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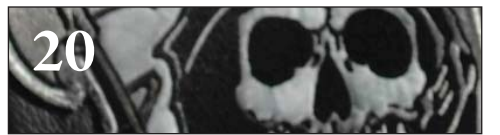


LAURIE K GILBERT SOC

Features

SOC Takes on SOA

by Jack Messitt SOC
Dave Frederick SOC and Steve Fracol SOC take on the new FX series with DP Paul Maibaum.



Cover



The riders in *Sons of Anarchy* by Timothy White, courtesy of FX Networks.

SOC to DGA

by Jack Messitt SOC
Camera operator Bill Gierhart SOC offers advice on a different way to re-rate and move up in the business.



Big Seas, Big Winds, Big Challenges

by Laurie K Gilbert SOC
Shooting Olympic boat races while weather, politics and logistics take their toll.



My Reel

by Joshua Harrison
Noted DPs offer their views and suggestions on creating an Operator's reel.



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“Now that I look back on it,
it was kind of miraculous...”

But you know the saying,
‘...the Lord Giveth and
the Lord Taketh away...’”

The Curious Case Of BENJAMIN BUTTON



Letter from the President

What Happens in Post

On a five-hour flight to Honolulu, I talked with friends and watched horribly projected movies from the onboard video system with bad colors and awkward framing caused by the projection itself and pan and scan transfers. The worst offender was chopped headroom on the cinematic releases during that flight. I cannot describe the way the projection and transfer butchered the photography. Awful comes to mind, but somehow that description falls short of adequate.

The Case of the Disappearing Headroom

This experience reignited the spark from a few weeks ago when I attended a screening of the timing print for a picture I'd recently operated. When the DP called and invited me to the lab screening, I was very excited. It was the culmination of many, many hours of work on everyone's part. And since I tend to become imbedded in the production during principal photography, this was quite a gift for me—or so I thought.

Just before the screening, we found that our film would be starting with reel two first as reel one had a problem and had to be re-struck, so we would see it at the end of the picture and out of sequence. Bit of a bummer of course, but not the end of the world.

What I did notice during the projection, as did my DP, was a consistent shorting of headroom on certain reels. When the film ended, he asked if I framed it that way and I assured him that I did not. Of course, he already knew the answer before he asked the question. We'd all seen the playback on set and the video dailies. We knew how the headroom was set on every frame from the moment each take was executed. So what happened?

Not the usual suspect

The culprit was a tool that most DPs dream of, a tool that has changed the way we do pictures and something that is supposed to be the DP's best friend: the digital intermediate (DI).

In the digital age things are infinitely repeatable and, as is the nature of digital, infinitely adjustable. What we must realize though is that this does not mean they are infallible. Since there are so many variables, things can get bumped and go unnoticed until much later in the game where they can cause problems at inopportune times.

Such was the case here. Since this was a 2:40 picture

and the picture height was much less than the width, headroom was kept to an artistic minimum. The pictures were gorgeous of course, but with the amount of precision involved, the smallest repositioning in the DI meant a huge difference on the screen and chopped headroom in the print we saw. Very disheartening.

Thank goodness we discovered this slip up at a time when measures could be taken to correct the issue. But it is conceivable that times could come in other pictures where these discoveries could come too late for modification and the picture could suffer as a result. This leads me to my point and why I'm mentioning this in *Camera Operator* instead of letting it disperse into the vapors of cinema mysticism.

Technology should work for us, not against us

We are in a digital age. What does this mean for us? As Camera Operators, it means that once we finish a take and declare it good, it may not stay that way. All the care and skill we use as

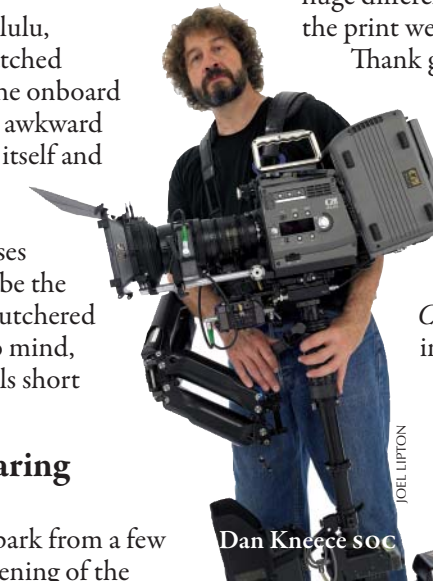
Camera Operators to make the frame the best it can be can be undone by the bump of a knob. We owe it to our craft and ourselves to make people aware of the possible pitfalls of digital manipulation of the frame and how it affects the good work we've done.

The problem is not ours alone. It began with digital audio workstations and the new age of audio. Recording engineers were told they were not needed after their initial mixes as their numbers had been recorded and the mix could be played back without them. I fear the same may happen to our DPs. Their position as author of the image is in jeopardy. Digital image manipulation has the ability to undo their original photographic intent and change it into something totally and completely different. A magical ability to be sure, but in the wrong hands a travesty.

Technology is only as good as the people using it

Don't get me wrong. The digital intermediate is a wonderful tool and allows us to do things that could never be done before. Still, the proper oversight and taste of the Director of Photography is necessary to ensure the desired results. Included in those results is the frame the Camera Operator worked so diligently to achieve and maintain. It is up to us to make others aware that our good work needs to be protected against accidental modification in the DI process.

In all likelihood, our wonderful DPs will keep our best interest in the forefront, since it is in their own as well. But in these days of non-linear editing and video dailies, many



Dan Kneec SOC

JOEL LIPTON

things unintentionally make their way into films. Soft shots are not seen on non-linear systems and find their way onto many a screen.

Could the DI become the culprit for butchering our framing? I think not. At least not with time because once people become aware of the possibility of the framing being accidentally altered in the DI suite, surely they will look out for us, won't they? Maybe, maybe not.

I know I'm beating a dead horse here. Still, if it isn't said over and over again, someone will pay the price and it may very well be one of us. New technology is just that, new. And with it comes a different set of parameters. Just so happens that, this time, these parameters directly affect Camera Operators and we have to cover our backsides or suffer the consequences.

At the same time we have to believe in our Directors of Photography and the fact they will do everything in their power to make the best picture possible. If that includes improving our framing in the DI then so be it. We serve at their pleasure. They are the reason we exist and we want to please them. Even the best of us could sometimes use help in the quest for perfection. With the digital intermediate they now have that capability. They can make us look better than we already do.

Tell others about the problem

Even so, now you are aware of what I witnessed first hand—the alteration of the frame through accidental digital manipulation. With tact and compassion, we can make people aware of our plight. If we share this with others it will help make pictures as good as they can be and save time and money in the process.

Happy shooting,

Dan Kneece, SOC President

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It Takes a Village...

Making a movie or television show is a team effort. This starts at the top as a studio teams with a producer, again as a producer teams with a director and so on throughout the project. This implicit teamwork is the fundamental reason that film is called a collaborative art.

Since I became editor of this magazine, we have made a specific effort to highlight the teamwork between an operator and a director of photography because this team is paramount to the success of any film project.

When a director of photography conveys his or her intention for a shot, they rely on their operator for so many unspoken and unrecognized improvements to that idea. As is highlighted in every issue of this magazine, the bulk of an operator's job happens when the camera is not rolling. But it is this very work that frees the director of photography to communicate with the director.

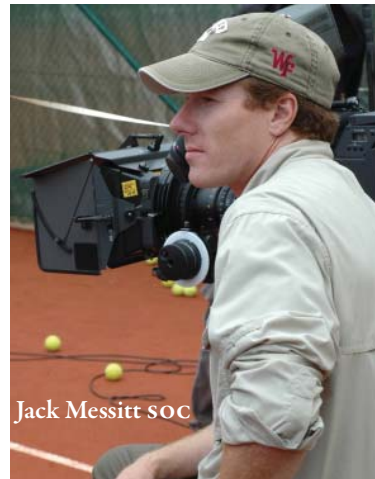
Having an operator creates an environment for a director of photography to bring their art to the very highest level. Having an operator gives the director of photography another pair of eyes to safeguard the image. Having an operator allows the director of photography to be where they are supposed to be—at the director's side.

But just as operators are there for the cinematographer, there are so many others that allow us to nourish that director/DP relationship: the dolly grip, the 1st AC, the 2nd, the loader... right down to every single PA.

We all rely upon others to do their job well so we can do likewise. It may sound cliché, but a chain is only as good as its weakest link. So the stronger the bonds of the entire team, the more important each position on the crew becomes.

This issue of *Camera Operator* magazine explores the wonderful teamwork of the crew on *Sons of Anarchy*. This collection of articles highlights not only the team of the camera operator and the director of photography, but also the collaboration between the director and the entire crew.

With "Big Seas," we are able to look at how the monumental task of covering Olympic sailing was successful



Jack Messitt SOC

because of the teamwork of the dedicated crew. And it highlights that the challenges they faced were due mainly to a breakdown in that team spirit.

Roy Wagner's editorial brings a director of photography's perspective to a project where he was not allowed to have a full team around him. This perspective shows how important an operator is to the work of a director of photography.

We also recognize the SOC's *Operator 101* workshops in this issue. This ongoing program is the perfect example of what teamwork can do.

Helping our fellow operators improve their skills is the very best way to keep the position of operator safe.

While *My Reel* sounds very individual in title, the tips and suggestions from noted cinematographers allow each of us to improve a hugely important tool in getting work.

As *Camera Operator* magazine continues to explore the idea of teamwork, we will be asking all of you to remember that the SOC is a volunteer organization. As such, the SOC works best when the team is actively working together.

In the coming months, we will be rolling out a new and improved SOC.ORG website. Never before has the SOC needed the teamwork of its members more than with this endeavor. The SOC website, like this magazine, will be driven by the content you provide.

Filled with interactive pages, the new website looks to become the very best resource for those looking to hire a camera operator onto their team. Each active member will be able to personally control their own webpage, complete with a photograph, bio, resume, contact information and a reel. It will be a great showcase of our member's talents, but with this new functionality comes great responsibility. The website will only be as good as our members make it.

I look forward to the SOC coming together like never before to create an information portal that will reach our message far and wide. It has been said many times: It Takes a Village...

In the case of the SOC, this has never been more true.

Jack Messitt SOC



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Editorial



Save the Cinematographer: Hire an Operator

By Roy H Wagner ASC
Director of Photography

Several months ago I accepted a small independent feature from a director I had worked with before. On that previous film I chose to operate because I couldn't find a qualified operator who would work for the rate. Little did I know what conflict this would bring to my relationship with that director in future projects.

It had been years since I had operated and so when he suggested that he liked my operating and would really like for me to do it once again, I thought it might be fun to try my hand at being a director of photography/operator. The experience was extraordinary but in the midst of production I discovered a bone chilling reason why a cinematographer should *never* operate.

In my thirteen-year struggle to get into the Union, I had not only learned to survive as a director of photography, but as an operator. Throughout those years I never

...I discovered a bone chilling reason why a cinematographer should never operate.

had the luxury of an operator. Much like today's geniuses that guide our industry and decide our future, I began to wonder why a cinematographer needed an operator.

Prominent cinematographers would visit my set and question, "How can you do both jobs?" "How can you judge lighting or an actor's make up through a ground glass while constantly chasing the frame line for compositional changes?" "How could you judge the density of smoke through the camera?"

Alas, I didn't understand what I was missing. The one question I was not asked was, "How does it affect your relationship with the director?"

When I finally was able to hire an operator, I didn't know what to do with myself. I stood behind the camera like an umpire at a baseball game. I had become a very good operator with very specific ideas about composition and movement. I had learned to supervise the lighting and operate while trying to collaborate with the directors who had hired me. It all seemed to be working well. How naïve I was.

I had so little knowledge of what contribution I was missing by isolating myself behind the camera. As so often happens with young filmmakers, we see ourselves as complete without the need of additional contribution. It was a very difficult transition for me and the poor operators who worked with me.

As cinematographers we hope that directors, writers, and actors will express the intent of their characters and

stories without imposing strong assertive control. By allowing us the opportunity to express our own ideas, our collaborators discover nuance that expresses their ideas in deeper or greater ways than they expected.

The happy accident that Conrad Hall often spoke of—that spark of inspiration that occurs when partners express ideas in a manner that is greater than what we expected—occurs with all of the authors (directors, writers, actors,

of director of photography was created to partner with the director, actors, writers, and producers to create the look of the film. That collaboration defines itself in many different ways based upon the relationship that your partners allow.

If a director of photography chooses to operate, we remove ourselves from the council that occurs around video village. Often there are brief moments where one's input can alter the direction of a performance, choice of camera position,

If we are behind the camera instead of at the director's side as their co-collaborator, we have lost our fundamental reason for existing.

cinematographers, operators, assistants, gaffers, key grips, art directors, etc) that contribute to the filmmaking process. In time, I discovered my real responsibility and the historical legacy of my position as a director of photography.

