographer Dariusz Wolski, ASC, left an indelible mark. Rønning says *Kon-Tiki*'s Oscar nomination put the pair on the map, and when he heard about the script he “chased” after it.

“The *Pirates* franchise reminds me of the Zemeckis/Spielberg adventures that inspired me to become a filmmaker when I was a kid,” he says. “We had good cinematic ideas and kept bringing in script notes until we finally got that call from Jerry Bruckheimer, congratulating us.”

Of their co-director roles, Rønning acknowledges, “Espen and I have slightly different sensibilities. On this one, it was largely my show owing to the scope and technicalities.”

Rønning holds high praise for the franchise's visuals, retaining *On Stranger Tides*' VFX supervisor Gary Brozenich as well as hiring production designer Nigel Phelps and Cameron, who shot Bruckheimer's *Gone in Sixty Seconds* remake and HBO's smash hit series *Westworld* [see ICG October 2016]. “I was glad Paul accepted my ideas for changing things up a bit,” Rønning relates. “While this is a period piece, it needed a modern feel. That was tricky, but I think we have a look with an edge that will appeal to younger audiences.”

Cameron praises Wolski and Verbinski for

setting an extremely high standard. “I wanted to live up to that legacy,” the DP admits. “But, since this also had to stand on its own, we didn't try to emulate the previous films. One difference, for example, is how we handled unique moments like flashbacks. There's a scene where Javier has captured Geoffrey Rush and tells him of his history with a young Jack Sparrow, explaining how he and his crew were tricked and killed due to Jack. We did a skip-bleach look, which contrasted nicely with the beautiful sunset background of the ‘present,’ when he is telling the story. [Company3 Colorist] Stefan Sonnenfeld and the directors pushed the look of the flashback even further in the DI to differentiate it.”

One prime goal of Cameron's was to maintain a tight control over the time of day for each scene. “When you read a script, it usually just indicates ‘day’ or ‘night,’ but nothing more specific,” he remarks. “I pushed to narrow those times down in order to make things more dramatically effective at a particular hour, be it sunrise or sunset.

“I executed a lot of lighting ideas that arose during the conceptual phase,” he adds, “and this required a leap of faith, because many scenes require VFX enhancement and can be subject to later changes by Editorial. If a scene gets moved, your warm sunset might be taking place closer to midday. But working closely with Gary [Brozenich] and the directors, we made sure everybody was cognizant of what I was trying to accomplish, and scenes that had to pass through many departments and hands still got executed in acceptable ways.”



Initial plans included shooting 35-mm anamorphic.

But after a delay of several months, changes were implemented involving locations and methodologies. “We abandoned Puerto Rico as a location in favor of Australia,” Cameron recounts, “and then, slowly but surely, the directors worked us around to Alexa, and from anamorphic to spherical 2.40.”

Given the scope of the project, single-camera was never an option. Fortunately, Cameron says, he learned a lot about multiple camera shoots from director Tony Scott. “I share some philosophy with [Scott] in terms of being bold with camera angles, even if it means compromising the light, because you get some unexpected excitement from the extra coverage, moments that can be more engaging than those shot with tighter eyelines. On *Pirates*, we ran three cameras for most scenes, going as high as eight at times for big action scenes. Even stunt guys find it physically difficult to repeat these huge routines for ten takes, so anything we do with additional cameras to minimize the number of repetitions is a good thing.”

Before embarking to the Gold Coast for the 100-day shoot, AC Trevor Loomis first prepped the camera package at Panavision Woodland Hills. That included 11 ALEXA XT’s – five carried on first unit, the others kept at Panavision Queensland for second unit and additional camera days. Two of the five sets of Primo V lenses remained with first unit throughout the shoot, along with multiple zoom lenses in the 11:1 [SLZ11], 19-90 [PCZ] and 3:1 [SLZ3] ranges. Loomis describes the Australian crews as “very welcoming to the U.S. crew that did get to go, and very good at their jobs.”

Upon finding a projector that had been calibrated for dailies at Village Roadshow Studios, DIT Edward Viola brought his cart to the stage. “That allowed us to get the directors’ monitors and all the rest matching with that projected image,” Viola explains. “Every couple of weeks, I would roll my full DIT cart back into the dailies room to make sure nothing had drifted, so our dailies would always look the same as what we saw on set. I would call up a screen grab with a LUT and CDL, and post-production would go to their RAW data of the scene in Log-C, and we’d see if that screen matched my monitor. The grabs had Alexa info on them too, from shutter, white balance, ISO and frames per second.”