I know there are many cinematographers who feel the need to operate or, with the new digital technology, sweeten the image on the set. But there lies within that situation a very grave danger.

We were, in the beginning, cameramen. We did everything. As production became more complex and costly, the position

movement, or many other extraordinarily varied and subtle elements that a director will make choices about.

If we are behind the camera instead of at the director's side as their co-collaborator, we have lost our fundamental reason for existing. Indeed, based upon the lack of wisdom within the industry, it would not take long for a producer to suggest, "If we have a great operator, gaffer, and DIT, why do we need a cinematographer?"

Without that strong bond between the director and cinematographer, we will soon lose that connection. It is a

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Who will be the 2008 Camera Operator of the Year?

The Camera Operator of the Year award will be presented to the nominee with the most votes by Active members of the SOC.

Five nominees will be selected by a Blue Ribbon panel from the submissions by the membership of the SOC.

The field of nominees is limited to
◆◆ theatrical feature films with full time camera operators ◆◆
released in the calendar year 2008.

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Screenings of the final nominated films will take place in January followed by a hosted question and answer session with the nominated camera operators pending availability. These screenings are generously hosted by Panavision in the Woodland Hills office screening theater.

The Camera Operator of the Year award recipient will be revealed during the Society's Lifetime Achievement Awards evening on Saturday, February 21st, 2009 at the Goldenson Theater of the Television Academy in North Hollywood, California. Get tickets at: <http://www.brownpapertickets.com/event/48399>

strong political and interpersonal connection that can influence far more than the quality of one's operating or compositional skills.

The same is true for the cinematographer who hides within the Black Maria with the DIT, excluding themselves from the direct connection with the director. The role of director of photography was defined many years ago when stars and directors demanded specific cinematographers. If we had continued to operate the camera as well as lighting, our position would have been eliminated many years ago. We exist because of our influence, experience, knowledge, and wisdom.

We are in extraordinary times. One could easily suggest that some of the great cinematographers would never have

had their unique visual signature if they had not been by the director's side during those unique moments of inspiration. Certainly there are extraordinary elements that a camera operator brings to bear on the visual signature of a film. But when the scene is being taken, the director of photography must be by the director's side.

The director chooses us and defines our contribution. If we are chosen for our instinctual inspiration operating the camera, we are missing the contribution that we have gained through the years of knowledge and wisdom working through the aesthetic, technical, and political situations that a leader and artist learns. Although I cannot say for certain, I contend that those cinematographers who are also working as camera operators seldom have the ear of the director.

Indeed the directors may feel that they don't need the contribution of the cinematographer.

Like myself, at the beginning of my career, they may not know how invaluable that partnership might be if that cinematographer is by their side, listening to their every conversation, and quietly suggesting elements that might bring greater detail to the director's vision. As directors and cinematographers, we certainly rely upon the instinctual inspiration that camera operators, assistants, and our crew give to our ideas.

Often times those "happy accidents" heighten our ideas to far greater levels than we conceived. As a director of photography, our role is to lead, inspire, suggest, and offer guidance based upon our experience. We express the visual signature with the support of our camera operator, camera assistants, grip, and electric crew. We hope that they will inspire and collaborate with us in the same way that we serve the director.


If we choose to accomplish all of the roles in the camera department, we will discover that in a very short period of time there will be no need for the artistry that a director of photography provides.

—Roy H Wagner ASC
Director of Photography



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What's going on with members and in the industry

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For information on the **Camera Operator of the Year Award** please see page 11.

For information on the **SOC Lifetime Achievement Awards** please see page 17.

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US Marine Chief Warrant Officer Sean Fairburn soc

And the Emmy® goes to...



US Marine Chief Warrant Officer Sean Fairburn soc has won an Emmy® for an episode of the HDNet program *Dan Rather Reports* titled "Combat Photographer." The story uses Sean's HDTV footage taken during the Iraq war and Rather interviews him as part of the episode regarding his experiences as a Marine and war photographer.

His Emmy for Excellence in Cinematography was presented at the 29th Annual News & Documentary Emmy Awards ceremony held Sept 22 in New York City.

Congratulations Sean! Great work.



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...and the announcement
of the Camera Operator of the Year
from the five nominated films.

Saturday, February 21, 2009



"Sorry, dear—yes, we see your feet and you'll have to wear those heels..."

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Operator 101 Workshops

Mike Thomas SOC had an idea for an ongoing class to help operators improve their skills on the camera. He envisioned an open forum that included hands on training, experienced mentors and an environment where questions, even on the basics, were not only welcome, but encouraged. SOC members would be able to hone their skills, while associate members would be able to get valuable time on the wheels and learn from the experience of seasoned Operators, DPs and dolly grips.

Armed with a great idea, events chairman David Mahlmann SOC set about making it a reality. Larry Mole-Parker at Mole-Richardson graciously donated the use of their Hollywood stage, Hollywood Panavision sponsored camera packages and JL Fisher donated a dolly for a workshop. And thus, *Operator 101* was born.

The first *Operator 101* workshop was held in March of 2007. Mentored by Director of Photography Harlan Bosmajian and Jack Messitt SOC, the workshop skills included time on the wheels following actors on an actual set, stand-up and sit down drills, camera placement and an extensive look the 180° rule and eyelines.

Since that time, the hands-on workshop mentors have included ASC members Don M Morgan, Richard Klein and Henner Hofmann as well as SOC members Buddy Fries, Gary Baum, Bonnie Blake and Mike Thomas.

David B Goldenberg talks about his experience with the workshop: "For myself and my fellow classmates using down time to learn and network, the *Operator 101* class has provided us with a great opportunity to network, and get a handle (or hands on the wheels as they say) on what it takes to be a camera operator.

Along with Don Morgan's great stories, each instructor had their own valuable points of view on operating. The one common point seemed to be that a novice camera operator's best asset, after getting the shot, is to watch and listen. "Confidence, a good work attitude, and help from our grip brothers will get the shot!" says Don.

The SOC looks forward to this continuing workshop to help both new and experienced operators alike.



PHOTOS BY LARRY MOLE-PARKER



Top: AC Rachel Donofrie assists SOC Operator Florencia Perez Cardenal.

Above: Frank Garbutt operates with the assistance of Jimmie Crockett AC. Both of them regularly help out at these workshops.



Claudio Miranda

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Mark Boone Jr. as Robert "Bobby" Munson in *Sons of Anarchy*.

TIMOTHY WHITE, COURTESY OF FX NETWORKS



The Sons of Anarchy sport their colors. Photo by Ray Micksaw, courtesy of FX Networks.

SOC Takes on SOA

by Jack Messitt SOC

Sons of Anarchy is an adrenalized, darkly humorous drama starring Charlie Hunnam, Katey Sagal and Ron Perlman. The one hour episodic airing on FX follows a notorious outlaw motorcycle club intent on protecting the simple, sheltered town of Charming, California from advancing drug dealers and local corporate developers.

To help define the visual language of the show's first season, producers brought in veteran cinematographer Paul Maibaum (*Samantha Who*, *My Boys*).

"The executives liked what they did visually on the pilot [shot by Jonathan Freeman and Ed Pei]," says Maibaum. "So my job was to emulate that look for them: dark and edgy. The majority of the show is handheld and the bottom line is speed."

To help him with this task, Maibaum brought in David Frederick SOC (*My Boys*, *Women's Murder Club*) on the A-camera [after Mike Rintoul, who operated the pilot, had left for another project] and Steve Fracol SOC (*Land of the Lost*, *Tyson*) for B-camera and Steadicam.

"SOA is a very physical show," admits Fracol. "We are handheld with a 150mm one second, Steadicam the next. Then you'll find yourself on the geared head. There is no specific lens this show uses. It really covers the whole map."

"It is not the kind of show where every shot looks

planned out and choreographed," Maibaum explains. "It has more of a freeform quality to it, almost to the point of documentary. We are in there with the people discovering what is going on as they are discovering it. But this type of shooting makes this a real challenge for our operators."

"Because Steve and I are both Steadicam operators," explains Frederick, "we are always willing to move. We are used to adjusting during a take to make shots work. And because we are handheld, we can hunt for new opportunities in the third or fourth take, knowing full well that we got a great performance out of takes one and two. We just ease over or move to swingles. Sometimes we'll pop out to a wider lens. When you are handheld, you seem to fall into more opportunities than if you were stuck on a dolly. If only the cameras weren't as heavy as they are..."

"Again, speed is the key to this show," says Maibaum. "By going handheld, we can just get in there and get the shot done without worrying about fitting the dolly into these tight spaces. But going handheld also adds to the nature of a lot of our scenes. The intensity of it all. A certain uncomfortable feeling.

"At other times, depending on the nature of the scene, it is not appropriate. For instance, when we work on our

hospital set, we quiet the camera down to help convey the safety of that environment. But in the Sons of Anarchy clubhouse, out on the road and in the rest of the world they control by the nature of who they are, the handheld adds a gritty nature, an edginess and rough quality that adds to who these guys are.

"SOA wants to look slightly unconventional, so we can take more chances. The handheld wants to be bumpy and edgy. We crowd the frame and short side often. It is OK to be messy. Someone's mouth can be hidden for a minute and you can lose someone's eyes for a beat or two. All that makes the visuals more interesting to me."

"We do a lot of work on long lenses while handheld," says Frederick. "So you work really hard to control your breathing so you don't see every heartbeat, every breath, every pulse. But there are times when I hear, 'Liven it up a bit' because a move was too smooth. As an operator, you strive to perfect every move, but the look of this show is a little harder edged. The style is not looking for finesse. It takes the lens and focus correction and makes them part of the show. So we keep things a little more active a lot of the time."

"We bring in the Steadicam when handheld movement in the shot would become more annoying than pictorially satisfying," explains Maibaum. "But I do not mind ⇒"



MICHAEL BECKER, COURTESY OF FX NETWORKS

DP Paul Maibaum on the Teller-Morrow garage set of *SOA*.

shooting a master on the Steadicam and moving in for coverage handheld at the same time. Even if it's dirty and the operator is trying to find that hole to grab a shot, it all works. It's almost as if there are no rules. But that

feeds into the nature of the show itself. "I let the operators know what I do not want them to photograph. Be it for a technical reason or because of a storytelling element that we want to withhold from the audience. Outside of that, I like to give my operators the freedom to discover. The way I like to work with my operators on a daily basis is to get to a point where we can talk through the shots as quickly as possible. I want them to be listening to the director, listening to me. And after they see the marking rehearsal, they will know what is going on."

"During marking rehearsals, I keep my eyes on Paul," says Fracol. "He is a lot like a director in that he is a very good storyteller. He'll give us very specific notes as to camera angle with his director's finder. We mark that and when we get the frame up with the camera, we'll make corrections as needed. Not only for the first set-up, but from take to take. We're always improving the shot, always trying to find a way to make it better. Paul is very accepting to any suggestion that make the shot better."

"After a marking rehearsal with the first team," adds Frederick, "we do what we can with the stand ins. But this is never all that accurate. We have a large pool of actors on our show, but we have a limited pool of stand ins. Often they do not match gender, size, height or race... So when first team comes onto the set, everything is different. And we typically roll on rehearsals, so we are kept on our toes."

SOS — Save Our Shoulders

"I love doing hand held camera work," says David Frederick SOC. "The immediate translation and intuitive movement the operator can achieve gives the work great energy and life. The bad part is that after a few hours your shoulder is sore."

"Over the years I have experimented with a variety of pads, cloths, bean bags and cushions. My most used was a football style elbow pad under my shirt. When I saw the Camera Comfort Cushion at Filmtools, I was eager to try it out."

"It consists of a generous layer of closed cell foam pads encased in a non-slip neoprene case that has adjustable straps to keep it in place. One strap passes around your chest under your arm and the other passes under your armpit beneath the pad. The non-slip case pretty much keeps it in place. It is available in two sizes and a few colors. The pads can be removed by opening a zipper; the whole thing is easily hand washed to rid the sweat from the hours of pain free use."

"I used the larger CCC pad on a few Panaflex and Arri shows with occasional hand held, but the real demonstration of worthiness came as this television season began and I started hefting the Panavision Genesis for nearly the entire day on the series *Sons of Anarchy*. It has proven itself on a daily basis to be a great tool for a camera operator to possess. The work benefits from the lack of pain and fatigue." (See photo, facing page.)

Mark August SOC was asked to try the smaller pad since he worked with the smaller video cameras. He reported, "In

the past I would simply use a large towel on my shoulder to give myself that extra cushion and I would get looks from the camera crew. Now that's not the case. I have been using the Camera Comfort Cushion (the small size for cameras under 25 lbs) and it blows my towel out of the water! It's not just the size of the cushion but how nicely it fits! It's what's inside that makes the difference. How evenly the weight gets distributed. I have also used the cushion with the Panavision Genesis and Sony F23 and I can operate for longer on scenes with much shorter breaks in between takes. This makes a big difference in keeping a brisk work pace from scene to scene. If you are going to operate I would have the Camera Comfort Cushion in your tool bag! When the time calls for hand held, having the right tool for the job is part of being a professional."

Steve Fracol SOC, another fan of the Camera Comfort Cushion has this to add: "Over the past 22 years I have used many different types of comfort devices under cameras for hand held work. I've tried different things that would cushion the load and take some of the sting out of long hand-held takes and long hand-held days, like terry cloth towels, moleskin and even a carwash chamois, but nothing has worked for me as well as the Camera Comfort Cushion. I could not imagine shooting a show like *Sons of Anarchy*, which is about 60% hand-held with Panavision's Genesis HD camera, without the Camera Comfort Cushion. It has truly saved my shoulder!"

"Actors," adds Maibaum, "if they know it is a rehearsal, do not usually give a full performance. But when they know that the camera is rolling, they get to the level they are supposed to be at. That impacts everything so you might as well see it the way it is going to be. And... we always get take two."

"The longer I am an operator," says Frederick, "the less I worry about rehearsals. All the details that I used to need just so... they are much less precious. Trying to build a shot to perfection with stand ins is often a waste of time because they are not the ones performing when the camera is rolling. Sometimes it's best to just let things unfold in front of the camera. Not locking yourself in to a specific framing allows you to be much more inventive in the moment. As long as there is an opportunity for another take if we need it, whatever works best for the director is what is best for the show. The paramount job as the camera operator is to tell the



STEVE FRACOL, SOC

Hand held camerawork by Frederick on *SOA*'s lead actor, Charlie Hunnam.

story through the director's vision. We work specifically for the DP, but in the end, we are all there to serve the story through the director's eyes." ⇒



MICHAEL BECKER, COURTESY OF FX NETWORKS

Dave Frederick SOC, wearing the Camera Comfort Cushion (see box, facing page), lines up a shot as DP Paul Maibaum confers by walkie with DIT at HD monitor about lens exposure setting.



Standing: Actor Charlie Hunnam, DP Paul Maibaum, 2nd AC Michael Kleiman, 2nd AC Michael Cahoon, B Camera/Steadicam Op Steve Fracol SOC, A Camera Op David Frederick SOC, A Dolly Grip Jeff Douglas, 2nd AC Darrick Akey. Front row, DIT Andrew Lemon, B 1st AC David Mun, B Bolly Grip Antony Caldwell. Not pictured: A1st AC Steve Peterson.

"Directors like to capture that first moment," explains Fracol. "They like it fresh. So while I like getting a rehearsal, we usually do not get one. But the cast is great in working with us, allowing the operators to help make a

shot better. They are very respectful of what we are bringing to the show. They understand that when we are moving marks, it is for the betterment of the shot.

"When we go for it without a rehearsal, our focus pullers on 150mm aren't getting one either. Hats off to veteran AC Steve Peterson and his crew [Darrick Akey, Dave Mun and Mike Cahoon]. These guys are working hard on every setup, every shot. It is not an easy show. They are working right up to the last second to get whatever marks they can and a lot of the time are just plain winging it. Sometimes there are happy accidents and sometimes we will have to do it again. But everyone knows that going in."

"Because we do a lot of handheld," Maibaum explains, "we are much less structured than a lot of shows. There is a lot of room for our operators to make a shot as the scene is developing."

"Knowing the editorial style of the show really helps," says Frederick. "You remember that you are shooting for the cut. Your shot does not run for



Steve Fracol SOC and DP Paul Maibaum working out the details of a shot.

the entire scene. So you are really shooting for the editor. You try to think how they are going to cut into your shot. You make sure that you don't force a cut and make sure that they can play something as long as they might need it. "Especially since we run two cameras, there will almost

camera department and dolly grip to be the reason we aren't making our day."

Digital capture on Panavision's Genesis system was chosen before Maibaum joined the show, mainly as a format that would conform to an AFTRA contract.

Because *SOA* started shooting just before the end of the SAG contract, this move ensured the studio that they would not be shut down by any potential strike.

"For my money," says Maibaum, "the Genesis is the best large format video camera out there. The 35mm sized capture chip allows us to get a really nice theatrical look with a shallow depth of field."

"The picture from the Genesis is great," says Fracol. "But ironically, I don't always view the picture in HD on my 'High Def' Steadicam rig. When I use the NTSC down-converted signal I can still use my onscreen level and framelines which prove to be very helpful for many shots, but when I use the HDSI signal I have no onscreen level or framelines."

But this NTSC down-converted "solution" comes with a drawback.

"When I go to my standard def LCD," explains Fracol, "the combination between the latency in the

LCD monitor and the frame delay in the down-conversion create a significant time lapse. It could be up to 5 frames. So if I am chasing action or something fast, I'll go back to the HD monitor because of the REAL TIME viewing. It is a



A-camera Chapman crane perspective on B-camera Steadicam Operator Steve Fracol SOC, on a *Sons of Anarchy* night set.

always be intercutting, so it is not like one take is precious. They will always have choices. That is the limitation of not rehearsing, but they know that and understand when things are not perfect on take one."

"Dave and I are working together," says Fracol. "We are very conscious of each other's shot. When I am carrying the master on the Steadicam and he is in for coverage on a 75mm, I say 'does it hurt you if I'm here.' He'll guide me in to where I can be or vice versa. We really work as a team to get the very best out of both cameras."

"When we do another take, it is rarely because of the technical," adds Frederick. "That is because we are surrounded by a great team. I have a great dolly grip in Jeff Douglas. He is anticipatory and very pro-active. We work as a team and can pull off whatever is asked for."

"If I pay attention," says Douglas, "if I can make the operator's job easier, the AC's job any easier, then I have done my job. When I hit my marks and adjust to an actor not hitting theirs, we don't have to do an extra take. I never want the



Charlie Hunnam and Katey Sagal play son and mother in *SOA*.



Johnny Lewis as Kip "Half-Sack" Epps in *Sons of Anarchy*.

give and take. This is where the camera technology has been slow to trickle down to all the accessories."

In order to have on-set HD monitors for Maibaum and the director, the Genesis camera is attached to a cable.

"Operating while cabled is an adjustment," says Fracol. "Having a cable while flying a 75mm lens on the Steadicam is not fun at all. At times, we do fly with the recording deck attached, allowing us to be untethered. But at 65-70 pounds, it's really heavy. So I've gotten adjusted to the cable. I've learned how I like to drape the cable in order to pull off what I need to do. I've learned to adjust the loop so it doesn't tug too much and what size works for particular shots. For some shots, the loop is tight. Others require a larger loop. There is a learning curve to it."

"The orientable viewfinder on the Genesis is critical," says Frederick, "especially when working on a geared head. Because it is modeled after their Panaflex line, Panavision got it right with the Genesis. I can expand or contract the viewfinder to wherever I need it to



Ron Perlman as Motorcycle Club President Clay Morrow in *SOA*.

not to point the eyepiece toward the sky unless we have it covered.

"As a Steadicam operator, I am very open to using a monitor to judge composition. So sometimes I pull the eyepiece off and use the LCD by itself, especially on low angle shots."

"We originally started the show with primes," explains

go. Having said that, I would prefer an optical viewing system. Even with the peaking up, it is difficult to tell critical focus in the viewfinder. So judging focus, a job that I would normally take responsibility for, is handed off to the DP and DIT. Paul and Andy will radio to the ACs with these types of issues.

"We made an adjustment to the A-camera so I don't have to push down on the eyepiece to open the douser. I found it difficult to operate with it in some situations. And since this is video, I do not need to keep my eye to the eyepiece to stop the picture from fogging. In doing this, we removed the LCD's sun safety, so we are really careful when shooting exteriors

TIMOTHY WHITE, COURTESY OF FX NETWORKS

Fracol. "But as the show progressed, we started to shoot more and more pages each day. So Paul moved to Panavision's 27-68 and 17-34 Lightweight Zooms. They are our workhorse lenses and we use them as variable primes. This has saved us an enormous amount of time.

"Very rarely do we use them as a traditional zoom. We will occasionally hide a zoom within a shot or pull out to adjust, but they have become a real asset to time and speed. With the Preston remote focus always on the camera, we are always ready. When we were using primes, this took some time when changing lenses. But now that we are primarily on the short zooms, it is a lot faster."

Sons of Anarchy splits its time about evenly from stage to location.

"This works out pretty well," says Frederick. "Just as soon as you are sick of being in the studio, you get to go out. Then, when you are exhausted from being out, you get to go back to the set."

"Personally, I love to get off the stage," adds Fracol. "I love going on location and seeing something new. I love the challenge of it. But location work is always challenging. And when you multiply that with the number of pages we cover in any given day, throw in a company move in the middle, and it can be a real handful.

"Bobby Thomas and his grip crew [Jeff Douglas, Tony Caldwell, Frank Orozco, Chris Reid, Dejon Ellis, Bernie Horn-Bostel and Gerhan Buggs] are always at the ready with a wind break for me or to build a ramp when we are flying the Steadicam. They always come through for me which is a big deal. A five mile an hour wisp of wind can totally ruin your day as a Steadicam operator. It doesn't sound like much, but even a small wind shift can kill your horizon."

To help discover better ways to operate, Fracol records his Steadicam rehearsals on his rig.

"Watching the playback during the reset," says Fracol, "I can see issues and where I can make myself better. I'll see where I can adjust an actor's position to help me execute the shot. Recording allows me to fix problems before we are rolling.

"And to help my operating, I always drop vector marks to give me not only the end position, but show me where to start ramping down the Steadicam shot. It gives me a heads up to where I should start slowing down in order to land with some finesse.

"Working a show like *SOA* is tough. As an operator, you

really have to stay in good shape! An out of shape operator would not last on this show. Operators are always asked to put our bodies in odd, uncomfortable positions to get shots, but I have never worked on a show like this, where I consistently find myself pushed to my physical limits."

Over the course of the first few episodes, ACs Steve Peterson and Dave Mun built custom carts to help specifically with the Genesis system.

"This has shaved an enormous amount time and energy from moving from spot to spot," says Fracol. "And to help with the logistical challenges, my Steadicam cart was build with speed in mind. All my gear is with me all the time. So when they need it, we are ready. And at the end of the day, I can be packed up and ready to move in less than fifteen minutes."

"There are no new-to-the-business people here," says Frederick. "From the ACs to the operators to the DP, the



Charlie Hunnam as Jackson "Jax" Teller in *Sons of Anarchy*.

electricians and grips, they are very experienced. Equipment is placed well the first time. It seems to drop in the right place and out of frame. That comes from experience and good leadership from Paul. He knows exactly what works and what is fast. He is really fast and has amazing focus. This is a seven day show for an hour of television. That leaves a lot to do every day, especially with company moves."

"Our biggest challenge," says Maibaum, "is to finish the amount of work that we have to get done in the amount of time we are given. It is an hour long show and we have a seven day schedule. This type of show would typically have eight or nine days. And more than just that, the studio has given us a finite number of hours that we can shoot. And this is not for budgetary reasons, but for all of our safety. We do not want to overwork our crew." ⇒

RAY MICKSAW, COURTESY OF FX NETWORKS

"Coming from a feature background," says Fracol, "the pace of this show is a lot faster than I am used to. Shooting six to eight pages a day is a lot. Accomplishing that in less than fourteen hours while keeping the quality where it is, is a testament to Paul."

"Another challenge is the amount of people in each scene," says Maibaum. "There are nine guys in the gang and oftentimes we have six to eight people in a given scene. This means that you have to cover it. And the nature of the writing creates a lot of small scenes. And regardless of the number of people involved, a shot is a shot. Each new scene needs to have the cameras placed, needs to be blocked, lit and shot out. It still takes a certain amount of time to complete it and this adds to our limited schedule. So the biggest challenge is to get

Genesis. You can tweak the viewfinder to see into the shadows. That is one of the advantages to video."

"The gang's clubhouse and 'Chapel' [meeting room] are my favorite standing sets," says Maibaum. "We keep it dark in there regardless of the time of day. It is where they hang out, where a lot of exposition takes place. But they are all crowded around a beautiful table with the Sons of Anarchy logo carved into it. The guys are all smoking cigars and cigarettes in there, so it gets all smoky and makes it fun to light."

"And because we concentrate on getting close ups in there, we make them 'dirty' close-ups. A lot of profile shots, shooting through elbows, crowded frames. And the actors have such great faces that it is really fun to watch."

"The Genesis has proved to be really fast outside," says Frederick. "With Andy Lemmon, our DIT, we have pulled off some really big iris pulls with the remote. He can really make them invisible, whether it is Steadicam from interior to an exterior or bringing someone from deep shadow into the sun. It really works."

"The only real drawback is that, because it is video, you need power in order to truly set up a shot. An optical eyepiece would be pretty handy."

Being a motorcycle gang, shots on the road were critical.