Viola found it useful to run DaVinci’s Resolve in Live mode for most of the shoot. “If we had to return to a scene a couple months later, there’d be an accurate record we could match to,” he continues. “I could do a live wipe on screen, going from the last time we shot to what we were getting right then. This was a pretty powerful tool, but necessary since we were going to be cutting between shots done on stage to exterior blue screen work and other takes shot out on the actual water, all of which had to match. Media manager Lukas Davidson backed everything up on master drives to separate stations using two 8-terabyte RAID’s. Then we’d hand the mags off to the post facility located right there on stage for copies and LTOs.”

Ironically, the film’s many shipboard exteriors were shot in landlocked settings, with the various seagoing vessels built as partial





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ships within a pair of exterior arenas surrounded by blue screen. “We used two very large parking lots and stacked shipping containers four and five high in a semicircle that ran about 600 linear feet,” Cameron recounts. “The larger of the two lots accommodated one ship set measuring nearly 600 feet in length, which was mounted on a gimbal. The smaller arena featured another ship set that was mounted more simply, on casters, which let us tug the ship clockwise or counterclockwise during the day to continue using the natural sunlight. Executive producer Joe Caracciolo invested in coming up with ways to turn the ships quickly, so we wound up not requiring that everybody disembark during the moves.”

Cameron says this approach gave him plenty of flexibility to match changing skies. “When clouds rolled in, I could use my four 120-foot Condors for swinging 12 ArriMax 18Ks into place on MaxiMovers, so nobody had to be in the buckets,” he notes. “At night, we’d fly a 100-foot Night Spine – a linear series of ten 10-by-10 softboxes above the ship. There were also multiple lifts carrying fire effects, moon fill and fans, plus other special-effects machinery.”

But the heavy reliance on blue screen necessitated by the arena approach revealed an aesthetic limitation. “You’re shooting foregrounds of a ship supposedly at sea, but without any background revealing the type of light hitting your characters,” Cameron offers. “That means the lighting you do has to be based on your past experience of shooting in actual daylight situations.

You figure in the middle of the day your ratio is going to be 3-1/2 to 1 or 4 to 1, while at dusk it’ll be more like 2-1/2 to 1, plus you’ll be changing color temps on your key and fill to suggest sunset. I provided VFX and Editorial with all my notes about the timelines and the specific looks I wanted, with graphs showing how this all works for the script. That way they don’t have to wonder, ‘Why is everything so blue?’ because they know this is right before the sun comes up.”

Predictably, challenges to VFX were many,

starting with Salazar’s ship, which has the ability to transform its shape. “The line between where practical builds end and we begin was established early,” observes VFX supervisor Brozenich. “The sets were beautifully crafted, and there’s a digital extension in nearly every shot. But that can be as small as a mast and sail addition to a full replacement of the front two thirds.” For Salazar and his crew, Brozenich says, “we mixed parts of actors with heavy digital prosthetics, fully digital characters, CG costumes in part and whole and VFX work on a large scale.”

VFX vendors handled different sequences, with MPC as primary, utilizing their London, Vancouver and Los Angeles offices to handle shots of Salazar and all of his ghost crew, CG ships and ship extensions, plus ocean environments.

“This [show] was a combination of CG water

and live-action water plates,” Brozenich continues. “The plates were shot with a three-camera rig of RED Epics on their side, shooting across each other and one centered. The rig was designed by the team at CineMoves and [hung] from a helicopter on a [Aero Film 3-axis gyro-stabilized head] Klaus Cam.” Some plate work was accomplished in Australian waters, but most took place in Key West, shot by veteran aerial cinematographer Hans Bjerno. The CG water was a combination of “performance” water that needed to be specifically directed and digital ocean backgrounds, with Brozenich wanting to “mix them throughout to blur the line between the two realities.”

Rønning, who has worked with MPC on commercials, notes that even in a fantastical world like *Pirates*, “I think you benefit from the camera going only into positions where you could have put a physical lens. And we also often used real elements to help the VFX along.”

Brozenich concurs on the use of practical elements. “We had very generous element shoots while in both production and post. Regardless of how good VFX get at recreating the physics and look of the natural world, use of real shot elements that match exactly the SFX vocabulary established in the rest of the photography, is, for me, essential,” he shares. “Not only for continuity, but also for speed of use and the visual complexities they add. It immediately lends that uncanny reality that we all just feel. Sometimes you can’t beat the real thing, or more often, the combination of both the real and the digitally created.”