"I went out as a second unit DP and shot a full day of driving, from sun up to well past sun down," says Frederick. "Our camera car is a motorcycle with a sidecar," he explained. "The sidecar can go on

either side of the motorcycle and stunt driver Steve Holladay is picture perfect for films. He knows exactly what the lenses see. With this rig, we pulled off some really exciting shots—from handheld to low angle mounts."

"But we are not shooting a Harley Davidson commercial here," says Maibaum. "The show is not about how these guys get from one place to another on their bikes. It is about their lives and most of their lives take place off their bikes. That is what we concentrate on. How they survive. How they interact with the people of the town. The conflicts that arise from the fact that they are who they are. They are bikers, bad boys. But even with all that you need to want to invite them into your home every week."

"I have the best crew in Hollywood," Maibaum adds. ⇒



Fracol cabled up on SOA backlot operating Steadicam Ultra² with a following grip double net baffle to cut down on wind influence.

the shots done and make it look right within the schedule that we have."

"This show is not about glamour lighting," adds Frederick. "It's a little more down and dirty. It's about a bunch of guys on motorcycles. That opens up a lot of opportunity for us to shoot angles that you might normally avoid."

"When it comes to the lighting," says Maibaum, "I try to see it all in my head first, but I rely a lot on Tony Anderson, my chief lighting technician, to help me. Again, it all comes down to the most effective way to tell the story within the time constraints of the schedule."

"Paul is not afraid to go to the dark side with these cameras," says Fracol. "He and Tony make a great team. Operating at those levels is not a problem because of the

MICHAEL BECKER, COURTESY OF FX NETWORKS



Charlie Hunnam doing his close ups riding behind the 2nd Unit motorcycle camera insert vehicle. Andy Lemon with Sony EX1 and Dave Frederick with Genesis camera wearing Panavision's 11-1 zoom lens. The long lens traveling close-ups were surprisingly smooth on this rig.



Panavision Genesis HD camera handling the rugged climb to an Acton CA hilltop shooting the exciting motorcycle stand on SOA's canyon set. 2nd Unit DP Dave Frederick SOC with 1st AC Steve Peterson, 2nd Unit Director Steve Davison and DIT Andrew Lemon.

"I feel very fortunate that I have the crew that I have. To have a crew that works as hard as they do, that are as focused on the show as they are, is what makes this show as good as it is.

"Ultimately, I want to see shots as if I operated them myself. But ninety-nine percent of the time, I need an operator to get that done. The job of a director of photography and that of an operator are two distinct positions. An operator is somebody that can concentrate on executing the shot. And there are a lot of elements to contend with. There is the dolly, working with the dolly grip, the focus puller, equipment in the frame... It is a full time job that demands constant attention. Before the shot, during the shot and analyzing the shot after they hear cut. Is it good enough? Did you get what you needed or do you have to do it again?

"The director of photography does not have time to do all that and the rest of the things that a DP needs to do. A DP needs to manage the entire camera, grip and electric crews; work with the director about the necessary coverage; work with the ADs to make sure we are on schedule; think about the next set we are moving to later that day; evaluate the equipment that will be needed, not only in the next scene, but for next week's episode...

"No matter how big the show, the DP is constantly looking ahead. It is like a game of chess. You need to be a few moves ahead. There are too many people to coordinate with to make things happen. You cannot do all that and be in the moment to operate the camera well. If an operator starts to look at the lighting too much in the way a DP does, then the shot could be blown because one's reaction time is compromised due to the fact that one is no longer concentrating on making the shot.

"There are apparently some Directors of Photography out there who can and choose to juggle the two jobs... I am just not one of them."

"As an operator," explains Fracol, "it is my job to find the best way to help the DP and director to execute the shot in the most timely manner. In TV, this is especially



Katey Sagal as Gemma Teller in *Sons of Anarchy*.

the case. TV has a timeframe that is not luxurious. If I can find a way for them to cut a corner and save some time, I'll bring it up."

"You have to trust that your operators intuitively know what the show is about," says executive producer Kurt Sutter (*The Shield*). "They need to know what is important. Our operators have been able to instinctively find those moments for us. You can direct people as much as you can, but when the cameras are rolling, you have to trust their intuitive sense to take over. With our operators, that trust has been rewarded."



TIMOTHY WHITE. COURTESY OF FX NETWORKS

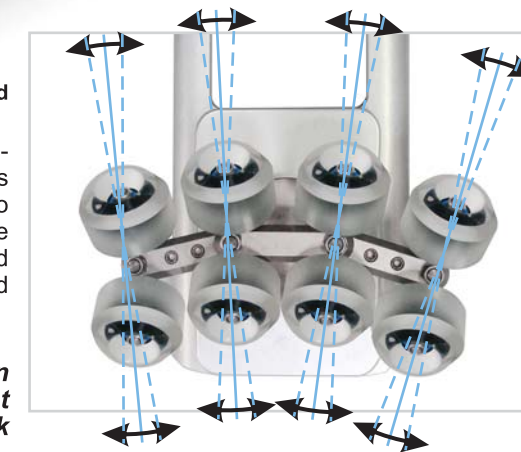
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SOC to DGA

By Jack Messitt SOC

PHOTOS COURTESY OF BILL GIERHART SOC



Bill Gierhart works out a scene with Michael Chiklis on the set of *The Shield*.

On the third day of the pilot of *The Shield*, A-camera operator Bill Gierhart SOC made a bold move. He asked to direct an episode!

While it did not immediately spark a career as a director, this daring inquiry put him on the path to where he is today—directing an episode of the inaugural season of *Sons of Anarchy*.

“What finally got me the gig was persistence!” explains Gierhart. “When I asked *The Shield*’s executive producer [the late] Scott Brazil for the chance, he said it would be unlikely that a first time director would be chosen to direct in the first season. But maybe in season two, if there was such a thing.

“When season one finished shooting, the show won the Best Actor Emmy and Golden Globe, as well as the Golden Globe for Best Drama. This killed my chances of directing in season two. Then came season three, and again, I kept pressing the issue. But I was denied because several actors wanted to direct and I basically would have to get in the back of the line.

“Season four came and I was told that the show was too hot with big time film directors (Frank Darabont, David Mamet, DJ Caruso, etc). As seasons five and six came and went, there was always something preventing me from getting the chance...

“When season seven came along, we all knew ahead of time that it would be the last season. I again stated my case and stressed that this was my last chance, and that I really wanted it badly. Fortunately, this time there was hope.

“Creator Shawn Ryan asked me to look at a director’s cut from the first episode and make editing notes from the dailies



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about what I would have done differently if I were directing (and editing) that episode.

“So I did my homework and went into post with Shawn with my notes all typed up and ready to go. As it turns out, most of the things he brought up in editing were exactly what I had typed up already. It got to be a bit funny: he’d make a comment on something in a scene, and I’d go to my paper and sure enough, there it was too!

“Then, as luck would have it, for the first time in the seven seasons of shooting *The Shield*, FX came back with a note that required a re-shoot because of the tone of a certain scene. The director who had originally shot the episode was already on his next gig and couldn’t come back to re-shoot the scene.

“They asked if I’d like to do it and I said YES! I knew this was my test, and I passed with flying colors. I ended up directing the penultimate episode of the entire series. That was huge for me, because it basically was an episode that drew upon seven previous seasons and was a really ‘big’ one.

“I am forever grateful to Shawn Ryan and co-producer Kevin Cremin for having the faith in me to do it.”

The move to the director’s chair was not a new concept for Gierhart.

“I had always wanted to direct,” he says. “In high school I

directed our little shorts in film study class. Then in college it was the same thing. When it came time for the big senior final project on 16mm, the class elected me to direct it. So the desire was always there, but the ongoing execution of this desire in the real world was another story. Operating proved to be a more realistic opportunity for me, so that was the road I took, and that is a decision of which I have no regrets.”

Before *The Shield*, Gierhart started as an operator for a PBS station in Grand Rapids, Michigan in 1992. A year later, he moved to North Carolina to work with a production company making documentaries on Steam Locomotives.

“Cruising down the tracks proved to be a bit jarring on the old set of sticks, so that’s when I thought maybe a Steadicam would help here. I had initially seen the Steadicam while in college. Janice Arthur was kind enough to come over from Chicago and show us film students what a Steadicam looked like in action. It was simply amazing, and earned a permanent place in the back of my brain. I say in the back of my brain because I asked her how much such a device costs and she dropped the bomb that she had about \$80,000 in equipment. At that time \$800 would have been too much.

“In 1994 I took a week-long Steadicam workshop with Garrett Brown, Jerry Holway, Jeff Mart, Larry McConkey and Andy Casey. As it turned out, the Steadicam was actually a horrible device that made only terrible looking shots for me. Six months went by and I took the workshop again. This time it all clicked, and I learned that Steadicam was a friend indeed. I bought the first Masters Series off the line and never looked back.”

Gierhart’s work as an operator includes the feature film *The Mist*, over 70 episodes of *Pacific Blue* and most recently the television show *Swingtown*.

“My experience as an operator brought EVERYTHING to the director’s chair. In my specific case, being the A-camera operator on *The Shield* put me at ground zero of everything that was going on.

“Six completely different locations with a 12 page day was not uncommon. With that kind of schedule, there was no time for the director to herd the actors off to some room and discuss the scene. Whatever a director had to say to the actors got said right in front of me.

“That proved to be the best classroom a person could ask for. I spent seven seasons listening intently to what the directors were saying to the actors, and how they said it. I studied how the director would approach a scene, and then I’d ask them questions. They were always so kind to answer me in detail.

“Then sometime around season four, I started ‘silent directing.’ That is, I said to myself, ‘If I were actually directing this scene, what would I say to the actors, and how would I approach it?’ Then I’d compare what I would have said to what the directors actually said.

“Then we’d shoot a take or two and while



Gierhart operating Steadicam on *The Mist*.

looking through the camera, I’d watch and listen to the performance. Then ask myself what I’d change to make it better. Doing this over and over and over was perfect practice for the real thing.

“So when it came time to sit in the chair, I was ready. Particularly because I had spent seven years completely engrossed in the show, having developed incredible friendships with the actors, I could not have asked for a better situation to start directing.”

While one would initially think that directing and operating are two completely different skill sets, Gierhart disagrees.

“I’ve come to find that there isn’t really any one big difference between the two,” he explains. “I think to be a good operator, you have to really read the script and instead of just reading the words in a scene, really study it and ask yourself ‘what is the point of this scene?’

“Half the time you realize that although these two people in the scene are the ones talking, it’s really this third person over at the end of the table that is actually being affected by what the other two are saying. So when you’re shooting it, you might do a hand-off to that third person with no lines at an appropriate moment and find that it really helps tell the story a lot better.”

Having been an operator has proven to be a great asset to Gierhart’s directing.

“Coming from the camera department, I can talk with the boom op or the mixer or the grips in their own language because I’m really familiar with what they do. To be able to say to the operator and 1st AC, ‘Can you please delay the pull until we clear this person’s look?’ and then whisper to the Dolly Grip ‘Can you please shave 10% off that move over? Feather the start of the boom and then hit it full blast!’ I think being an operator lets me realize the easiest way to go about getting what I need, and then to relay that in an efficient manner to the crew.”

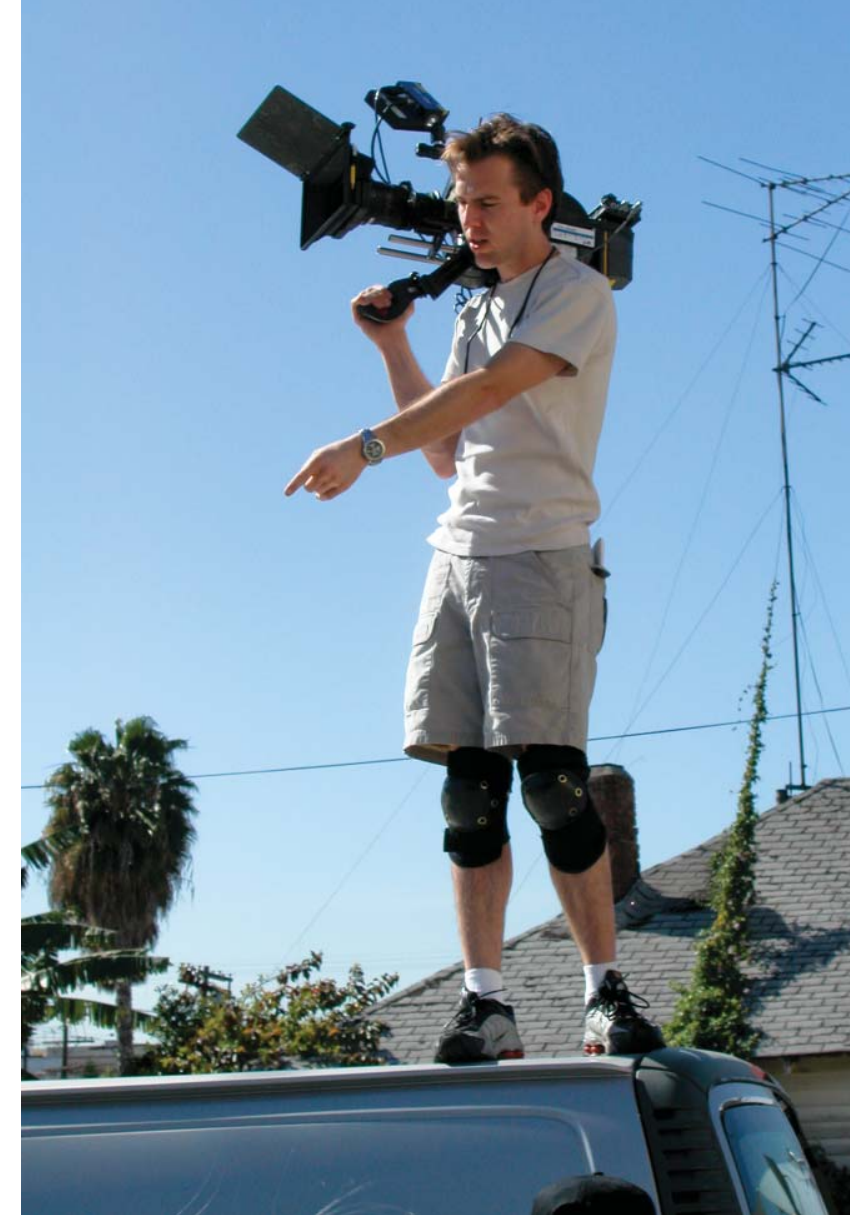
While it was a smooth transition, sitting in the director’s chair was not without its challenges.

“There were a lot of behind the scenes things that I just didn’t have experience with. Casting, tone meetings, wardrobe meetings, location scouting, etc. These were all things I had ideas about, but had never had to deal with directly. And I think we all fear what we don’t understand.”

Having been on *The Shield* for almost seven years provided Gierhart a great background to come in as a director.

“Having been on the show from day one put me in an incredibly advantageous position! I was essentially being asked to direct a show surrounded by the people that had become family to me. The actors and I had been reading each other’s mail on the set day in and day out for seven seasons.

“While that was a huge advantage, the flip side is: What do you say before a scene to an actor who has brought this character to life and really lived that character for almost 7 years? Surprisingly, there were quite a few moments where I actually had an idea they hadn’t thought of, so I ended up with a situation where it’s 50% me having some actual unique input, and 50% me being Master of The Obvious!



Bill Gierhart lines up a shot for *The Shield*.

“But working with the actors is only part of it, of course. Working with the cameras was fun because I was so dialed into the show that watching the monitors was like looking through the eyepiece. I knew exactly when things were working 100% and when something needed changing.

“God bless Randy Nolan for coming in and covering me on A-camera. *The Shield* has its own unique set of circumstances when shooting and we just threw Randy into the water and watched him try to swim! He did an absolutely amazing job and took right to it! I’m willing to bet there aren’t too many Steadicam operators that are used to doing a whip pan, then grabbing the lens in the middle of the whip and zooming in to a close-up at the end of the whip, then running through the door to the outside and grabbing the iris and turning it the opposite way you just rotated the zoom! We like the look of the manual iris adjustment; to see it on screen gives it more of the *COPS* feel, like you’re really there, and it’s all actually happening. Randy went with it all, and nailed it!

“Working with Rohn Schmidt for so long was another big advantage. I was so familiar with how he lights (which is damn good AND damn fast!) that I was able to plan everything out

accordingly. Knowing that I'm going to be able to cross shoot two people at a given time is a very big help when planning for the day. I knew that if I somehow missed something, he'd have my back, and he did. The same goes for Richie Cantu, the other operator. He's been my brother in the trenches for so long, and I knew I could count on him to deliver the goods and save my butt! He most certainly did."

Directing his first episode of *Sons of Anarchy* brought

"If you really want to direct... the trick is to make sure you are ready for the jump."

Gierhart to unfamiliar territory: a new show.

"Coming over to *Sons of Anarchy* was not easy for me. Everything I was so familiar with was gone. I didn't know the show like the back of my hand. The actors were strangers to me! (Except Katey.) I didn't have a no-words-needed-so-you-just-read-my-mind-ok relationship with the camera crew.

"And the opposite held true as well... No one had a clue who I was. And if they checked for my directing credits on IMDB, they were in for a web page that wouldn't load!!

"All I could do was give it 110% and have an open mind and an open heart and hope for the best.

"I spoke with the other directors that had worked on the show, and they all warned me that there's not a lot of time

'play.' Letting things happen and trying different things wasn't going to work well time-wise. I really needed to go in with a plan and stick with it, so that's just what I did. It proved to be the right thing to do and everything turned out wonderfully.

"I had a few things going in my favor: a crew that was 7 episodes into the season meant that the machine was up and running smoothly.

"Having two fantastic operators [Dave Frederick and Steve Fracol] really helped me worry about one less thing. Those guys are thinkers, and I believe that's what can make or break you as an operator.

"Pretty much any operator in the guild can come in and give you a nice frame, do a nice tilt up on a stand up, etc. That's not what separates you from the rest. You have to have a mind of your own, read the script, and understand what the point of the scene is. Then you give everything you've got to try to make the camera tell that story in whatever way (be it subtle or not) suits the show. That's Dave and Steve.

"The other end of it all is working with the actors. Again, I was blessed to have a wonderful group to work with. The

actors on *Sons of Anarchy* are all straight up professionals. Everyone was very much willing to try whatever it is I was asking of them. And in this particular episode, I asked some of them to go to new places that their characters haven't been yet. They were very receptive to my ideas, and that made everything go really well.

"And let me not forget to mention the genius that is Paul Maibaum. So many times I was satisfied with a scene, and Paul would enthusiastically suggest something really cool that was very much the icing on the cake, and I'd say 'Well, are you sure we can get it quickly?' and he'd always say yes, and then deliver on his promise!

"We shot the episode in seven days and five of those seven were 11 hours or less. But the best part is that we didn't just get everything in a timely fashion, we got everything really well. That says a lot about the crew."

Directing *Sons of Anarchy* has only fueled Gierhart's enthusiasm for directing.

"I want to direct full time, but we'll see if that can prove to be an immediate reality. Financially speaking, I will most likely need to do a little more operating until I can make a permanent switch. Hanging up the Steadicam will be a welcome relief as the last 12 years have been nonstop Steadicam every day, and that wears you down."

With Gierhart's transition gaining momentum, he does have advice for those thinking about making the move.

"If you really want to direct, you need to just go for it. The trick is to make sure you are ready for the jump. Try the 'silent directing.' It's a great test. At first you might find yourself with nothing to say in your head but 'Ummm... Ummm.' But when it starts to click, you will realize that you have a lot to say to help make it better.

"The best advice I can give you is to watch the director like a hawk. They are the ones that have the job because they already know what they're doing (you hope), and they're the best teachers out there."

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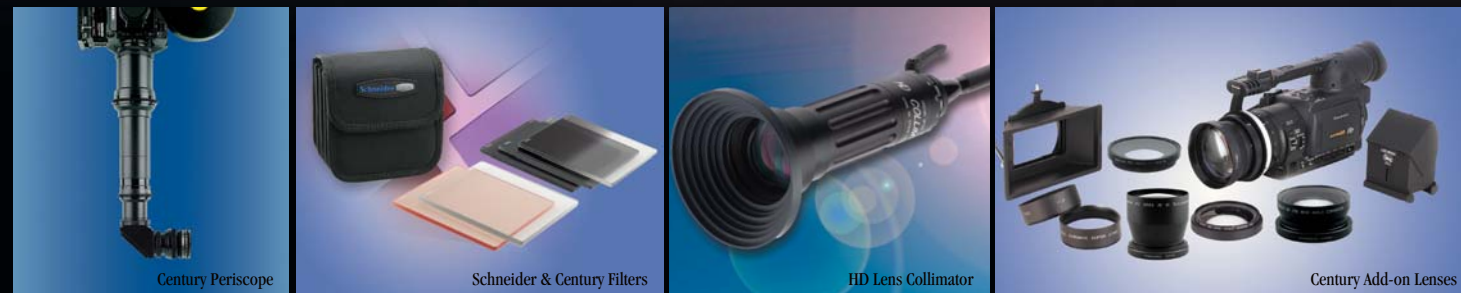
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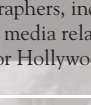

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Big Seas, Big Winds, Big Challenges

by Laurie K Gilbert SOC

PHOTOS BY LAURIE K GILBERT SOC

Camera operators are often required to produce sharp stable images from extreme environments, but few locations are more challenging than when the camera is situated in a small boat, far offshore in inclement weather. The smaller the shooting platform, the bigger the problems of instability. But over the years, there have been many ingenious horizon leveling solutions offered to motion picture camera operators as they shoot for cinema or television.

Currently some of the options for both film and electronic camera stabilization at sea include Wescam, Spacecam, Cineflex, Pictorvision, Leo System, Gyron and the ingenious Mako Head—all of which work extremely well in different ways and none of which are cheap to hire!

First there was Schwem

Before any of these devices were invented however, one of the most cost effective solutions to shooting long-lens dynamic imagery in big seas was the Schwem Gyro lens. This device literally revolutionized the television coverage of offshore yacht racing. Since 1986, it has been the foundation of the extraordinary pictures that small specialized camera teams have produced from the America's Cup, the TRANSPAC, Whitbread, Kenwood Cup, Rolex Maxi



Scorpio camera operator George Johns follows Laser Radial silver medal winner Gintare Volungeviciute as she accepts the appreciation of the Lithuanian spectators. Seated in the bow is Vision Systems French technician Max.

Series and currently the Volvo Round The World Race.

The Schwem system replaces a normal lens on the front of any of the Betacam family of cameras. An internal gyro system stabilises the gimbal-mounted prisms which actively compensate for the pitching motion created by the sea. A camera operator, safely harnessed into a small boat, can shoot rock stable handheld images at 280mm for hours on end. The system works equally well in helicopters.

1988 Olympics

In 1987, after a two man camera operator team completed the world coverage of the Fremantle America's Cup, they received an invitation from the International Olympic Organising Committee to travel to Korea. There we pioneered global television coverage of the 1988 Olympic Sailing Regatta in the coastal city of Pusan.

The lack of suitable recreational boats and the extreme sea conditions of the Sea of Japan meant that we had to design camera cockpits in Australia. These were then built for us in Korea and fitted above the cabin space of Korean Navy military gunboats. Just before the Olympics started, five Australian camera operators and I arrived in Pusan. I had exactly one week to train them with the Schwem system before we hit the deck running to cover the event for the first



The Korean Olympic helicopter hovers over the camera boat the day before it crashed in the sea.

time in the history of Olympic Television.

The Naval camera boats and Schwem lenses performed faultlessly on the first day of racing, which is more than can be said of our aerial camera ship, a Korean Air Force Bell 206. The helicopter suffered engine failure several miles offshore, crashed into the sea and proceeded to roll over and sink with all the crew and camera equipment on board.

Just before impact, cameraman Mick McDermott managed to put a Mayday out through his headset. In reality, the Australian production team on that waveband were the only people aware of the gravity of the situation. So we were the ones that actually mounted the rescue operation. Several of us went hunting the big seas with the gyro lenses looking for debris and what we spotted were four little heads floating in the middle of rough sea flattened by aviation fuel.

When rescue arrived, it was discovered that the two Australians had applied their surfer heritage to the situation. They had improvised flotation for the unconscious Air Force pilots with soft camera bags and inflated condoms!

Once we had them out of the water, we notified the Australian producer to organise ambulance support as the Navy skipper opened the throttles and powered the big gun boat back to the Olympic operational base. By day two, the hero Australian camera operators could do no wrong, especially as global television networks began to appreciate the stability of the Olympic sailing images as the Schwem gyro lenses tamed what were literally huge seas.

Continued Development

Over the next twenty years, other stabilizer lenses were invented by companies such as Canon to minimize vibration, but nothing since that time has matched the cost effective abilities of the Schwem in challenging sea conditions offshore. It is still used today, especially in the global far flung venues of the Volvo Race (Europe, South America, India, Asia, China etc). But the handwriting is on the wall for this remarkable device because its optics are a long way short of being suitable for HD work.

For Roy E Disney's recent sailing feature film *Morning Light*, which was mostly shot on Sony HD Cinealta 950 cameras, we evaluated the remarkable Mako Head for the mid-Pacific Ocean sequences. I spent several days on a pitching catamaran offshore from Honolulu listening to the

two computer-controlled hydraulic rams of the Mako Head. They operated in perfect unison to provide a remarkably stable, level platform for the conventional head which then supported the Sony motion picture camera (images available on the Mako website).

The only challenge I found operating the Mako Head was that, although the camera and viewfinder were perfectly stabilised, the camera operator standing on the deck of the catamaran was moving around with the influence of the sea. Video goggles or a small monitor may be the solution to the problem of trying to keep your bouncing eye to the eyepiece.