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AND VFX WORK ON A
LARGE SCALE.”**

-VFX SUPERVISOR GARY BROZENICH



**ONE OF THE SHIPS
WAS ON CASTERS,
“WHICH LET US TUG THE
SHIP CLOCKWISE OR
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TO CONTINUE USING THE
NATURAL SUNLIGHT,”
CAMERON REVEALS.**

Another limitation to the arena approach

was not being able to capture what Cameron describes as “those nice big pirate movie views from a helicopter,” which couldn’t be flown in a contained semi-circular area. Cameron says he found a young Melbourne Drone company called XM2 instead. “I approached them early in preproduction, hoping they would be willing to upgrade their [X8+] system to carry an Alexa M open-gate camera,” he recalls. “My past experience was that smaller drone ships sometimes don’t have the stability, but this new one was robust. We got some very exciting shots that had the drone flying around the masts and sails and through the rigging; people were kind of mesmerized by what the camera could do: you think you’re looking at a crane shot, but we’d go up 300 feet instead of stopping at around 50 feet.”

Drone-captured vistas were augmented by cable work, with lines run to support the actors and rig. “The wirework for fight scenes was very extensive,” Cameron continues. “There is an elaborate swordfight between Sparrow and Salazar as they jump from ship to ship, going from one cannon to another, so the dynamics for that were extreme to the point of almost being undoable. We took apart the previs to break things down into achievable moves. It involved a poor man’s CableCam, using the Oculus remote head for our camera, plus Tommy Harper’s stunt rigging team to fly the actors. Rigging the camera on cables was often used for big shots at sea; we’d swoop down to the ship past Johnny Depp and end on Geoffrey Rush.”

Loomis says the cameras were in constant motion.

“We would start really wide on cranes and push into big close-ups,” he describes. “One shot in particular had a CableCam starting 300 feet away that pushed into a big close-up of Javier Bardem at five feet! Those kinds of shots happened every day, so focus was a challenge. We used Prestons when called for, and small HD on-board monitors.”

Cameron’s lighting for interiors reflected the idea that firelight was the primary source. “I believe being subtle is the key to using that kind of light,” the DP reflects, “because the flicker can draw the eye away from what the actors are doing and saying. How much does a fire really flicker, and how much of that do you actually notice? Gaffers Raffi Sanchez and Shaun Conway and I custom-built LED boxes that tied into DMX. We tested colors and locked those in with gels on the boxes, and that became the source for smaller [jail cell] interiors; then, for the bigger night ship exteriors, we repeated that color palette, but with larger Tungsten units.”

With so much action and stunt work, a second unit, led by DP Brad Shield, began lensing in Queensland shortly after Cameron’s main unit. Shield says their work consisted of finishing off action sequences and shooting pickups. “To have a good idea of the

continuity, we would work off previs, the rough cut or action-vis put together by the stunt team,” he recounts.

“One sequence involved a 50-foot Technocrane that was built on a cage and hung about 60 feet in the air. We see a large tower and countryside below, [as] a stunt performer swings on a rope. The camera pushes in with him, revealing the other side of the tower. [Key grip] Toby Copping and his best boy Paul Hamlyn put in a heap of time designing the rig. Second unit grip Greg Tidman and his team were briefed on the mechanics, and they nailed it on the first take!”

Cameron says the DI for *Dead Men Tell No Tales* was lengthy, but ultimately satisfying. “It’s really become the responsibility for the directors of photography on films of this size to keep everyone on the same page,” he declares. “Addressing all the accommodations and slight alterations took time, but being able to sit in with the directors and Gary and the colorist all the way through was nice because we got to see how everything came together.”

“*Kon-Tiki* was my first venture into digital,” concludes Rønning. “We shot on the open ocean for six weeks, then had four post houses doing 500 VFX shots, which was enormous for a Norwegian film. But for *Pirates*, we have more than 2000 VFX shots! On a project like this with so many resources at your disposal, you can keep improving things, and with the longer post, it gave us a chance to really make this the best film possible.” 

CREW LIST

Director of Photography
Paul Cameron, ASC

**Director of Photography
(Additional Photography)**
Bojan Bazelli, ASC

A-Camera Operator/Steadicam
Martin Schaer

A-Camera 1st AC
Trevor Loomis

B-Camera Operator/Steadicam
Chris Haarloff

B-Camera 1st AC
Joe Martinez

**Director of Photography
(2nd Unit)**
Brad Shield

DIT
Edward Viola

Still Photographer
Peter Mountain

Publicist
Michael Singer