Two decades after a small group of camera operators pioneered the imagery for America's Cup and Olympic sailing, the world has now come to expect rock stable motion picture imagery on both the television and the cinema screen, no matter what the sea conditions.

The Politics of Camera Equipment

Cue the 2008 Beijing Olympic Games, where the venue for the sailing event was the Chinese coastal resort town of Qingdao. Although the technology had evolved since Pusan, the challenges facing the television team were definitely equal to those of Pusan. This was especially true because we were now required to originate the pictures offshore and transmit them live and in full HD, no matter what the weather conditions. Our motto became: "If they sail, we shoot!"

The first surprise in pre-production was a thick coat of green algae totally covering the race course. To combat this, Chinese authorities mobilized an army of tens of thousands of fisherman, boat owners, beach rakers and truck operators to collect and dispose of the algae whilst an offshore boom was rigged to prevent any more of it floating into the Olympic venue.

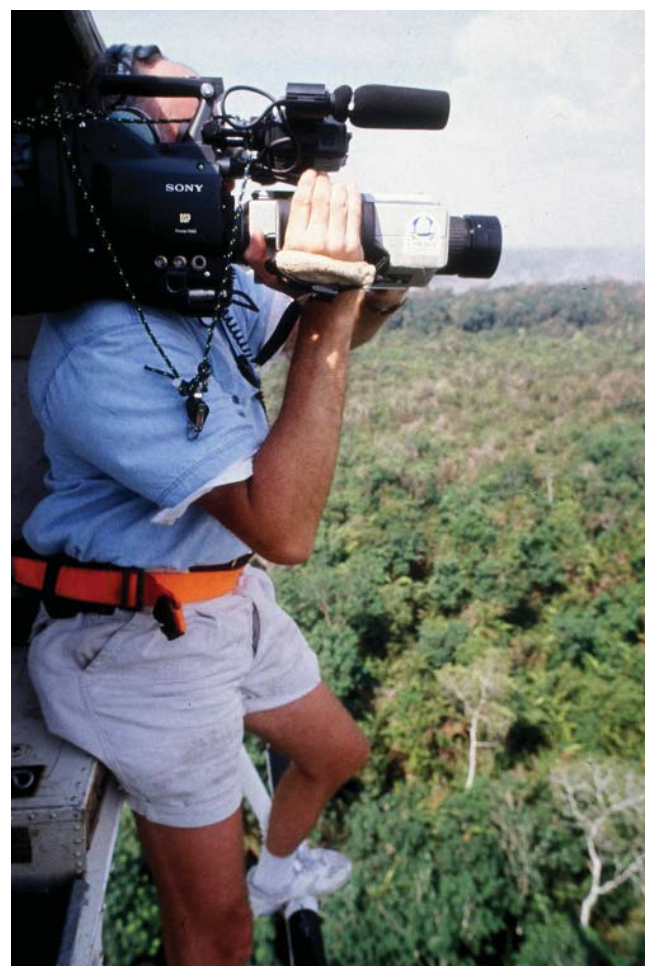
Other problems involving global politics were less easy to solve. As I understand it, the extremely complex technology inside the state of the art gyro camera balls originates in part from the rocket science that allows submarine based missiles to break the ocean surface and then navigate accurately at supersonic speed to their designated target. Almost all of these systems are designed in the USA and for very obvious reasons, the American government is very sensitive about where and how the application of this technology is used outside the USA. To my knowledge none of the most modern gyro camera systems had previously ever been allowed into China in case their secrets were revealed to more than just the film industry.



Laurie Gilbert in his harness operates the Schwem lens for the 1987 America's Cup.

The requirement for full live HD broadcast meant that the Schwem option was not a viable solution either in the air or on the water—and yet all the American designed alternatives to the Schwem were both seriously expensive and in reality banned by US law! The only alternative solution on offer was the Scorpio Head which was designed in Barcelona by the Spanish company Service Vision Systems. The Scorpio had earned a global reputation for stabilizing the motion picture imagery originated from film cranes and camera tracking vehicles. And its Spanish heritage allowed it to be imported into China when alternative American options were blocked by law.

On a film set, the normal working environment of the Scorpio, it doesn't require an aerodynamic housing. But Service Vision Systems designed and built special fiberglass domes for all the helicopter-mounted cameras. These domes were also ideal for protecting the boat-mounted Scorpio heads from both heavy rain and the destructive influence of sea water. ⇒



Harnessed into a Bell 206, Laurie Gilbert operates the Schwem lens over the Brunei jungle in 1999 while standing on the helicopter's skid. Don't try this at home!



Shooting the sea trials of the Mako Head for the recently released Walt Disney Company cinema film *Morning Light*.



Highly experienced camera boat drivers allow camera operator George Johns to operate his Scorpio very close to Gold Medalist Ben Ainslie and the Finn fleet.

In the twenty years between Pusan and Qingdao, the Olympic regatta television production team had grown from a handful of Australian cameramen—six Schwem lenses and a local KBS production unit—to a multi-million dollar BBC OB truck and several hundred international HD television experts.

Included in the team were six highly specialized sailing cameramen from Denmark, Wales, England and Ireland who all had 10–25 years' experience operating cameras offshore and mid ocean. They were supported by a land based team of talented Xtreme Sports cameraman from the USA who could adapt and operate in any weather conditions.

The camera team was controlled from the OB truck by a team of American sports television professionals who definitely had the experience to overcome the multitude of cultural and operational challenges we all faced.

The Scorpio heads did a reasonable job of stabilizing the camera boat-mounted cameras within the wide to middle focal lengths and the controls proved instinctive for the camera operators with very little practice.

In the case of the camera ships however, it became apparent that the Chinese military Dauphin helicopters were producing a wide range of vibrations that the Scorpio mount was never designed to combat. Although it functioned extremely well in a hover at the wide to middle focal lengths, the unbalanced blades of the aircraft created problems when

the aircraft was in a turn.

The problems were realised several weeks ahead of the Olympic opening and a request was made at the highest level of government for special dispensation to allow the more sophisticated—and considerably more expensive—Gyron and Cineflex HD camera systems to operate in China for this one special event.

Rumor has it that the final permission was signed by George W Bush himself but with strict conditions of security applied to the operation of these extremely sophisticated heads at the Olympic venue.

The end result was the sudden appearance in Qingdao of both a Gyron and a Cineflex head accompanied by an operator team with Rottweiler security practices that protected the integrity of the two camera mounts for the duration of the games.

The Gyron became the long lens camera on the water and the vibrations from the military Dauphin were easily neutralized by the sophisticated gyro electronics of the Cineflex. The decision was made to mount the Scorpio on Heli One which would fly low, operate wide and show the relativity of the boats racing on the course.

On Heli Two, the Cineflex flew higher and pulled the close ups on its longer, more stable lens. After years of preparation and months of preproduction, suddenly it was Day One, Race One—SHOWTIME!



Toronto based sports cameraman Rick Quinton focuses his long lens onto the television race course from a stable platform on the breakwater. Another camera is positioned high on the lighthouse tower in the background.



Legendary NY camera operator WL Jackson (right) making friends with his Lithuanian counterpart.

Filming the 2008 Boat Races

The Olympic sailing venue had five separate courses located inside the anti-algae offshore boom and the live television course was no more than a mile off the breakwater. This breakwater was specially constructed to accommodate literally thousands of spectators as well as our intrepid team of long lens OB cameramen perched up towers and in one case, on top of a lighthouse.

The aerial camera team operated their two helicopters from a special helipad situated on a second pier parallel to the breakwater. The flying time from take off to the course was less than 60 seconds.

In the shifting onshore winds of the event venue, the final alignment of the race course would be set only minutes before the start of each race. Although the helicopters could operate well on the upwind leg of a trapezoidal race course, we discovered the hazardous tailwind made it impossible for either helicopter to operate on the downwind leg of the course. ⇒



The spectacular on-board imagery originated from the robotic HD Race Cams team.



The Chinese media get their first view of the inside of the Scorpio Head as Max and Santiago prepare the camera.



Each morning, the competitors sailed past the symbolic Olympic Flame on their way to the course.

The eventual solution was to mount the two different camera systems on opposite sides of the two aircraft so that no matter which sailing leg we were trying to cover, one helicopter could always operate up wind.

On the water below us, three sailing cameramen leap-frogged around the television course with their different

camera systems, each operator using his experience to anticipate the sailing action, utilizing the full potential of his particular mount. As they relocated at top speed to the next rounding mark, the helicopters and the land based cameraman with their lighthouse vantage points covered the action on the long lens until the camera boats were in position ready



Bruce Sabin takes to the sky in Heli Two with the Cineflex System.



to operate again. For this first three days, the learning curve was steep. But by day four, every camera operator was providing the best images possible from his camera system and location on the course.

The measure of how much each of us improved was the increase in the number of times you heard that magic message from the director: "Coming to Heli One—take Heli One."

Supporting the Scorpio equipment were the three Service Vision Systems technicians, Antonio Vega, Max and Santiago. They labored tirelessly to provide the best performances from heads we all knew were operating in an environment they were never originally really designed for.

Although both Dauphin camera ships were flying from

an Olympic helipad, they were operating completely within a Chinese military context. Each evening, they returned to the heavy security of the nearby military base. But they always returned minus the Cineflex camera which had been removed and stored securely at the Olympic compound.

The midday refuel was also performed at the military base. This meant that each day we all flew over a multitude of missiles, jet fighters and more than 20 Chinese helicopter gunships before landing on a very sensitive runway to execute a quick refuel.

Both aircraft operated with two non-English speaking pilots and an engineer, but we also had two Hong Kong based multilingual pilots to act as our interpreters. ⇒

The camera operators' view of the Scorpio Head on Heli One as they fly over the city of Qingdao.

Despite their size, the space allocated to the cameramen inside the helicopters was minimal. For the duration of the games, I actually operated the Scorpio Head with the monitor and control unit balanced on my knee.

The helicopters carried full link gear to transmit the HD images to the Olympic control room and I suspect our altitude gave us the edge over the cameras and transmitters at water level trying to perform the same task. Each racing class competing on the television course also carried four small, live HD on-board-cameras that produced some of the most dramatic images to come out of the event. This was especially true during capsizes. To rule out any weight disadvantage from these cameras, all other boats in the same event carried dummy camera housings matched to the same weight.

The Weather Factor

It was always accepted that the weather would be a critical factor for both the sailing and the



The camera operator sat in Heli One with the Scorpio camera control unit balanced on his knee.



Helicopter marine expert Laurie Gilbert with Heli One and the Scorpio Head.

television coverage of the event. And it was inevitable that we would be hit with conditions that sorely tested all our experience. There was always a lot of pressure to finish on time and get all the results on the board. But about a week into the event, the weather suddenly deteriorated dramatically. Suddenly, it was raining cats and dogs and the wind was blowing the dogs off chains. To the Europeans, it was normal sailing weather, so "let's go sailing!"

The racing class for the television course that particular day was the spectacular 49ers. For the next few hours, as the weather deteriorated further, the Olympic sailors and the television team proceeded to demonstrate to the astonished Chinese spectators that no one gets a free ride at the Olympics.

On race course one, the eight gold medal finalists of the 49er class literally flew and cart wheeled around the course. This forced the decision that,

next time, it would be a good idea to paint country flags on the tip of the keels so we could accurately identify who was capsized and where.

Both camera boats operating Scorpio heads were relatively small. The minimum cockpit protection for the camera operator combined with the requirements of the job dictated that the boat couldn't just turn into the weather and ride the storm out. The legend that emerged from the event was that a particular camera operator was forced to absorb the electrical voltage leaking from the Scorpio control units due to the ferociously wet conditions.

But the race generated a gold medal winner and the global audience gazed in amazement at astonishing images from truly horrific weather conditions.

Worth the Effort

The following day was back to bright sunshine and clear blue skies. In appreciation of the efforts of their talented production team in Qingdao, the director and producer posted a note that said the following:

"Under amazingly difficult conditions, we succeeded in performing a production that captured every detail of every scheduled race, spread out over a large venue and five courses, with high winds, heavy rain and dangerous seas. We should feel proud that the talented people at EVERY level at this venue accomplished more than we could ever have expected. Thank you for your work and let's all congratulate each other."

In four years' time, if the invitation comes in for the six of us to fly to the UK and operate a gyro camera system in big seas, powerful winds, heavy rain and rubber gloves, will we accept the job? Hell yes!

The six sailing and aerial camera operators who brought the world the Beijing Olympic Sailing Regatta were principal cameraman Hans la Cour, George Johns, Matthew Connor, Adam Brown, Bruce Sabine and Laurie K Gilbert SOC.



Laurie K Gilbert SOC of L'Image Cinematography is a production DOP who shoots feature films, commercials and documentaries from his operational base in SE Asia.
laurie@limage.tv www.limage.tv

At the Laser Radial award ceremonies, Lithuanian Gintare Volungeviciute (seen in her boat on pages 38-39) savors her Silver Medal moment.





By Joshua Harrison

As I was recently cutting my reel, I realized everyone who was giving me input was a fellow operator. I appreciated every comment, but I kept wondering: What would a DP think of my reel? Would he or she be interested enough to hire — or at least interview — me?

I suspected it might be interesting to give a number of anonymous reels to various DPs for review. After finding 10 brave operators and four DPs willing to participate in my study, I came up with some interesting conclusions.

I wish to preface these, however, with the acknowledgment that this is merely a sample. The opinions stated are not universal; what one or more cinematographers liked, others may have hated.

What to Include?

“I want to see storytelling pictures,” offered ASC President Daryn Okada (*Baby Mama, Mean Girls, Dr Dolittle 2, Harold and Kumar Escape from Guantanamo Bay*).

“Composition! Interesting composition, good composition!” says Levie Isaacks ASC (*Tales from the Crypt, Malcolm in the Middle, Dawson’s Creek, No Better Place To Die*). This was the first thing out of his mouth when I asked him what he looks for in a camera operator’s reel.

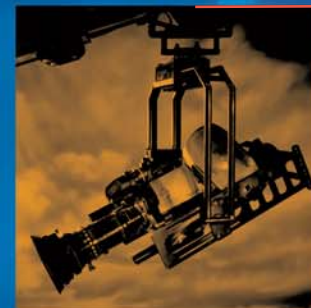
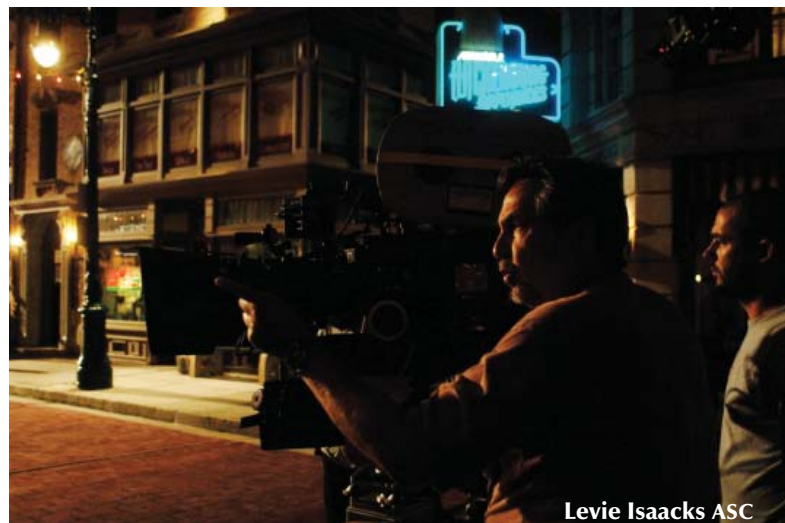
“I like seeing some shots that don’t move but are well composed,” added ASC Vice President Michael Goi (*The Wedding Bells, My Name is Earl, The Dukes, Witless Protection*).

Composition, then, is arguably the most important factor, but what about the rest of the reel, the nuts and bolts — length, editing and music?

How Much to Include?

Length has been much debated. Most operators I talked to felt a reel should be 3–5 minutes long, with the emphasis on 3 and not 5.

However, David Armstrong (*Saw 1–5, The Lodger, Next Day Air, In Northwood*) commented that the length should be dependent on the variety of shots. Once the selection begins to feel repetitive, he doesn’t want to watch anymore. ⇒



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He wouldn't mind a 10-minute reel provided each shot was interesting and different from what he'd already seen.

Armstrong also noted that DVDs allow operators to have longer reels, broken into different varieties of operating: one chapter for feature films, one for commercials and so on. This lets the DP watch the selection most appropriate to the project at hand.

Mixing it up is important. Showcasing different operating styles and types of shots is key. According to four DPs, the perfect length falls somewhere between 3–6 minutes. If your reel is running a bit long, look for the shots that seem repetitive and cut them out.

Editing and pacing are crucial. Of the cinematographers polled, several noted the reel should open with a strong shot. But after the opener, some DPs wanted to see more cohesive scenes, with a master shot and coverage, to get an impression of how the operator works across setups.

How Fancy?

Straight montages can be jarring, whereas a scene that is cut well and composed well shows the context of each shot and reveals how each setup contributes to the flow of the scene. That said, don't dawdle. Show the master and a few pieces of coverage, and then be ready to move on.

Music is quite possibly the most subjective part of a reel. Many operators say to avoid music with singing, and one of the polled DPs agrees. Michael Goi ASC stresses that the music shouldn't overpower the images.

In one particular reel, a DP commented that "the music didn't fit the pacing of the visuals at all. They fought each other, and neither won."

So be careful to match your footage with appropriate music.

One reel that consistently received positive reviews was broken into 20–30 second vignettes, each with a different piece of music that complemented the images. If the reel is longer, a few songs can be used, and shots should be placed according to the feel of the music.

One of the questions I asked was how important it is for known actors to appear in the reel. While answers were consistently divided, one DP did note that it at least demonstrates the operator has worked on bigger shows.

To Web or Not to Web?

How important is a web-based reel? According to the DPs I polled, not very, but someone is bound to want to see your reel—right now! We live in an age when immediacy is very important and getting your reel to them instantly is a great tool.

But one DP commented that he didn't like Web-based reels because they often run into starts and stops—due to slow connections, slow servers, etc. This can really destroy the flow of a reel.

One great thing about a web based reel is the ability to tweak your reel and add footage, and upload it to the site. No more sitting on a pile of DVDs wishing you could just get rid of that one shot that really bothers you!

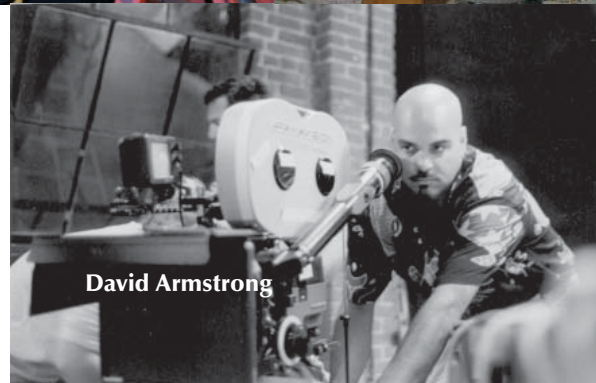
Reels are an ongoing battle. They should be constantly changing. I'm still working on mine but you can check it out



Daryn Okada ASC



Josh Harrison



David Armstrong



Michael Goi ASC

at: www.joshharrisoncamera.com.

In the end, DPs need an operator they can trust to help them tell the story — one they can work with, who understands composition as a part of the story. After all, we are their partner and their eyes. We see it first!

A very special thanks goes out to the operators who submitted their reels for evaluation:

Rick Davidson, Lance Fischer SOC, Brad Grimmer, David Allen Grove SOC, Alec Jarnagin SOC, Dan Kneece SOC, Mike McGowan SOC, Jack Messitt SOC, Jon Myers SOC and Terry Pfrang SOC.

And thanks to Jon Witmer and Russell Todd for help with the article.



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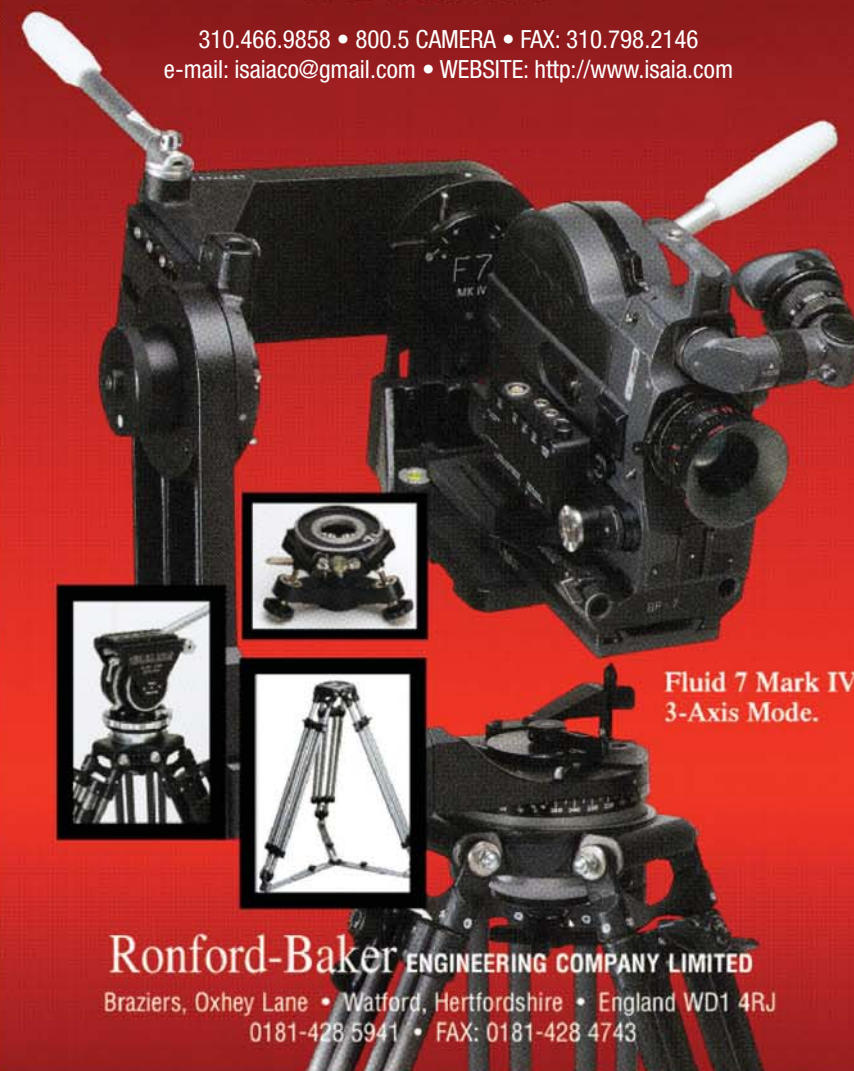
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Do I Need a DIT When Working in HD?

By Jeffrey Cree SOC

HDVS Market Development Manager
Band Pro Film & Digital Inc.

Do I need a DIT when working in HD? The honest answer to this question is maybe. While I am a proponent of the DIT (Digital Imaging Technician) position for multi-camera episodic and feature productions, I would not consider it a requirement for the normal single-camera documentary or natural history productions. I say this, yet I know of natural history and documentary productions that would not have been successfully completed without the participation of a well-rounded DIT. Multi-camera productions are another matter.

It is very rare to have someone on the normal camera crew that can put together the necessary equipment for the more complicated production, but this should be easy for a good DIT. I find

Knowing the basic skill sets that every DIT should have makes it easier to determine if a DIT is necessary.

that much of the resistance to using a DIT on the camera crew comes more from the lack of knowledge of the position or from a history of an unsuccessful collaboration between a DP and a DIT. Knowing the basic skill sets that every DIT should have makes it easier to determine if a DIT is necessary.

Most of the positions in the modern day camera crew have been clearly defined. Everyone knows the duties of the Camera Operator, First Assistant and Second Assistant, but the DIT position remains ambiguous.

Reviewing the roster of those that call themselves a DIT, the ability levels vary greatly. Some have engineering backgrounds; others come from the video control position; still others come from video assist backgrounds. Each of these backgrounds brings a different skill set to the production.

A Director of Photography has to consider if these skill sets provide a benefit to their production workflow. As with other positions in a camera crew, we find that all those who fill them are not created equal and DITs are no exception.

Certain individuals may have advanced skills in camera setup and developing custom looks for the show. They might have special talents in designing production systems and interfacing with post production. Some have proven abilities to develop camera packages for special applications, such as aerial imaging or underwater applications. For this very reason some of the more advanced personnel in this field have stopped using the job title of DIT to differentiate their particular skills from those of the average DIT.

So what is the basic skill set that constitutes a qualified DIT? I polled some of the most advanced working DITs and assembled a fairly good consensus of the baseline requirements for this position. They come down to four basic skill sets. Interestingly



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enough, those polled all came back with variations of the same criteria and the first requirement had nothing to do with the technical portion of the position.

•**The ability to communicate**

A DIT must have the ability to communicate with the Director of Photography and other members of the crew. This includes providing clear explanations of issues and problems to the crew, production, and the rental facility that is providing the equipment. The most important aspect of this requirement is that the DIT must be willing to identify issues that affect technical aspects of the production so that corrective measures may be instituted.

The best relationships I've had with the Director of Photography as an Imaging Technician have been collaborative in nature. The result is a project where my knowledge of the camera and the visual creativity of the Director of Photography work together for the good of the production.

•**Knowledge of the controls and setup of the equipment to be used on the production**

Knowing the equipment sounds simple, but with the rotation of models from the various equipment manufacturers, it is not always possible to have a background on every model in use. Someone who is good on a Panasonic camera



DIT Work Station

preparation time to learn the equipment. The DIT must take advantage of every workshop and seminar to stay up-to-date on the current equipment. Rental facilities around the country have been very open to working with DITs to get the basic knowledge required to interface and control the equipment in their production systems. The best DIT has a network of knowledgeable resources to call for advice. This

The best DIT has a network of knowledgeable resources to call for advice.

may not have enough knowledge to work on a show using Sony F23 systems. In fact, a DIT who has only worked with the HDW-F900 may not have the knowledge to get the full performance and benefits from a Sony F35.

If this is the case, the DIT must insist on getting proper

may be from the rental facility, equipment manufacturer or supplier, but the network needs to be in place prior to the production. It is imperative that the DIT has this knowledge prior to going on set.

Some of the cameras like the Viper, Red, F23 and F35 limit the on-set manipulation required to operate these cameras in Cine Mode, but the DIT must still know how to configure these cameras with the proper setting.

•**A basic understanding of video (analog and digital), audio (analog and digital) and timecode**

To design a system, the DIT must know the characteristics of the signals coming from the cameras and other sources on set. Cable limitations, signal loss and delay characteristics are keys to having a system that functions properly.

With the F23 for example, knowing



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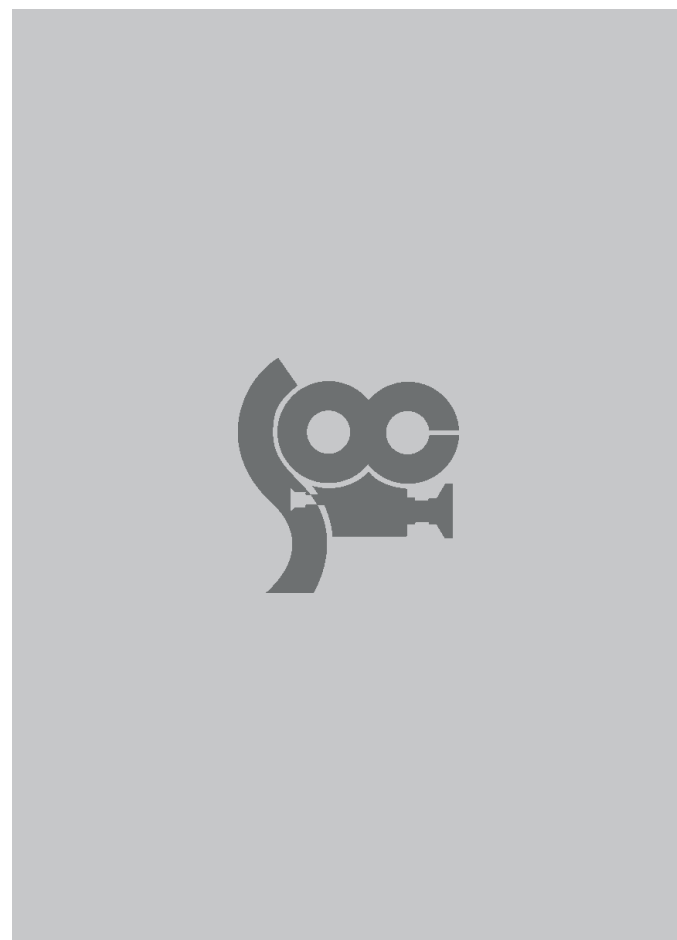
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the difference between a 4:4:4 dual-link feed, which has embedded audio and timecode, and a 4:2:2 monitoring feed, which only has audio and timecode during playback and may have a LUT applied, is very important.

On-camera recording simplifies this process, but more and more of the systems are using off-camera recording, which requires timing of the video, audio and timecode to achieve a proper recording, due to the independent feeds and sources. Fiber transmission systems and HD-SDI routing sometimes make us forget about these timing issues, as all the signals are in time in the embedded HD-SDI signal, but when working with them separately, transmission delays and timing become an issue.

As they are often used for monitoring on set, down conversion and cross conversion fall into this category. Processing delays and sync sound may be issues addressed setting up this series of feeds.

• **Monitor setup**

This sounds like a basic skill for the position, but it was included on every one of the lists I received from working DITs. Knowing how to establish proper setup and matching monitors is important especially if the DIT will be performing on-set color adjustments. Not having a proper reference monitor is a sure way to have a problem during a production.

Many of the new monitors have LUT boxes built into the monitor. It is essential that the DIT know how to route this feature, especially when using RAW or Log outputs for

monitoring. I have seen more than one production go bad when the output of the LUT box was fed to the waveform monitor and adjustments were made that could not be repaired in post.

These four skill sets were listed by every DIT who was asked what the basic knowledge is to perform the job. When deciding if a DIT is a necessary element of the crew, a Director of Photography needs to ask whether these skill sets will make the production run properly.

Even if members of the existing crew have these abilities, do they have the time to perform these functions during production? Does the on set workflow require someone with skills beyond the basics?

Some of the newer camera systems like the F23 and F35 from Sony have operating modes that lock out most of the adjustments that might be manipulated by the DIT, limiting the need for the position. So the camera itself may help in the hiring decision.

Many of the DITs that come from the engineering side can



Dale Hunter SOC wiring DIT workstation on *Speed Racer*.



Michael Taylor DIT on *Speed Racer*.

perform field repairs. If the production happens to be in a remote location, this could be an added benefit of having a DIT on the crew. On the other side of the issue, if you decide to utilize the talents of a DIT, be sure to make them part of the camera department and use their available skills. The best way to lose a good DIT is by using them only as an on-set grunt to move equipment.

There are many options on how to utilize the services of a DIT. Many productions have used the services of a DIT for only the preproduction period and the beginning of the show, to establish the working system. Others have a DIT on set for the full production to monitor the technical aspects of the program.

A DP must be aware that it is their responsibility to clearly define the duties that are required from your DIT. The biggest failures of this position have originated from a poor definition of duties at the start of production. As the production proceeds, the duties of the DIT can always expand based on individual skill sets.

So do you need a DIT on your next HD production? The answer is still maybe.



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To say that Andy Casey was a great guy is a huge understatement. He was the best possible guy. Finely tuned at his craft, delicate with the powers that be, and most of all, a driving force of humor on the set. Rule number one on Andy's crew was having a good time. "If we are not having fun, and we can't be with our families, then why are we here?" Don't misunderstand this philosophy, he was in it for the art too, but he knew that a job well done did not have to mean torture for the crew. He was a guy that worked his way through the ranks, starting as a Loader and labored away, learning every step of the journey, improving everyday.

Andy had photos of his kids on the side of his monitor. He would only have a picture of one child at a time. He felt that if all three were in the same photo, that people would not really pay attention. If he instead 'introduced' people to them one at a time, they would get to know them, and ask about each by name. Each kid would get a couple of days, then Andy would switch them. This would generally cause crew and actors alike to ask who the photo is of and who had been there last. If one of them had a big test or assignment due, they would get the featured spot so that he would think of them often. His confidence as an Operator bled into his storytelling of his family and their upbringing.

Many people admired Andy for his abilities on a set; anyone who really knew him admired him for his



Andy Casey
1963-2008

abilities as a parent. I have two kids of my own, and I hope to be as successful.

The world is certainly a little less 'Steady' today, and not framed quite as well as it could be. Andy left a big impression on those us that knew him, taught lessons that we will use everyday in our craft. But more importantly he was a great parent who loved his family and always kept his priorities clear, managing to perfectly balance not only his rig, but his work and his life.

—Lee Kazista

Andy has been selected by the SOC BOG to become an honorary SOC member and his family will receive a certificate and \$300 donation to the foundation.

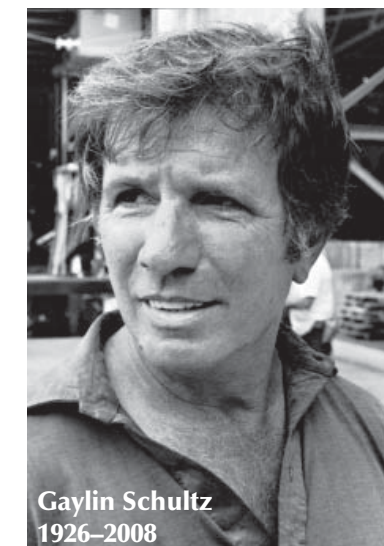
Garrett Brown writes:

On behalf of their children, Brendan, Jillian and Trevor, please give all you can to The Kathy and Andy Casey Memorial Fund, c/o Harry Copeland, Commerce Bank, One Royal Road, Flemington, NJ 08822.

Gaylin Schultz was a grip who couldn't say no to a challenge. From race cars to airplanes and boat rigs to rodeos, this grip was largely responsible for some of the best car-chase, racing and action footage ever done. Whether engineering camera mounts on suspension-busting cuts of Steve McQueen tearing up San Francisco in *Bullitt* or making the camera magic of high speed racing possible for *Le Mans*, Key Grip Gaylin Schultz became known for his ability to put cameras anywhere. If you love the glider shots in *The Thomas Crown Affair* (1968), the driving sequences in *The Getaway*, or the bird's POV in *Jonathan Livingston Seagull*, you're a Gaylin Schultz fan. His thing was to bridge the known practices of camera mounting (and subsequent lens placement) with intelligent, workable, often cutting-edge concepts that were safe as well as photographically superior to what came before.

—Jim Udel, *the eighty news* www.iatselocal80.org, May 2008, issue 152

Gaylin received the SOC's Lifetime Achievement Award for Mobile Platform Operator in 2000.



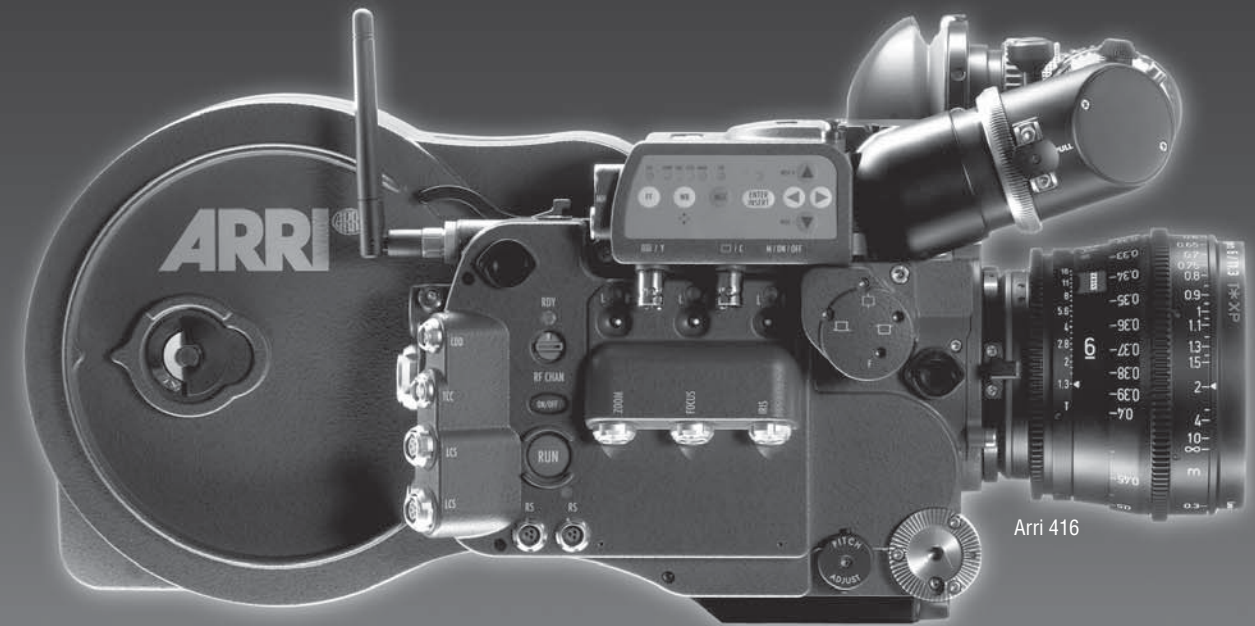
Gaylin Schultz
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ANDY HUBER

Markus Davids SOC catches up on his reading during a break from filming...

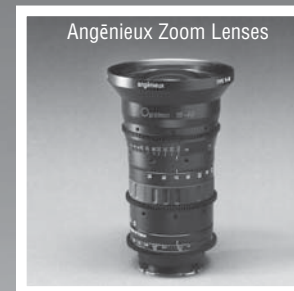
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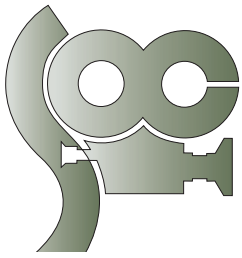
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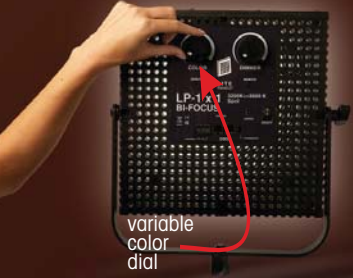
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